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Baltic Transport

bimonthly-daily companion

Journal

BTJ TRIPs
Norrköping + Turku,
Hanko & HaminaKotka

REPORT
The Baltic general cargo
and passenger markets in 2022

LEGAL
Overcoming fatigue in the transport
& logistics workplace

MARITIME
How to help the transport industry
make green corridors a reality

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The Port of Opportunities

The Port of HaminaKotka is a versatile Finnish seaport serving trade and industry. The biggest universal port in Finland is an important hub in Europe and in the Baltic Sea region.

Welcome to the Port of HaminaKotka!



Dear Readers,



First and foremost, we are more than happy to share that the statistical part of this year's **Baltic Yearbook** is out! As always, publishing it wouldn't be possible without the invaluable help of our supportive Partners – kudos to them!

Besides that, another summer is behind us, with it too, the much-awaited 80th meeting of the International Maritime Organization's Marine Environment Protection Committee. As we report in the What's in the Cabinet section, the revised IMO GHG Strategy garnered a mixed bag of responses, including voices for whom the outcomes were nothing but a punching bag. As I see it in the Baltic Sea region, decarbonising the shipping business is still in the hands of those 'sailing' the extra mile to turn the green transition into a long-term business case. Perhaps that's the only way of getting it done, naturally, with the help of seaports and investments in future fuel(s) bunkering infrastructure – as well as increasingly more in their own energy production capacities. Shrewd regulations are welcome, don't get me wrong, but that entrepreneurial grit, coupled with air bellowing that R&D furnace, is what spins the propellers.

Speaking of ports, this issue hosts two BTJ Trips we embarked on this spring: first to Norrköping and then to Finland, paying visits to Hanko, Turku, and HaminaKotka. Nothing

beats seeing with our own eyes what we're usually reporting on from behind our desks! During the recent transport logistic (tl) trade fair in Munich, we discussed future opportunities for other port visits. If you're interested in having us spotlight what's happening across your harbours, we'll be more than obliged to



Indian summer (1866) by Jasper Francis Cropsey, photo: Artvee

discuss the details. Ports are fascinating places which rightly deserve media coverage that does them justice. As a case in point, I watched John Woo's *Hard Boiled* the other day. The movie has these absolutely jaw-dropping gunfight scenes, including... in a port... including under ship-to-shore gantries... including in a harbour workshop... Dunno, we might be visiting the 'wrong' ports during our trips, or maybe pop culture gets it wrong when using these trade & travel facilitators as settings for mischief & mayhem only. Luckily, you and we know better!

Apart from that, the summer issue of our journal houses a set of articles on a variety of topics: combining route optimisation with wind propulsion for greater ship emission reduction; how to help the transport industry make green corridors a reality; staking a case for methanol as a sustainable marine fuel; how shipping is and can further progress on the issues of diversity, equity, inclusion and belonging; various regulations on pollution prevention in the shipping industry (and how to navigate them); automating container yard trucking; reducing food loss through better supply chain planning; and using 3D models is ship designing – among many, many other splendid reads. I would also like to draw your attention to the interview with GEODIS' Matthias Hansen, with which we've revived the tradition of insightfully chatting with the company during tl – what a joy it was to meet after four long years!

As a foretaste of the chillier days awaiting us, the Collector's corner will take you to the Antarctic. The Transport miscellany column will perchance intrigue you with a shipping version of *The Ugly Duckling* fairy tale, the story behind a mysterious photo from the National Museum of Science and Technology in Stockholm, an even more puzzling pic from the Finnish Heritage Agency, and some art explanation (which might come in handy if you happen to suddenly decide to live the 'romantic' life of a 19th-century fisherman after a trip to a gallery).

Bon voyage!

Przemysław Myszka

Baltic Transport Journal

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PORTS
CONFERENCE**

6-8 September 2023
Ystad, Sweden

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Baltic Ports Conference 2023, 6-8/09/23, SE/Ystad, www.balticportsconference.com

During its must-attend annual conference, the Baltic Ports Organization will once again welcome its Members and Partners from across the region and beyond to discuss the latest events and trends shaping the port industry. The 2023 edition will be hosted and co-organised by the Swedish Port of Ystad, promising to make the agenda and accompanying attractions nothing short of an extraordinary experience.



GreenPort Congress & Cruise, 18-20/10/23, PT/Lisbon, www.portstrategy.com/greenport-cruise-and-congress

To mark the 135th anniversary of the Port of Lisbon, the 18th instalment of GreenPort Congress & Cruise will showcase this vital and vibrant Atlantic gateway to Europe from 18-20 October. The event brings together the whole port community and is a platform for the exchange of information on the latest in sustainable environmental practice.



Bulk Terminals 2023, 25-26/10/23, PT/Lisbon, www.bulkterminals.org

The Annual Conference of the Association of Bulk Terminal Operators (ABTO) – the only event aimed at the entire bulk terminals industry! As well as terminals and ports, we welcome equipment and service suppliers, professional advisors and academics to the conference. Indeed, ABTO strongly feels it is only through interaction with these others that bulk terminals will achieve increased operational efficiencies and safety and environmental compliance.



TransLogistica Poland 2023, 7-9/11/23, PL/Warsaw, translogistica.pl

TransLogistica Poland: the leading in Poland and Central-Eastern Europe business event for entrepreneurs who use or seek transport and logistics services, as well as for everyone professionally associated with the industry. It is a place where shippers and cargo owners (producers, retail chains and distributors, among others) can find comprehensive and highest-quality logistics services for their goods.



The Motorship 44th Propulsion & Future Fuels Conference, 21-23/11/23, DE/Hamburg, www.motorship.com/propulsion-and-future-fuels-conference

The conference provides senior executives with a meeting place to learn, discuss and share knowledge of the latest developments in efficient propulsion technology and low flashpoint, low carbon fuels.



Scandinavian Maritime Fair, 14-15/05/24, DK/Copenhagen, www.scandinavianmaritimefair.com

Scandinavian Maritime Fair recognizes the need of bringing together the Scandinavian maritime community. The aim is to unify and leave a lasting imprint on the world. Whether designers, manufacturers, suppliers, operators, shipowners, or service providers – both onshore and offshore – this is where industry leaders, young innovative companies and decision makers meet.



Work hard. Think hard.

It's something about moving millions of tonnes of cargo that really gets your brain going. At the Port of Oxelösund we think a lot on how to make transportation more efficient and sustainable. We do our best thinking together with our clients and partners. For example, with SSAB and ESL Shipping, we recently put a lot of thought into Virtual Arrival, a trial project where ship speeds are adjusted in real-time for arrival just when the berth is free. The result was spectacular – 24 % average reduction of emissions. How can we innovate with you, got anything on your mind?

The Port of Oxelösund is more than a port. We are a business partner who solves your logistical challenges and helps optimize your goods' journey, from start to finish. Our goal is to be the Baltic's leading port terminal, with Europe's best stevedoring services.

PROMOTING SAFETY INNOVATION AT TOC EUROPE 2023

The second instalment of **Safety Village** this June from 13th to 15th in Rotterdam – a unique initiative of **TT Club** and the **International Cargo Handling Coordination Association** – again set up a venue for workshops and panel sessions, providing opportunities for companies to showcase their innovative safety devices, processes, and services. Five two-hour-long, specially convened panel sessions, spread through three days, gave all aspects of safety in cargo handling an airing with the goal of advancing the cause of a more secure and sustainable environment for the goods and equipment featured in global trade. Click [here](#) to read the event's summary.



Photo: TOC Europe

INCREASING EUROPEAN PORTS' VIGILANCE AGAINST DRUG SMUGGLING

TT Club and its partners from **BSI Screen** are drawing the port industry's attention to the exponential growth in contraband drugs entering Europe. In April-May 2023 alone, reports included finding cocaine in containers of fruit going through the Port of Antwerp; in Rotterdam, narcotics were discovered in reefers carrying melons from Panama; ecstasy with a value of €1.5m was intercepted in a truck at Calais, while 133kg of marijuana and hashish at the Port of Motril in southern Spain (brought in from North Africa); and news came of smuggling gangs with links to Brazil operating in Lisbon and Oporto. "These are just fragments of the evidence that we have of the crucial role ports are playing in the illicit drug trade across Western Europe," comments **Mike Yarwood**, Managing Director Loss Prevention at TT Club. **Erica Bressner**, BSI's European Analyst, adds, "Increasing awareness, particularly the role of European ports in drug smuggling, is crucial to restricting this trade, especially as indications show that smuggling at ports may be increasing for certain key narcotics, like cocaine. Europol has reported record-setting seizures of cocaine every year since 2017, particularly in seaports [...]" She furthers, "In response, European port authorities have worked to implement additional security measures to combat this trade and its concurrent violence. However, the control of the criminal syndicates is such that they have the ability to adapt their smuggling routes to evade authorities. This includes a diversification of smuggling routes to target non-traditional ports of entry where security measures are less intensive." TT Club points out that criminals dispose of a sizeable toolbox of levers: from bribing transport & logistics workers, customs officials and police officers through threatening port workers and their families (often online and through social media) to online hacking to then set upon unsuspecting trucks drivers to steal the cargo unit with the contraband. Yarwood outlines one strategy, "Employee vetting and training both in terms of motivating them to be vigilant and loyal but also in terms of maintaining secure processes of documentation and online communication." He also advises, "Identifying the more common origin points of contraband cargo, such as South America and North Africa, and 'rogue' consignees and unexpected delivery points will help." A new 70-strong security corps was established in Antwerp, an increased number of CCTV surveillance cameras and drones got deployed in Rotterdam, and a specialist anti-drug trafficking police unit in the Netherlands was set up. "We are dealing with global crime syndicates. Efforts to combat their activities will be akin to squeezing a half-inflated balloon, we may constrict them in one or two ports, but they will find ways to exploit others. We urge all in our industry to be aware of the possibilities of drug importation and to take all steps they can to restrict this illicit trade," advocates Yarwood.

MACN HAS TWO NEW MEMBERS

TT Club has joined the **Maritime Anti-Corruption Network (MACN)** – an over 180-member-strong global business network working towards the vision of a maritime industry free of corruption that enables fair trade to benefit society at large – in a move to underline further the mutual insurer's commitment to making the industry safer and more secure. "TT Club has long been aware of the issues surrounding corruption in the maritime transport industry. The insurer is dedicated to ensuring these corrupting effects on the overall integrity of freight transport worldwide are minimised, if not eradicated," the only non-P&I insurer to be part of MACN underscored in a press brief. TT Club will work with MACN in implementing its anti-corruption principles by raising awareness of corruption issues and promoting best practices to combat its effects. The insurer will also help the Network promote its drive for collective action with the aim of creating a more sustainable operating environment through anonymous reporting and data analysis. Moreover, through its experience and knowledge of shore-side operations, TT Club will widen the scope of MACN efforts to combat corruption beyond its current maritime focus. **Mark Argentieri**, TT Club's COO, commented, "At TT, we have aligned our ESG strategy with the UN Global Compact and its Sustainable Development Goals, becoming a signatory to the UN Principles for Sustainable Insurance (UN PSI) late last year. In now joining MACN, we are taking a further step in focusing on the issues that are most relevant to our Members, and where the Club is able to have a positive impact, cooperating with international institutions that are dedicated to ensuring increased transparency in maritime transactions and enhanced procedural integrity." The Helsinki-headquartered **ESL Shipping** has also subscribed to MACN. "Membership in MACN provides us additional tools to support our seafarers when they visit areas where the risk for bribery and corruption is high. Thanks to their large database, we will have a better understanding of what kind of issues might be expected in a certain port," explained **Kirsi Ylärinne**, the company's Operations & Environmental Director. **Mikko Rausti**, Sea Personnel, Quality & Safety Director at ESL Shipping, added, "When our vessel is to call a port where the crew is expected to face a risk of facilitation payments or other attempts of fraud or corruption, our safety function goes through the best practices according to internal and MACN guidelines with Master. Together they ensure that direct contact lines and procedures are established for each port call."

TANGIBLE BENEFITS FROM APPLYING MODERN SAFETY TECH

During a recent webinar, the **International Cargo Handling Coordination Association (ICHCA)** and its partners stressed the need to keep the wheels of innovation spinning to provide transport workers with ever-increasing workplace safety. According to ICHCA, there have been over 350 shore-based fatalities, including 349 port workers and 20 truckers globally, since 2000. **Richard Steele**, the Association's CEO, urged in this context, "The key thing that industry can do is to agree on common good practice and then act as champions, role modelling those good values and creating the expectation of standards across the industry." Safety and sustainability advisors from **Rombit** explained that technology in a driver's cab that constantly reminds workers to perform their tasks safely could significantly reduce accidents (by as much as 80%). Maintenance, energy and repair costs were reduced by around \$5,000/vehicle/year from such innovations as the real-time digital coach. The company's CEO, **Evert Bulcke**, commented, "To be successful, you need training and procedures, supported by continuous training and alerting through digital tools." Another estimation, this time from the **US Occupational Safety and Health Administration**, says that around 70% of all lift and crane accidents could be prevented through training and the application of digital tools. Steele also agreed with **Steve Biggs**, Senior Assistant for the **International Transport Workers' Federation**, that changes to work practices must be agreed with staff, getting their 'buy-in,' as only then could new technological fixes and innovations in work practices be successfully applied. In a follow-up press release, ICHCA stressed that "safety rules need to be reiterated constantly, but that must be combined with visible and felt health and safety leadership from management to the shop floor. All of which can then be supplemented by tech that produces data and can monitor safety performance. In its continued campaign to encourage such innovation, ICHCA will once more launch the annual **TT Club Innovation in Safety Awards** on September 4th this year."

NCB HAZCHECK-WWF ANTI-ILLEGAL WILDLIFE TRADE CO-OP

The company specialising in cargo screening has teamed up with the **World Wildlife Fund (WWF)** to tackle the pervasive issue of illegal wildlife trade to "[...] safeguard endangered species and protect global biodiversity for generations to come," the two said in a press release. By developing an industry source for historical data from past seizures that can be integrated into a container line's internal cargo screening solution, or an industry tool such as NCB's flagship software, Hazcheck Detect, WWF aims to enhance the screening efficiency of bookings and shipments. This data-driven approach will enable the detection system to accurately identify potential illegal wildlife shipments, bolstering the detection capabilities of carriers and contributing to the fight against illicit wildlife trade. "The current system and practice of cargo screening are not enough, and the shipping and maritime container industries need a shared technology solution to effectively screen shipments. And this is what the partnership aims to accomplish," underlined **Nicole Wong**, CEO of WWF Hong Kong.

PREPARING SEAFARERS FOR DECARBONISATION & DIGITALISATION

DNV has prepared ***The Future of Seafarers 2030: A Decade of Transformation*** report (commissioned by the **Singapore Maritime Foundation**), in which the classification society addresses the massive changes facing the shipping world, including new seafarer training and upskilling programmes to ensure operational safety. The study examines the implications of decarbonisation and digitalisation on workforce preparedness in the current decade. "New fuels and propulsion technologies, the growing importance of IT on board, ship-to-shore integration, and the emergence of shore control centres come with new challenges and opportunities for ship crews," DNV wrote in a press release. The class has also prepared **a slideshow summary** of the study into the future of seafarers.

The Port of HaminaKotka:

8.91mt handled in I-VII 2023 (+3% yoy)

Whereas exports contracted by 7.7% year-on-year to 5.77mt, imports advanced by 30.8% yoy to 3.14mt. At the same time, however, cabotage traffic lost 55.9% yoy to 165.9kt. With 355,664 TEUs, Hamina-Kotka's container traffic was almost on par (-0.3% yoy), with the corresponding result from last year.

The Port of Turku:

1.5m passengers welcomed in I-VII 2023 (-5.9% yoy)

The Finnish seaport handled 983.9kt over this year's first seven months (-23.5% yoy), including 504.2kt of exports (-17.3% yoy), 452.4kt of imports (-29.2% yoy), and 27.3kt made in cabotage traffic (-24.5% yoy). A total of 49,509 trucks & trailers went through Turku's quays (-22.7% yoy), plus 1,748 TEUs (+10.8% yoy).

Port of Ystad:

339,684 passengers served in Q1 2023 (-0.3% yoy)

The ferries serving the Swedish seaport's traffic also transported 112,963 private vehicles (-0.5% year-on-year). Overall, Ystad took care of 666kt in the reported period (-10.2% yoy), including 637kt of wheeled cargo (-13.1% yoy), 22kt of dry bulk (+267% yoy), 4.0kt of forest products (+33.3% yoy), and 2.0kt of break-bulk. Unit-wise, 54,295 trucks & trailers went through the port's quays (-9.8% yoy).

Finnlines:

306k passengers served in H1 2023 (+7% yoy)

Cargo-wise, this year's first half results were mixed for the shipping line. Whereas its fleet carried fewer ro-ro cargo units (-9.4% year-on-year to 356k) and less non-unitised freight (-4.6% yoy to 708kt), Finnlines' vessels transported more commercial vehicles (+20.5% yoy to 88k units).

The Port of Liepāja:

3.21mt handled in I-V 2023 (-1.4% yoy)

While dry bulk, the Latvian seaport's main trade, advanced by 4.4% year-on-year to 2.26mt, general cargo contracted by 11.3% yoy to 812.9kt and liquid bulk by 20.1% yoy to 140.3kt. That said, wheeled (ferry cargo) traffic advanced by 0.9% yoy to 643.4kt. Also, more passengers went through Liepāja's quays, up 10.3% yoy to 28,936 ferry travellers.



Photo: Laskana

The Port of Piteå:

492kt handled in Q1 2023 (+34.1% yoy)

Forest products and liquid bulk, the Swedish port's leading trades, advanced 75.1% year-on-year to 324kt and 12.1% yoy to 158kt, respectively. Piteå also handled 1,796 vehicles (+58.5% yoy). On the other hand, container traffic decreased by 53.2% on the Q1 2022 result, down to 568 TEUs. There was also no ro-ro traffic vs 44 units last year.

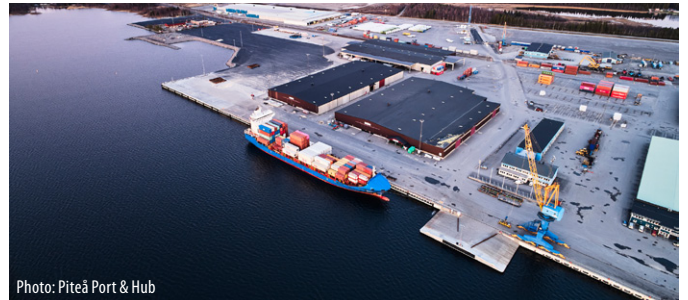


Photo: Piteå Port & Hub

The Port of Södertälje:

305kt handled in Q1 2023 (+7% yoy)

Liquid bulk, the Swedish seaport's prime trade, advanced by 4.7% year-on-year to 112kt. Södertälje also took care of 90kt of forest products (+1.1% yoy), 33kt of dry bulk (+32% yoy), and 28kt of containerised freight (-9.7% yoy; a total of 2,899 TEUs, -19.5% yoy). On the wheeled cargo side, 17,941 cars were handled (+33.4% yoy) and 61 ro-ro cargo units (+110% yoy).

The Port of Trelleborg: 225,826 ro-ro cargo units handled in Q1 2023 (-1.9% yoy)

Whereas the handling of trucks & trailers contracted by 3.2% year-on-year to 219,648 units, more railcars went over the Swedish port's quays, up 81.3% yoy to 6,178 wagons. Overall, Trelleborg took care of 3.36mt (-1.0% yoy). Passenger traffic was up 4.3% yoy to 286,150 ferry travellers. Ferries serving Trelleborg also brought 49,536 private vehicles (+14.8% yoy).

The Port of Norrköping:

931kt handled in Q1 2023 (+4.4% yoy)

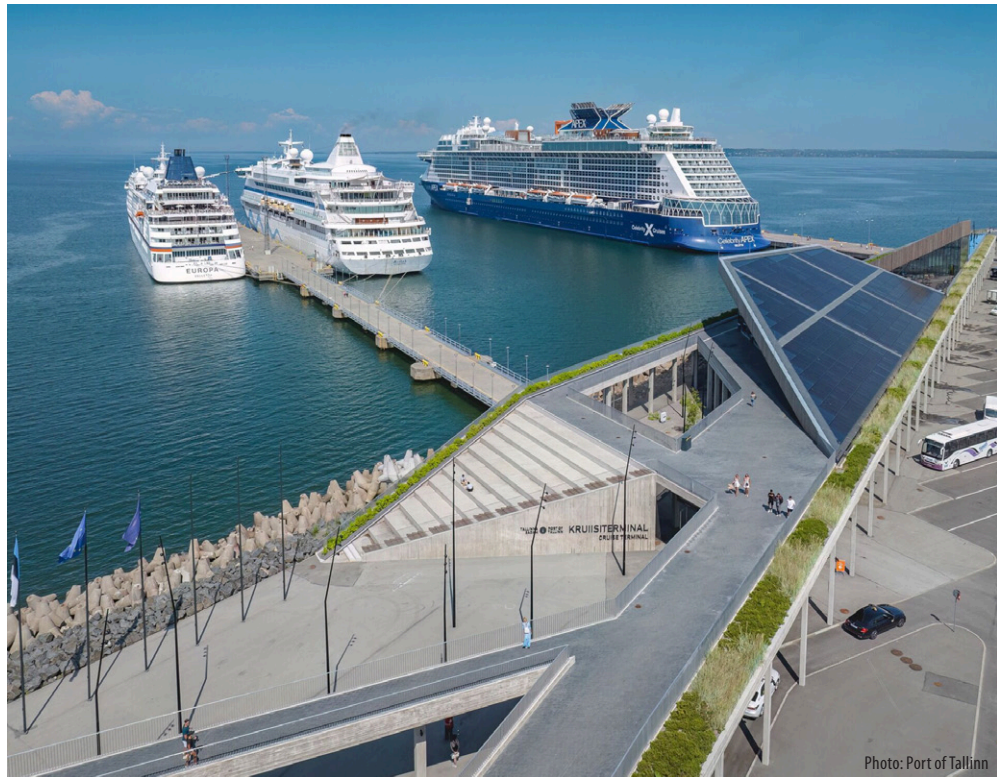
The Swedish port handled more liquid bulk (+25.3% year-on-year to 337kt) and forest products (+16.1% yoy to 216kt). On the other hand, the turnover of dry bulk and containerised freight contracted: by 0.9% yoy to 209kt and by 25.1% yoy to 167kt, respectively. Container traffic totted up to 22,882 TEUs (-16.1% yoy).

The Port of Helsinki:

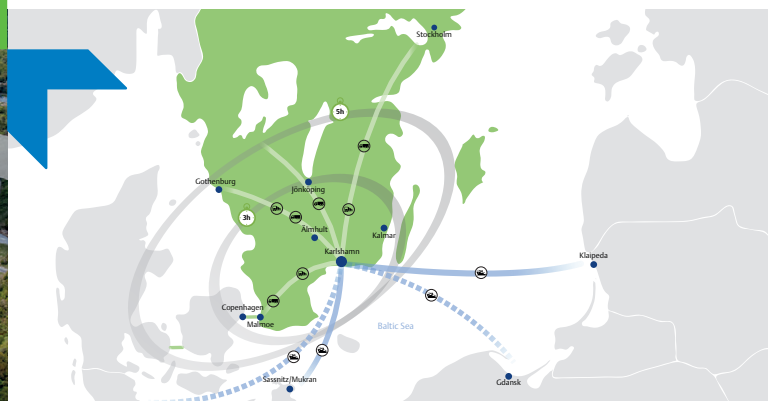
3.99m ferry passengers served in H1 2023 (+25.3% yoy)

The ferries serving Helsinki's traffic also transported 682,813 private vehicles, a 10.4% year-on-year increase. Additionally, the Finnish seaport welcomed 58,502 travellers on board cruise ships, a 21.9% advance on the H1 2022 result. Cargo-wise, 7.03mt went through Helsinki's quays (-8.6% yoy), of which international traffic was responsible for 6.9mt (-9.7% yoy) and cabotage – 132.2kt (+152.2% yoy). The handling of unitised freight contracted by 9.1% yoy, down to 5.86mt: wheeled (ro-ro & ferry cargo) – 4.22mt (-6.7% yoy) and containerised – 1.64mt (-14.5% yoy). Unit-wise, Helsinki took care of 330,299 trucks & trailers (-6.8% yoy) and 214,298 TEUs (-11.4% yoy). The Finnish seaport also handled 674kt of dry bulk (-1.4% yoy) and 424kt of break-bulk (-16.6% yoy).

The connection to Helsinki, the leading engine of Tallinn's traveller traffic, advanced by 12.5% year-on-year to over 1.86m. The service to & from Stockholm rose by 22.4% yoy to 158k passengers. With 48k, the Muuga-Vuosaari crossing gained 1.8% yoy. Cruise traffic advanced, too: up 28.1% yoy to 69k guests. "It is positive that the increase in the number of passengers, which started more than a year ago, is continuing at the expected pace. In addition to the growing number of people travelling on regular lines, the occupancy rate of cruise ships has improved significantly, which creates a positive basis for cruise ship visits in the following periods," commented Valdo Kalm, Chair of the Port of Tallinn's Management Board. On the cargo front, the Port of Tallinn handled 3.25mt (-30.6% yoy), including 1.68mt of wheeled cargo (-10.2% yoy), 515kt of dry bulk (-9.8% yoy), 469kt of containerised freight (-20.6% yoy; 56,062 TEUs, -29.1% yoy), 463kt of liquid bulk (-67.8% yoy), and 122kt of break-bulk (-41% yoy).



Advertisement -



THE PORT OF KARLSHAMN is one of Sweden's major ports and is strategically located in the south, facing the "new" Europe. There are plenty of industries and major consumer areas in the surrounding region. Customers all over the south of Sweden and Denmark can be reached from Karlshamn within 3–5 hours. Karlshamn has lots of development areas offering direct access to the port, intermodal rail terminal, E22, Logistics cluster and

environmentally friendly energy. The port, with its business mindset, is constantly developing and expanding. There is ongoing expansion of the RoRo-port with a 3:rd berth and widening of berth no. 2 for 230 m long vessels. Also shore-to-ship power connection, extended line-up areas and more. Large investments are planned for development of the rail infrastructure.

Deltamarin to further design a number of PCTCs

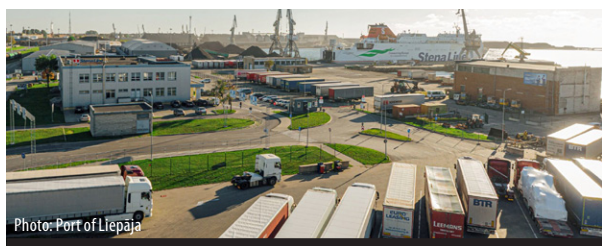
The company's offices in Finland, China and Poland are busy delivering the full basic and detail designs for several pure car & truck carriers (PCTC), all ordered based on Deltamarin's concept designs. The works include BYD Auto's four liquefied natural gas (LNG)-powered PCTCs of 9,200 CEU-capacity, the first of which will be delivered by China Merchants Industry in 2025; four 7,400 CEUs LNG-run units for Sallam Lines (with an option for two more), constructed at China Merchants Jinling Shipyard (Nanjing) and scheduled for deliveries from 2026; and two 9,300 CEUs methanol-fuelled vessels for China Merchants Energy Shipping (with four optional), put together by China Merchants Heavy Industry (Jiangsu) and expected to start sailing from 2026 onwards. Deltamarin says most of the design work will be carried out this and next year.

Rostock & Trelleborg get CEF funding

The German and Swedish seaports have been granted €12m within the joint Rail-IT-MoS project. The Port of Trelleborg, which will coordinate the initiative, has received €8.0m to complete the eastern part of the seaport, including asphaltting, filling, paving layers, channelling, installing of electricity, IT, and telecom equipment as well as lighting masts in three selected areas. The Port of Rostock will, in turn, use the funds to streamline & rebuild its existing railway infrastructure.

Liepāja secures CINEA funds

The European Climate, Infrastructure and Environment Executive Agency (CINEA) has granted €6.9m for modernising berth no 46 at the Latvian seaport. The money will go into technical studies and construction works, improving the infrastructure that serves Liepāja's wheeled traffic (Stena Line's ro-pax service to & from Travemünde).



Governmental assent to Södertälje's new fairway

The Swedish cabinet has given its green light to a new passage between Landsort and Södertälje, making it possible for the latter to welcome larger vessels (220 by 32 m without any restrictions). The existing fairway will be widened & made deeper and will receive improved marking. Additionally, two new sections will be added: Fifång-Regarn and Oaxen-Skanssundet. The new fairway will be two kilometres longer than the current one and deeper (10.5 m vs today's 9.0 m). Nowadays, ships 160 m-long can sail through the fairway without restrictions (up to 200 m in length in certain conditions). The Swedish Maritime Administration will be responsible for the upgrading project. "We have waited long for this decision, which means a lot to us in the light of the possibilities to develop Södertälje as a future sustainable transport alternative," Per Fredman, Deputy CEO of the Port of Södertälje, commented. He furthered, "Thanks to the new fairway, we will serve bigger ships; equally important, the passage will become safer for all traffic. It is a vital step towards an efficient, environmentally friendly, competitive transport system. Larger vessels will make it possible to unburden the regional road network. The entire country will positively benefit from the road-to-sea shift." The set-up of the current fairway, which is open to the public, is accident-prone, with narrow passages causing traffic restrictions when it is dark, there is poor visibility or strong wind.

Turku's new ferry terminal goes forward

The city council of the Finnish Turku has approved the amended town plan for the brand-new Ferry Terminal Turku (FTT), expected for commissioning in 2027. The approval enables the building of the joint Port of Turku-Tallink & Silja Line-Viking Line terminal, the relocation of rail passenger operations, and the development of other future port traffic activities. In addition, the council approved the range of the cost estimate for implementing the public areas in the town plan for FTT to be from €29-54m (the entire EU Connecting Europe Facility-supported project is estimated to cost €172m). The 1957-launched passenger pavilion on Linnanniemi will be demolished to make room for FTT (the freed-up area will instead house the Museum of History and the Future). The FTT project proceeds on various fronts: the quay no 23 construction tender process is underway (works are intended to kick off in September/October 2023 and be completed by March 2025). The architectural and spatial planning of the terminal is in progress (to be finalised by end-October 2023). The purchasing of area and traffic planning is, too, progressing. The decision on the former will be made by the end of August 2023, while the work on the latter will start the following month. This summer, it is also planned to buy equipment: ferry berth ramps and passenger gangways (FTT will also offer the automooring technology).



Photo: PES-Architects

EUROPORTS Germany's new LPS 420 E goes into operation

The stevedore operating in the German Baltic Port of Rostock has started using the all-electric portal slewing crane for handling various dry bulk goods. The company's 48 m outreach LPS 420 E can move up to 75t of bulk material, some 1,200t/hour, and 124t in hook operation. The Norwegian Port of Borg will be the next one to receive an LPS 420 E, with late 2023 expected for delivery.



Photo: Liebherr

Electramar – launched

The first hybrid vessel of the Swedish AtoB@C Shipping, a subsidiary of the Finnish ESL Shipping, was launched at the Chowgule Shipyard in India. Once delivered this autumn, the 90 by 16 m, 5,350 dwt, 1A ice-class ship will offer 7,650 m³ of carrying capacity. Electramar is the first in a series of 12 newly built green coasters, with five under construction at various stages. The order book is planned for completion by Q2 2026. All newbuilds will be able to connect to an onshore power supply.

HHLA TK Estonia – upgraded

The multipurpose terminal in Tallinn's Muuga Harbour has a new double ramp for streamlining ro-ro traffic. Eckerö Line's ferry *Finbo Cargo*, which connects Muuga with Helsinki's Vuosaari on a daily basis, uses the new superstructure. "The introduction of a two-level ramp at HHLA TK Estonia terminal will significantly speed up the process of loading and unloading vehicles and will allow removing even more cargo traffic from the city centre, which in turn will reduce the load on the transport infrastructure of the City of Tallinn," Valdo Kalm, Chairman of the Port of Tallinn's Board, commented.



Photo: HHLA/Raul Mee

Brand-new Alstom locos join PCC Intermodal's fleet

The Gdynia-based company got hold of four Traxx 3 multi-system locomotives, which will be used in domestic & international rail container traffic. "To develop further and open new corridors for intermodal transport, in addition to investments in fully functional transshipment terminals, we need appropriate technical facilities: locomotives, reloading equipment, wagons, chassis and trucks. By adding to the company's fleet next Traxx locomotives, PCC Intermodal, operating in total 15 electric locomotives under its own licences, will be able to expand and increase the flexibility of its offer of daily intermodal connections in international corridors," said Adam Adamek, Vice-President of PCC Intermodal's Management Board. According to the manufacturer, "The third generation Traxx locomotive delivers increased operational performance and reliability and comes with a higher energy efficiency, and its maintenance intervals have been extended by 33% to improve availability and reduce maintenance effort, compared to earlier versions."

Ten Konecranes ordered for CMP's new terminal

The Finnish manufacturer of port cargo handling equipment has won a public machinery supply tender from Copenhagen Malmö Port (CMP) for a new sea container facility in the Danish capital. The order consists of eight hybrid straddle carriers, to be delivered in Q4 2023, and two ship-to-shore gantries, scheduled for delivery in Q1 2025. The 2025-ready 165k m² container terminal will be located at Ydre Nordhavn, a few kilometres from the current 140k m² one at Levantkaj. The new facility will offer 550 m of 12.5 m deep quay wall (2.5 m deeper than now). Refilling some 100 ha of land has been carried out at Ydre Nordhavn to make room for the container terminal (as well as accommodate 28 ha of a new nature park).



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PCC Intermodal connects Poland and Italy

After trialling the route in July 2023, the Gdynia-based company decided to kick off a rail container service (incl. bulk, tank & reefer) between its terminal in Gliwice and the Padova Interporto Terminal this August. PCC Intermodal is prepared to offer up to five weekly round trips for train sets comprised of around 20 wagon platforms, including 60, 80, and 90 ft. Traction will be provided by Captrain Poland and Captrain Italy, with PCC Intermodal supplying the wagons.

Malungsfors added to Green Cargo's network

As of the coming December, the terminal in west-central Sweden will be part of the country's state rail haulier's chain of loading points, connected to Gothenburg with three weekly round trips. The inclusion results from an agreement between Fiskarhedens Trävaru, a privately-owned sawmill in northwest Dalarna (375k m³/year) and the operator of the Malungsfors terminal, Green Cargo, and the Gothenburg-based logistics company Träfraktkontoret (handling some 75k TEUs/year of forest product exports). Earlier, Fiskarhedens Trävaru had one per week connection with Gothenburg, while the new deal already includes the possibility of upgrading the timetable to five weekly runs (intermodal as well as wagon loads). "This agreement is beneficial not only for Fiskarheden but for all companies across the region since they will be able to shift their shipments from road to climate-smart rail, which means stronger export and import opportunities for the region," underlined Joakim Limberg, Marketing Manager at Fiskarhedens.

New Lithuania-Poland rail service

The Lithuanian LTG Cargo and its Polish chapter LTG Cargo Poland had been testing (on-demand basis) the Kaunas-Sławków route for the first half of this year; as of 15 June 2023, the intermodal connection, with a stopover in Pruszków at METRANS' terminal, became a regular twice-a-week one.

New Denmark-Germany rail link

Samskip has launched a new combined service for unitised freight between its terminal in Duisburg and Padborg. Traction for the thrice-a-week 40-unit capacity connection is taken care of by TX Logistik. At the same time, the company has put in motion three other services linking the Samskip Terminal Duisburg: to Padua (four/week) and Verona (3/w) in Italy and with the French Macon (4/w). "At a time of heightening driver shortages across Europe's road haulage sector, the new rail service additions build reliable, efficient and sustainable rail service capacity along four major European routes, each connecting Duisburg direct with leading regional centres for unitised freight," Samskip underlined in a press release. Samskip shared that its eight 720m-long tracks facility in Duisburg handles up to 250k units/year.

Hupac links Poland and the Netherlands

As of 2 May 2023, the company's trains are shuttling two times per week between Hupac's terminal in Warsaw and CLdN's facility in the Port of Rotterdam (from which direct sea connections to Ireland, Portugal, and the UK are available).

Norrköping added to MSC's Baltic Loop 11...

The Swedish port is now part of the sea container service that connects the region's Tallinn, Norrköping, Lübeck and Åhus with Antwerp. "We are very proud about this. It is good for our customers choosing to ship containers to & from the Port of Norrköping. It provides additional opportunities to reach overseas markets as well as new short-sea options from Lübeck and Tallinn," said Magnus Grimhed, the port's Marketing & Sales Manager.

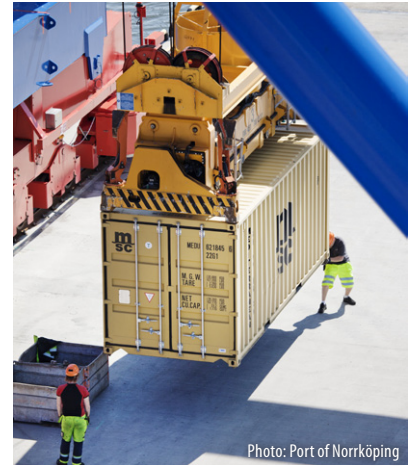


Photo: Port of Norrköping

... while Halmstad added to the Belgium-Denmark loop

The Swedish seaport (part of the Port of Halland) is, as of 1 June 2023, included in the weekly sea container service of MSC that also calls to Antwerp and Copenhagen. The inaugural berthing was carried out by the 161 by 25 m *MSC SUEDEROOG F*, offering 1,368 TEUs of capacity. According to the port authority, the addition has the potential to up Halmstad's yearly container traffic by as much as 25%. The service is expected to carry household, electronic and fast-moving consumer goods, as well as recycled materials and forest products.



Photo: Port of Halland

Stena Line takes over the ferry & ro-ro terminal in Ventspils

For an undisclosed sum, the Swedish shipping line has acquired the operations of the facility in question in the Latvian seaport (the acquisition is subject to authority approval for competition compliance). "The Baltic Sea is a major growth region for Stena Line, and our investment in Ventspils shows how committed we are to developing our business with Latvia. With this strategic move, we have secured a long-term position in an essential part of our European network, and I am looking forward to working with our customers and partners to continue expanding in the region," commented Niclas Mårtensson, Stena Line's CEO. The sister ships *Stena Baltica* and *Stena Scandia*, each offering room for 970 passengers and 2,875 lane metres for freight, serve the Ventspils-Nynäshamn crossing.

Finlines takes delivery of the first Superstar

After just over two years of construction, the company took hold of *Finnsirius*, the first 235.6 by 33.3 m ferry in a series of two. The 1 A Super ice class ro-pax, offering room for 1,100 passengers and 5,200 lane metres for cargo, will start plying across the Naantali-Långnäs-Kapellskär crossing this September. Her sister ship, *Finncanopus*, is expected for delivery before year-end. The two feature several emission-reduction technologies: air lubrication, battery systems, scrubbers, and waste heat recovery. They will also take advantage of the automooring technology and draw power from onshore power supply facilities. *Finnsirius* and *Finncanopus* are also equipped with ballast water treatment systems. "Finlines' Green Newbuilding Programme [€500m in total] has been a massive investment which will benefit our freight customers and private passengers. These hybrid ro-pax vessels are not only the largest in the company's fleet so far, but they transport cargo in a more sustainable manner. For example, the vessels have been equipped with enormous high-powered battery banks and onshore power supply in order to have zero emissions while at port. In addition, port operations will also be more efficient with auto-mooring," highlighted Tom Pippingsköld, President & CEO of Finlines.



Photo: Finlines

New ro-ro company to traffic between Poland and Sweden

Wallenius and Greencarrier have set up a new shipping line, Lakeway Link, that will connect the Swedish ports of Södertälje and Västerås with the Polish Gdynia and Gdańsk. The twice-a-week service, intended to kick off at the end of this year, will be operated with Mälarmax vessels for carrying wheeled cargo, including high & heavy. "Lakeway Link will open the waterway between important logistics points in Europe that previously could not be reached efficiently by sea. This is positive from a sustainability point of view as it reduces emissions while contributing to more efficient flows and decreased heavy traffic on the roads," Fredrik Hermansson, CEO of Greencarrier Liner Agency Sweden, said. Göran Söderdahl, Global Senior Commercial Manager at Wallenius Marine, added, "Lakeway Link will strengthen the development of Swedish shipping. We will design and build new vessels based on the latest technology, contributing to more sustainable logistics in both the Baltic Sea and our inland waterways, where Lake Mälaren plays a major role. The ships will be designed to handle different types of cargo as well as socially beneficial missions, such as sea rescue."

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IMO GHG Strategy – revised (and praised & criticised)

Members of the International Maritime Organization (IMO) adopted the revised strategy to reduce greenhouse gas (GHG) emissions from international shipping during the 80th meeting of the IMO's Marine Environment Protection Committee (MEPC) this July. **The revised IMO GHG Strategy** includes a shared ambition to reach net-zero GHG emissions from international shipping close to 2050. IMO's vision also includes reducing CO₂ emissions per transport work, as an average across international shipping, by at least 40% by 2030 (vs 2008 levels), and the uptake of zero or near-zero GHG emission technologies, fuels and/or energy sources to represent at least 5% (striving for 10%) of the energy used by international shipping by 2030. The Strategy also speaks of "indicative checkpoints" to reach net-zero GHG emissions from international shipping: reducing the total annual GHG emissions by at least 20/70% (striving for 30/80%) by 2030/2040 (vs 2008). MEPC80 also tackled the issue of a "basket of candidate measures" (technical & economical, such as fuel standard & levy) to make its vision a reality; these will be further elaborated on over the coming one and a half years, set to enter into force in early 2027. The responses to the revised IMO GHG Strategy have been a mixed bag. The International Association of Ports & Harbors welcomed the move while stressing the need to provide adequate port infrastructure catering to making shipping green. Wilfried Lemmens, Managing Director of the Royal Belgian Shipowners' Association, said, "More specific wording on the actual deadline would have been welcomed, but we understand the need for some flexibility where needed to achieve the goal. Most importantly, this is the first industry-specific climate agreement. It is the foundation to further ensure a level-playing field in the sector." Johannah Christensen, CEO of the Global Maritime Forum, commented, "[...] It's a remarkable improvement that the revised GHG Strategy now aims to achieve

net-zero emissions by or around 2050, and the introduction of indicative 2030 and 2040 checkpoints for emissions reductions sends an important signal to governments and industry. However, the revised strategy falls short to provide the necessary clarity and strong commitments for a just and equitable Paris Agreement-aligned transition." She further specified, "The shipping industry is ready for a full decarbonisation and is, in fact, taking concrete steps towards achieving this goal. The Global Maritime Forum and its flagship initiative, the Getting to Zero Coalition, firmly believe that as a next step, the IMO must develop ambitious and rigorous policy measures, for example, introduce a levy on the emissions, to more closely align the shipping industry with the goals of the Paris Agreement, and create attractive incentives for companies to invest in zero-emission fuels and vessels." Others, in turn, didn't mince their words. Faig Abbasov, Director of Shipping at Transport & Environment, said, "Aside from FIFA, it's hard to think of an international organisation more useless than the IMO. This week's climate talks were reminiscent of rearranging the deckchairs on a sinking ship. The IMO had the opportunity to set an unambiguous and clear course towards the 1.5°C temperature goal, but all it came up with is a wishy-washy compromise. Fortunately, states like the US, the UK and the EU don't have to wait for China, Brazil and Saudi Arabia to act. Ambitious national policies and green shipping lanes can have a global impact. It's time to think globally, act locally." John Maggs, President, Clean Shipping Coalition, agreed, "There is no excuse for this wish and a prayer agreement. They knew what the science required and that a 50% cut in emissions by 2030 was both possible and affordable. Instead, the level of ambition agreed is far short of what is needed to be sure of keeping global heating below 1.5°C and the language seemingly contrived to be vague and non-committal."



Photo: International Maritime Organization

CEM Hubs – launched

The Clean Energy Ministerial – a global forum to promote policies and programmes that advance clean energy technology, share lessons learned and best practices, and encourage the transition to a global clean energy economy – has launched the **Clean Energy Marine Hubs (CEM-Hubs)** initiative. This cross-sectoral and public-private partnership aims to scale the global low-carbon fuels value chain to ensure that transportation infrastructure is in place to link producers and consumers of zero-emission fuels. Canada, Norway, Panama, Uruguay, and the United Arab Emirates, partnered by the International Chamber of Shipping (ICS) and the International Association of Ports & Harbors (IAPH), are the initiative's founding members, with support coming from the International Renewable Energy Agency (IRENA) and the Global Centre for Maritime Decarbonisation. "The energy maritime value chain is far from ready to transport the influx of low-carbon fuels that are expected between now and 2050. To accommodate demand, the shipping industry is expected to transport at least 50% of all traded low-carbon fuels by 2050, according to IRENA. But the production centres, vessels and port infrastructure required to accommodate expected demand do not currently exist at commercial scale," noted IAPH in a press brief. The Association also underlined, "So far, only one ship in the whole global fleet has been piloted to transport liquefied hydrogen – travelling from Australia to Japan. For hydrogen derivatives such as ammonia and other low-carbon fuels moved by ships, the scale is far from what heavy industries, transport, and other sectors would require. To support the global transition to net-zero targets, shipping is expected to transport between two and up to five times the low-carbon fuels it will consume by 2050. The mix of fuels that shipping moves will also need to change to be aligned to the Paris Agreement." Guy Platten, ICS' Secretary-General, commented, "The momentous speed at which the CEM Hub initiative has been adopted [in under one year after its presentation] speaks volumes to not only the scale of the challenge before us and the urgency to act, but also the economic opportunity low-carbon energy production offers – particularly to developing economies. For first movers, it presents a golden opportunity to develop an industry that will catalyse economic growth and prosperity and provide energy stability for their citizens."



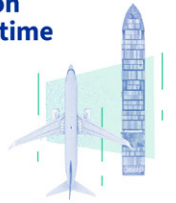
Photo: Canva

The EP agrees on Fit for 55 and FuelEU

The European Parliament (EP) voted in favour of several laws set to enable the EU to reduce its greenhouse gas (GHG) emissions by at least 55% by 2030 (vs 1990 levels). Among them is the inclusion of the maritime sector, responsible for 13.5% of the EU's emissions (2018 European Council data), in the block's Emission Trading System (EU ETS). Shipping companies will have to use their first ETS allowances by 30 September 2025 for emissions reported in 2024 (2025: 40% of emissions reported for 2024 must be covered by emission allowances; 2026: 70% of emissions reported for 2025; and from 2027: 100% of reported emissions). The EU ETS covers CO₂ emissions but will include methane and nitrous oxide from 2026. Shipping will also fall under the FuelEU Regulation, obliging vessels above gross tonnage of 5,000 to reduce the GHG intensity of the energy used on board (-2% in 2025, -6%/2030, -14.5%/2035, -31%/2040, -62%/2045, and -80%/2050). The Regulation will also see ships connecting to an onshore power supply while berthed (unless they use another in-port zero-emission technology). As regards the System in general, the EP also agreed that GHG emissions in the ETS sectors must be cut by 62% by 2030 (vs 2005 levels), while free allowances to companies will be phased out from 2026 until 2034. Additionally, the EP adopted the EU Carbon Border Adjustment Mechanism (CBAM), to be phased in from 2026 to 2034, which aims to incentivise non-EU countries to increase their climate ambition and to ensure that the EU and global climate efforts are not undermined by production being relocated from the EU to countries with less ambitious policies. CBAM will cover iron, steel, cement, aluminium, fertilisers, electricity, and hydrogen (as well as indirect emissions under certain conditions). Importers of these goods would have to pay any difference between the carbon price paid in the country of production and the carbon allowances in the EU ETS.

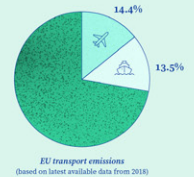
ReFuelEU aviation and FuelEU maritime explained

The European Union's proposed regulations ReFuelEU aviation and FuelEU maritime aim to increase the use of sustainable fuels by aircraft and ships and, consequently, reduce the greenhouse gas (GHG) emissions from these transport sectors.



Why these regulations are needed

Aviation and maritime transport account for 14.4% and 13.5% of EU transport emissions, respectively.

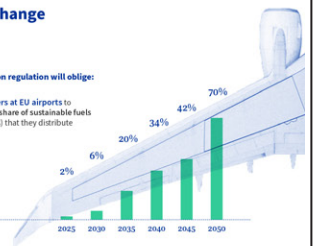


What will change

The ReFuelEU aviation regulation will oblige:

1. aircraft fuel suppliers at EU airports to gradually increase the share of sustainable fuels (notably synthetic fuels) that they distribute

Minimum share of supply of sustainable aviation fuels (in %)



2. airlines departing from EU airports to refuel aircraft only with the fuel necessary for the flight to avoid emissions related to extra weight caused by tankering practices (carrying extra fuel to avoid refuelling at a destination airport where fuel is more expensive)



3. EU airports to guarantee the necessary infrastructure to deliver, store and refuel with sustainable aviation fuels



In addition, a Union labelling system about environmental performance for aircraft operators using sustainable fuels will help consumers make informed choices and will promote greener flights.



The FuelEU maritime regulation will oblige vessels above 5,000 gross tonnes calling at European ports (with exceptions such as fishing ships):



→ to reduce the greenhouse gas intensity of the energy used on board as follows



→ to connect to onshore power supply for their electrical power needs while moored at the quayside, unless they use another zero-emission technology



What the benefits will be



OT PORT GDYNIA'S FIRST PV INSTALLATION

• The Polish stevedore active in the Port of Gdynia has launched a 50kW system for harvesting solar energy. The company plans to add four more installations by this year's end, increasing the system's

capacity to 225kW. The stevedore will use the electricity for its own needs, including powering the electric cargo handling equipment it plans to purchase, such as forklifts, gantries, and reachstackers. •

WIND ENERGY TOWARDS NET ZERO IN TRELLEBORG

• A building permit has been granted for erecting two 120m-tall wind turbines in the Port of Trelleborg, expected to start swirling in 2024. The pair will produce about 15m kWh/year. Together with the port's 2.2k m² solar park, the turbines will deliver more green energy than the seaport consumes. As such, electricity will also be used for the Municipality of Trelleborg's hydrogen investment. "Together with Trelleborgs Energi, we are now working to find

the best design and how to ensure green hydrogen for the upcoming truck traffic powered by hydrogen in the future [H2X and Trelleborg Energi will deliver hydrogen buses and a waste truck for the Swedish municipality]," said Jörgen Nilsson, the Port of Trelleborg's CEO. The wind turbines are one of the activities in the port's EU Green FIT 2025 project, co-financed by the EU. The Port of Trelleborg intends to reach net zero emissions by 2040. •

NORSEPOWER TO INSTALL ITS ROTOR SAIL ON A COAL CARRIER

• The Finnish manufacturer of auxiliary wind-assisted propulsion has been commissioned by the Japanese Iino Lines and J-Power to furnish *Yodohime* with a 24 m tall & 4.0 m in diameter sail. The installation will

take place in Q3 2024. It will be Iino Lines' second Norsepower Rotor Sail, following an installation on board a very large gas carrier. Meanwhile, it'll be J-Power's second wind propulsion auxiliary system for a coal carrier. •

HHLA-FERNRIDE CO-OP IN TALLINN CONTINUES

• After ticking off the first phase of their joint remote/automated trucking project in the container terminal HHLA TK Estonia, the two agreed to proceed. The yard truck that FERNRIDE equipped with sensors and cameras already transported containers between the quayside in the Muuga Harbour and the yard via remote control.

With the start of the second phase, autonomous driving will be integrated into operational processes. For this purpose, an additional automated yard tractor will be deployed at the terminal for container transport. The goal is to achieve a degree of autonomy of at least 80-90%. •

OFFSHORE WIND POWER & PORTS IN OSTROBOTHNIA PROJECT – LAUNCHED

• The Regional Council of Ostrobothnia has selected Ramboll to assess the opportunities & needs associated with developing offshore wind energy via Coastal Ostrobothnia ports. The project will be divided into three parts. The first will be tasked with mapping how Ostrobothnian ports (Kaskinen, Pietarsaari, Vaasa, Kasnäs, and Karhusaari) stack against other harbours in the Gulf of Bothnia and the wider Baltic Sea as regards their preparedness for serving the construction of offshore wind energy farms. The second part will be devoted to the division of labour and cooperation (also with Swedish harbours), as the investment scale of offshore wind energy off Finland's coast is too big for a single port to handle the

entire demand. Lastly, Ramboll will look into what opportunities may follow thanks to erecting offshore wind energy farms, such as hydrogen and e-fuel production. According to the Council, a record number of wind turbines was built in Finland last year, and wind energy generation rose by 41%. The country is currently peppered with nearly 1,400 turbines (mostly on land). Among others, OX2, a developer & seller of renewable energy solutions (including wind), initiated the development (environmental impact assessment & other studies) of the 100-turbine 1,400MW/6.0TWh/year offshore wind farm Tyrsky in the Gulf of Bothnia (about 30 km northwest of Kaskinen) at the beginning of 2023. •

GOTHENBURG BUYS INTO EOLUS' VÄSTVIND OFFSHORE PROJECT

• The authority of the Swedish seaport has earmarked SEK15m (about €1.3m) for purchasing 5% of Västvind and further partially financing the project costs. The 1,000MW offshore wind farm – which will be located in the Kungälv and Öckerö municipalities – will produce 4-4.5TWh/year (or what the City of Gothenburg currently consumes). Eolus plans to submit the permit application, with the accompanying environmental impact assessment, to the country's land & environment court and the government this year. The start of construction is planned for 2027 and completion – two years later. "The Port of Gothenburg is facing a green transformation that will entail a sharp increase in the port's electricity needs already during the period up until 2030. The port's forecasts for future electricity consumption show a multi-fold increase in the need for power. There is already a severe deficit in electricity generation in the region, and demand for electricity is expected to double by 2035," the Gothenburg

Port Authority (GPA) underscored in a press release. Elvir Dzanic, GPA's CEO, added, "The world's major ports will become energy hubs and centers for the manufacture of hydrogen gas and e-fuel for maritime traffic. The Port of Gothenburg's strategy is to lead the green transition of maritime traffic, but this position will not come about without some effort. Access to green electricity will be entirely crucial for the port's development and competitiveness. Investing in electricity production is therefore a strategic decision for us." Per Witalisson, CEO of Eolus, also highlighted, "Västvind could play a key role in western Sweden's ambitions of becoming northern Europe's center for the electric vehicles and battery manufacture of the future, and the world's most climate-smart port logistics. Access to green electricity is a decisive issue in this regard. In practice, offshore wind power is the only source of energy that can contribute such large amounts of new electricity generation in the time frame up until 2035." •

SÖDERTÄLJE GETS CEF MONEY & INVESTS IN SOLAR

• The Swedish municipality and its seaport have received SEK11m (about €940k) in EU support to scrutinise what it would take to improve & green their transport & logistics. The feasibility study will look into the options & costs associated with increasing quay capacity, providing ships with onshore power supply, and building a new electrified railroad. The project will also explore the prerequisites for developing the existing combined traffic terminal. The partners also want to examine the set-up of charging stations for trucks that serve Sweden through Södertälje as well as the establishment of Tvetälänken, an electrified road leading to & from

the port. The funds will also be used to get stakeholders together to see how they can jointly work towards more environmentally friendly logistics, among others, by shifting more cargo from the road onto sea and rail. Södertälje intends to become a climate-neutral municipality by 2030. To that end, it wants its seaport and regional logistics to evolve into one of Europe's most sustainable transport nodes. Meanwhile, the Port of Södertälje is investing to increase its annual solar energy harvesting capacity – from 255,000kWh to 410,000kWh by the end of this year, an amount that will cover 30-35% of the seaport's electricity consumption. •

STENA LINE GOES FOR METHANOL

• The Swedish shipping company has contracted Wärtsilä to convert an undisclosed number of ferries to use methanol as fuel. The conversions – scheduled to take place in 2025 – will include the fuel supply system and engine modifications, as well as integrating the new installations with the ships' existing systems. The full scope of Wärtsilä's supply package will include fuel tank instrumentation

and valves, transfer pumps, low-pressure pump skids, fuel valve trains, methanol fuel pump units and the automation of the system, engine conversions, and automation upgrade for the engine control room. For eight years now, Stena Line has been running its ferry *Stena Germanica* on the route between Gothenburg and Kiel on methanol. •



Photo: Wärtsilä

HHLA TK ESTONIA'S SOLAR PARK – UP & RUNNING (AND TO BECOME LARGER SOON)

• HHLA's subsidiary operating in the Port of Tallinn's Muuga Harbour has two solar parks atop two warehouses, with a total capacity of around 240kWp that generates an average of 720kWh/day. On sunny days, the energy production fully covers the electricity consumption of the warehouses' cooling & ventilation equipment, plus the needs of a nearby workshop and an office. Additionally, surplus green energy is delivered to the port's power grid. HHLA TK Estonia has started preparations to install two additional power parks on the roofs of other warehouses. The 100kWp power park will supply the main office building and container maintenance & repair workshop. Another

400kWp plant will support the Container Yard Electrification project with green energy. The future combined annual electricity production of the completed solar plant will be an estimated 640MWh. "With the completed solar installation, we aim to generate up to more than half of our total electricity consumption ourselves in a sustainable way. Combining the daytime loading operations of our dual power hydrocrane with the solar power, we are operating already CO₂ neutral in peak hours," highlighted Riia Sillave, HHLA TK Estonia's CEO. She further underscored, "With this project, HHLA TK Estonia is contributing to the HHLA Group's goal of being climate neutral by 2040." •

ERIK THUN ADDS BATTERIES TO ITS DRY BULK FLEET

• The Swedish shipping line will invest SEK36m (about €3.1m) to retrofit nine vessels with battery systems. Climate Leap, an initiative of the Swedish Environmental Protection Agency tasked with supporting emission reduction projects, will cover up to 40% of the investment (granted that the retrofitting will be done by 30

June 2024). "This will be beneficial not only for the reduction of emissions but also for reducing noise and for the overall safety; the battery pack will be a backup for all systems on board in case of a blackout which will increase safety and help avoid any potential harm to the environment," Erik Thun added in a press release. •

TWO MORE BLUE BOTS JOIN APMT AARHUS

• ZPMC has delivered two hybrid (Li-ion batteries) diesel automated straddle carriers to APM Terminals Aarhus, which runs a container handling facility in the Danish seaport. The new machinery has joined the prototype Blue Bot that has been operating within a test area since 2022's start, performing over 6,000 lifts and driving 800 km. The Blue Bots are part of ZPMC's automated straddle carrier programme and have been built explicitly for APM Terminals Aarhus based on specifications and learnings from the initial operations in the reefer area and picking & placing containers to and from a test

quay crane lane. "We are proud to be part of the development of these highly advanced GPS-operated automated straddle carriers. We have been testing the first straddle carrier in a small, enclosed area which has provided valuable learnings and insights for the development of the next models. With the new Blue Bots, we are now ready to expand our test area to 65,000 m² in order to further analyse and optimise the technology to fit our operation and enhance safety," highlighted Mikael Gutman, APM Terminals Nordics' Managing Director. •

STENA LINE ORDERS TWO HYBRID (E-)METHANOL RO-ROS

• In the autumn of 2025, the Swedish shipping company's Belfast-Heysham route will welcome two 147m-long freighters, each offering 2,800 lane metres of capacity. These NewMaxes will be able to run on methanol, with Stena Line working on securing the

bunker supply chain, including future volumes of e-methanol, to fulfil its goal of shifting to renewable fuels and cutting 30% of its CO₂ emissions by 2030. The newbuilds will also take advantage of battery propulsion and onshore power supply. •

STOCKHOLM TO INCREASE ITS SOLAR-ELECTRICITY PRODUCTION BY 55%

• The Swedish port authority will invest in six new rooftop photovoltaic systems, increasing its yearly capacity from 995MWh to 1,545MWh by the summer of 2024. The new installations are planned for Stockholm (Frihamnen – one, Värtahamnen – four) and Kapellskär (one). Once commissioned, the

port will dispose of 11 sun energy-harvesting farms. "The company previously set a goal to increase the proportion of solar electricity by 50% by 2026. According to the time plan for the new solar cell installations, this goal will be achieved already in 2024," the port authority underlined in a press release. •

FLAGSHIPONE – UNDER CONSTRUCTION

• Ørsted has begun developing the e-methanol production facility located in the Swedish Örnsköldsvik (sited on the grounds of the biomass-fired combined heat & power plant Hörneborgsverket, operated by Övik Energi). FlagshipONE is set to come online in 2025, delivering 50kt/year of e-methanol for the shipping industry. Siemens Energy, Carbon Clean, and Topsoe also broke the ground: the companies will deliver the electrolyzers and control system, the carbon capture gear, and the methanol synthesis equipment, respectively. The e-methanol from FlagshipONE will be produced using renewable electricity and biogenic CO₂ captured from Hörneborgsverket. In addition, FlagshipONE will use steam, process & cooling water from Hörneborgsverket, and excess heat from the e-methanol production process will be delivered back to Övik Energi and integrated into their district heating supply. The Swedish Environmental Protection Agency has supported FlagshipONE with SEK151m (about €13.1m) through its Climate Leap initiative. "The event in Örnsköldsvik focused on the need to decarbonise global maritime transport and on the large potential for Sweden to become a key market for the production of e-methanol, which is emerging as shipping's preferred route

to zero emissions in the 2020s. Sweden has ample opportunity to develop renewable energy, like onshore and offshore wind, and has a world-leading forest industry to supply the biogenic carbon needed to produce e-methanol. Örnsköldsvik is one of the centres of the Swedish forest industry, having a large commercial presence from advanced forest-based industries," Ørsted highlighted in a press release. According to the company, over 110 e-methanol vessels are on order or already operational, up from 80 at the end of 2022. Claes Fredriksson, CEO and Founder of Liquid Wind (the enterprise that originally developed FlagshipONE), commented, "FlagshipONE will soon become the largest commercial-scale electro-fuel facility in Europe, and at Liquid Wind, we are thrilled that Ørsted is now starting the construction phase of the project. FlagshipONE is our first sold project and is just the beginning of our journey to become the leading developer of electro-fuel facilities. This milestone will hopefully inspire many others to also contribute to the decarbonisation of shipping. Today is a historical day for Sweden as we put the country on the map as a developer and producer of green electro-fuel. All with the intent of reducing the world's dependence on fossil fuels." •

KONGSBERG MARITIME'S TECH CHOSEN FOR TÄRNTANK'S LOW-EMISSION NEWBUILDS

• The company will provide design, engineering, and equipment for three 15k dwt methanol-ready, hybrid & wind-assisted tankers due for delivery in 2025 from China Merchants Jinling Shipyard (Yangzhou). As part of a contract valued at approximately €10.5m, and in addition to the design and engineering services, Kongsberg will supply steering gear, rudders, controllable pitch propellers, tunnel thrusters & thruster control systems, integrated automation systems (incl. Vessel Insight), propulsion control systems, and deck

machinery. The new vessels will reduce carbon emissions using methanol-powered engines (initially running on marine gas oil or biofuel), wind-assisted propulsion, hybrid battery systems, and onshore power. According to the parties, the wind-assist technology is expected to reduce emissions by up to 19%, in addition to the 40% reduction achieved on Tärntank's six previous vessels. The newbuilds are to have an Energy Efficiency Design Index close to 40% below the 2025 Phase 3 requirements. •

FUTURE GREEN FUEL ACCELERATION TEST FACILITY IN AALBORG

• As of August 2023, the Danish seaport's East Port houses a new 3,000 m² plant of the University of Aalborg, with space for potentially adding four more test facilities. "The project will be the backbone of our future development projects that are crucial for realizing large-scale production of, for example, hydrogen and e-methanol. With the Port of Aalborg, we will have the optimal conditions for developing our research and technologies in practice in order to scale up production in the future. At the same time, we also make it possible for commercial players to test the facilities in order for us to realize the enormous potential of CCUS [carbon capture, utilisation & storage], which will be crucial for achieving national and international climate goals in the coming years," explained

Lasse Rosendahl, Head of Department and Professor at AAU Energy at Aalborg University. In 2022, the Port of Aalborg and European Energy signed a letter of intent to establish a power-to-X (P2X) plant with an e-methanol-producing capacity of up to 75kt/year. Also last year, the Port of Aalborg and Aalborg University teamed up with Aalborg Airport, Kosan Gas, Vertimass, Hydrogen Valley and European Energy to start the MeSAF project, which seeks to produce green aviation fuel (and potentially supply a domestic route in Denmark in the future). The relocation announcement comes just after Fidelis New Energy and the Port of Aalborg announced the construction of up to 4.0mt/year CO₂ receiving facility (up & running from 2026). •

Green FIT 2025 - EU project in Port of Trelleborg

In 2022 a new infrastructure project in Port of Trelleborg was granted funding from the EU Fund for a Connected Europe (CEF). The EU project's official name is "Clean and Efficient Multimodal Hub in the Port of Trelleborg" but is called "Green FIT 2025".

Through the project, we can contribute to a better transport corridor and promote and streamline the infrastructure in the new port to be able to meet tomorrow's traffic volumes in the best possible way. The combined focus of the activities also goes hand in hand with Port of Trelleborg's long-term environmental work.

The infrastructure project has received a grant of approximately SEK 128 million. The project extends between January 1, 2021 and December 31, 2024.

Activities in the project:

- **Construction and validation of ferry berths no. 11 and 12 (each 250 meters long)**

The ferry berths were completed in 2022.

- **Installation of two 120 meters high wind turbines in the port to provide electricity to vessels**

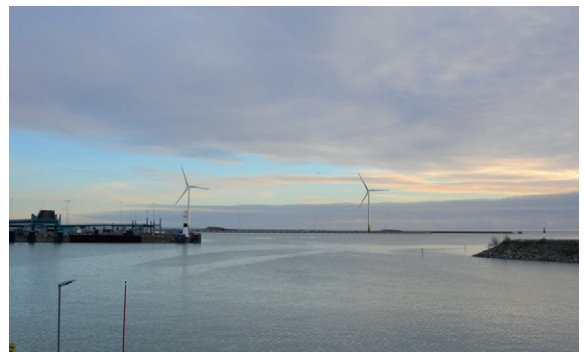
The building permit was granted during spring 2023.

- **Construction of a wastewater reception facility and a treatment plant to support waste management**

During fall 2023, the treatment plant will be put into operation.

- **Improved handling of intermodal trains and rail connections**

Will be built during fall 2024.



**Co-funded by
the European Union**

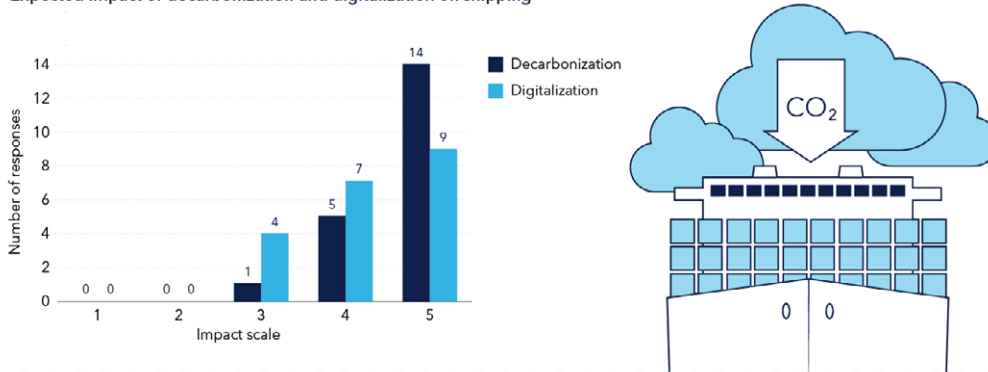


DNV'S SLIDESHOW OF ITS THE FUTURE OF SEAFARERS 2030: A DECADE OF TRANSFORMATION REPORT

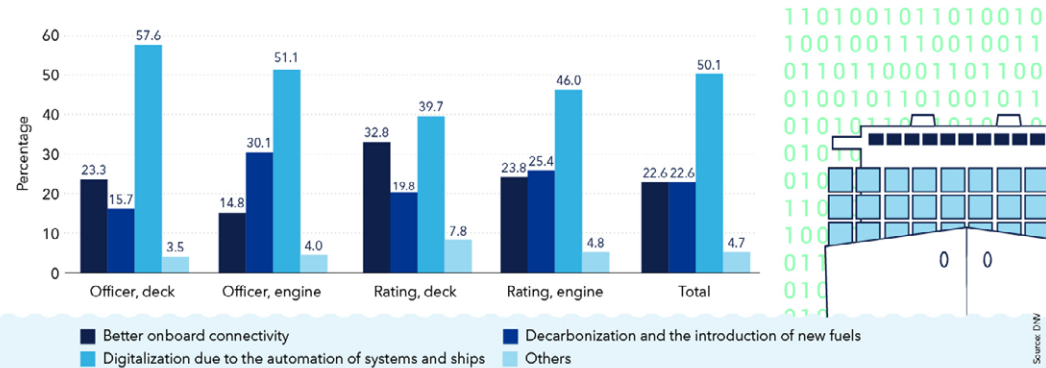
The Future of Seafarers 2030
A Decade of Transformation



Expected impact of decarbonization and digitalization on shipping

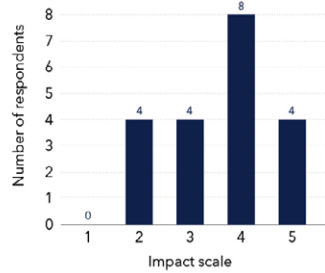


The impact of digitalization
Impact to onboard seafaring career over the next 5-7 years

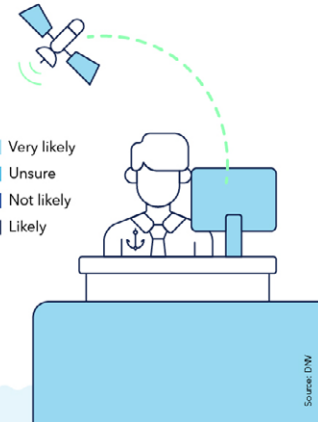
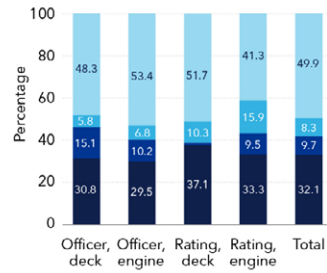


The rise of shore control centres

Prevalence of shore control centers (SCCs) by 2030



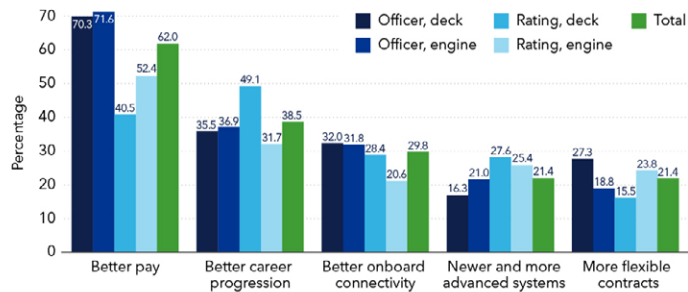
Shore-based version of the onboard role



Source: DNV

Attracting and retaining seafarers

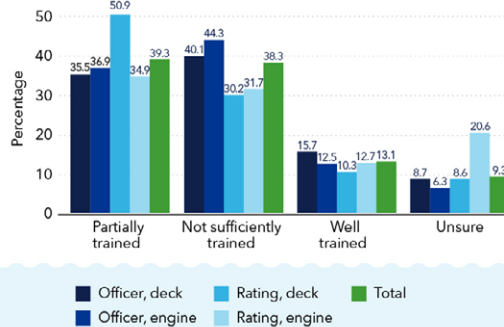
Two areas that would allow the attraction of/the retention of the onboard role of seafarers



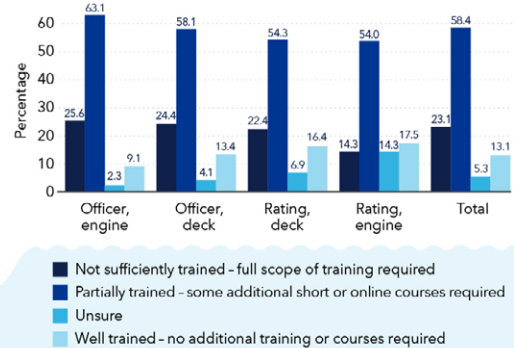
Source: DNV

Skill gaps

Trained in new fuels (such as batteries, LNG and synthetic/biofuels)



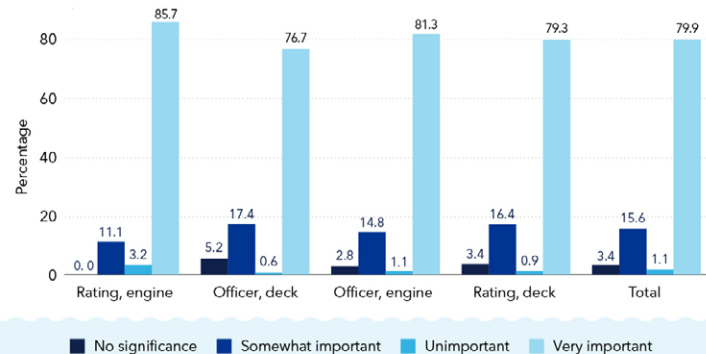
Trained to deal with more advanced technology



Source: DNV

Consequences for seafarer training and development – recommendations

Role of onboard mentoring/training for new technologies and fuels



Source: DNV

Ports in the happiest society

by Przemysław Opłocki

This year's annual BTJ trip took me to the picturesque land of the happiest people in the world (sixth year in a row) – incidentally, also perpetual coffee drinkers and sauna addicts, where awe-inspiring landscapes, pristine air, and untouched wilderness somehow mix perfectly with a bustling activity of its cities and ports. It was Finland, of course, whose ports of Turku, Hanko, and HaminaKotka welcomed me for a visit in May of 2023, painting, along the way, a truly vibrant picture of Finnish maritime heritage, which sustains the country's undeniable economic prowess, often hidden in quaint, historic towns. My gracious hosts fed me excellent Finnish coffee and cuisine while entertaining me with local stories of the past, present, and hopes for the future, sharing concerns and misconceptions about the current state of affairs in the country with the longest Russian border in the European Union.



Photo: Pixabay

Day 1 & 2 – Port of Hanko

The first step of the BTJ Trip (in Finnish, “trip” is “matka”, which in Polish is... “mother”) was to get from Turku airport to Hanko in around three to four hours to check in at the hotel. Mission completed successfully.

I had a chance to spend a lovely evening in Hanko. The city was established in 1874, a year after the Port of Hanko was built. At that time, Hanko was a spa resort

for upper-class Russians, which is still visible in the architecture of preserved buildings from that period, like Hanko Casino and other villas.

The origins of the port date back to 1873, making this year the port’s 150th anniversary. Anna Haimila designed a picture for the Port of Hanko’s celebration, showcasing buildings and settings from the port, with the colour

pallet borrowed from the Port of Hanko logo.

After an evening walk through the rocky coast, I spent the night in... a former prison cell because my hotel had once been a police station. The door was unlocked in the morning so I could visit the Port of Hanko.

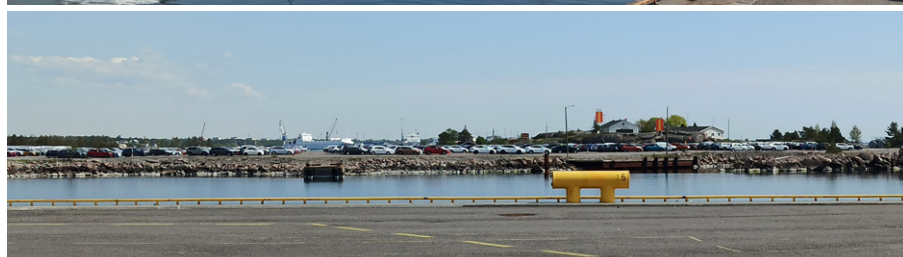
The headquarters are situated in an old, renovated former butter warehouse. I talked with Anders Anvilk, Managing Director, and Nina Häggroth, Marketing Manager, about celebrating the anniversary, an overview of the year 2022, development plans, and other issues, which you can find in the interview (link here).

The Port of Hanko consists of Western Harbour, Outer Harbour, and Koverhar Harbour (since 2015). Today, Hanko is the fourth largest port in Finland and hosts several operating companies on its premises, such as Euroports, Stevena (part of KWH Logistics), and Victor Ek.

Our trip started at Western Harbour, which takes care of the export of forest industry products, car import, and trailer and container traffic, with around 1,300 vessels yearly. There are five berths, with ro-ro&ferry traffic (mostly Transfennica and Finnlines) at berths no. 1, 2 and 5. The deepest is berth no. 1 – at 14 meters in depth. In 2019 the Port completed an investment and repaired a space for trailers.

On the way to the Outer Port, we saw a lot of new cars in and outside the port. The auto industry is also significant for the Port of Hanko. Currently, the port sees around 80,000 cars per year, but in the best year in its history, it was around... 500,000 vehicles. As Nina said, cars were everywhere in the city.

The Outer Harbour is mainly used for car imports and unloading, with approximately 250 vessels visiting it each year.



Day 2 & 3 – Port of Turku

Another sunny day in Finland and another chance to visit one of the top 10 ferry ports in the Baltic Sea Region (BSR) – the Port of Turku. The morning walk to the meeting in the port's headquarters, alongside the Aura River promenade, was an occasion to see an old Liebherr crane (part of Maritime Museum), Turku Castle (more than 700 years old monument), and M/S Bore, a combination of hotel and museum. It was our first but not last meeting, as I ended up spending my last night in Finland there.

At the Port of Turku, I met with Erik Söderholm, Managing Director and Marjo Saviranta, Marketing and Communication Director. After an intense, tasty Finnish coffee (Finland is 2nd European country for coffee consumption – 7.8 kg per head each year) to go with our breakfast, we started a conversation about the port itself.

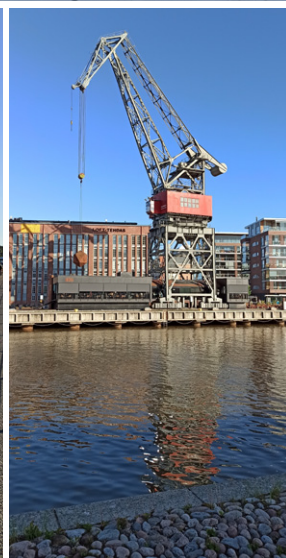
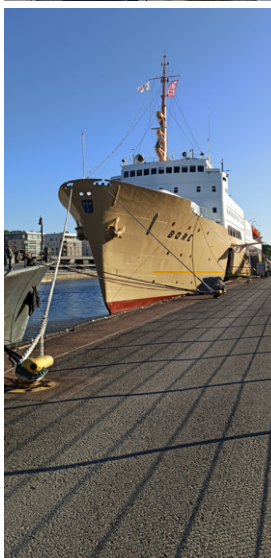
The Port of Turku, generally specialising in ro-ro, ro-pax, and project cargo, is part of the European TEN-T core network system of European cargo transports. Turku aims to be a green port with a goal of carbon neutrality by 2029. In 2022, total traffic was at the level of 2,1 mln tons (1,6 mln tons from ro-ro traffic), with around 2,7 mln passengers and 265,711 vehicles. For more figures and facts, please check my interview with Erik ([link here](#)).

After that, together with Visy Oy representatives, we went to the terrace, where we had a look at the port's area with Passenger Harbour, Linnanaukko, and West Harbour. The port is scheduled to start works on a new terminal, the Ferry Terminal Turku, a joint passenger terminal for both its ferry operators, Tallink Sijja and Viking Line; the terminal should be ready in 2027.

After seeing the port from a distance, next on the agenda was a bus trip into the port. First, we toured the Passenger Harbour, measuring around 150,000 m², with a 1,500 m quay length and up to 10 m berth depth. Currently, they have two operators with regular services: Tallink Sijja, one departure (in the evening) and Viking Line, two departures per day (in the morning and evening).

Operation time for one ship is around one hour. That has to be enough for uploading and loading 2800 passengers, 1500 meters of cargo, and cleaning the whole ship (300-400 cleaning stuff), regardless of weather conditions. The short operation time is because they have to do a Stockholm-Turku-Stockholm route in 24 hours, so they don't have a minute to lose.

An automated mooring system by Cavotec had been installed and successfully tested at one of the berths. In the future, there is a plan to install the system on each berth. Pilots help ships with mooring only in stormy weather, but it is seldom, as the Port of Turku is located in the Turku archipelago.



The Passenger Harbour is equipped with the Visy Gate system at the portal, a bidirectional solution with two cameras set up on the side (one for cargo, one for the trailer itself), which helps the terminal operator know in what condition trailers come in (if there is anything broken, etc.).

Another portal, in the other part of the port, has laser scanners to measure units (weight and type to know where to put, e.g., dangerous cargo) and collect data, digitalise it, and send it to the client (in the Port of Turku – the ferry operator).

The next part of the trip was through Linnanaukko, which serves unitised cargo transports, and the West Harbour, which focuses on cargo handling (serving ro-ro traffic, imports of vehicles, and demanding project shipments). The West Harbour yard is currently home to over a dozen lifeboats, each for 450 people, waiting to be installed in the largest cruise ship in the world, Icon of the Seas (commercial price – 1.4 bln EUR), currently finishing construction in Meyer Turku for Royal Caribbean International.

Day 4 & 5 – Port of HaminaKotka

The last (but not least!) port on the list during our BTJ Trip was the Port of HaminaKotka and Mussalo Harbour – where the port's headquarters are situated. I stayed in Kotka in a guest house near the coast and the Katariina Seaside Park, one of the most beautiful attractions in town. This is rather an industrial port city but full of nature and green fields.

"Kotka" in Finnish means an "eagle," so this dignified bird is a central part of Kotka's coat of arms. In its claws, the eagle holds caduceus and anchor, which shows the importance of the port industry for the city (the same in the city of Hamina – also a port town – its coat of arms is a boat floating on waves).

The Port of HaminaKotka is a universal port for all types of cargo: containers, ro-ro, dry and liquid bulk, and project shipments. It is also an attractive destination for cruise vessels as it's located in a gorgeous archipelago. The port consists of: harbours Halla, Hamina, Hietanen, Kantasatama, Mussalo and Sunila; 1200 ha of land and 1600 ha of sea areas; 70 berths, 9 km of quays with a max depth of 17,5 m; 170 companies, such as Fertilog Group and KWH Logistics.

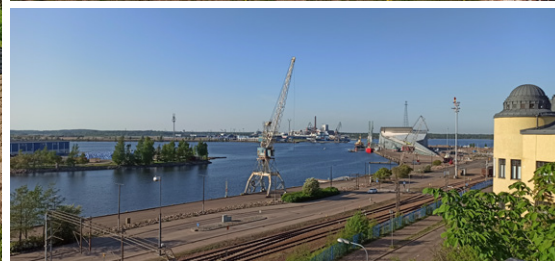
To begin with, I met with Dr, Port Councillor (Satamaneuvos) and CEO Kimmo Naski, and Petra Kuitunen, Marketing Manager. During our conversation, we touched on topics like import/export partnership with Russia, the post-Covid changes in port business, and digitalisation and infrastructure plans for the future. You will find the full interview in the BTJ Trip to Finland section in the current issue of the Baltic Transport Journal magazine.

Our trip began right out of the gate. One of the walls at the headquarters is adorned by a 10-year-anniversary mural presenting a container ship and cranes in the background. Another similar one is in Hamina on the Kuorsalo building.

First on the list to visit was the newest addition to the port facilities, still under development, terminal D – an EU co-funded investment (for dredging, breakwater and new quays). The last quay will be ready at the end of 2023, and part of the terminal will be utilised by the city of Kotka. The area also includes two warehouses built by Steveco, mainly for pulp, the first completed in 2019 (20000 m³) and the second in mid-2022 (a bit larger).

Next, we went to Mussalo Container Terminal, the biggest one in Finland with 1,5 mln TEU annual capacity. The terminal has eight container cranes and 17,5 m-depth berths; its facilities also help accommodate the largest cruise vessels.

Near the container field are dry bulk and liquid terminals for fuel and chemicals; Hamina also handles gas. The Fertilog Group has four terminals in Mussalo, two run by Fertilog Oy (two multifunctional terminals, with a capacity



of 85000 tons, offering mineral fertilisers transshipment), third by Nitrogen Terminal Kotka Oy, and fourth by Fertilizer Terminal Kotka Oy.

Later, we passed by hectares of timber located in the area operated by Oy M. Rauanheimo Ab, part of KWH Logistics Group, one of the biggest port operators in Finland, which provides a full package of port operator services, like stevedoring, forwarding, ship agency services, and more. Company has four bulk warehouses in Mussalo (capacity of 30,000 m³), which have been divided into separate departments, which enables the simultaneous storage of more than 100,000 tonnes of various types of products.

The final point of our visit was a trip to the Kantasatama, the oldest part of the port in Kotka, located close to the city centre. This part of the harbour is mainly for passenger and cruise traffic but also covers the wood-processing industry products. From the quay, we had a view



of the Hietanen Harbour, which specialises in ro-ro cargo and car traffic (100 ha car terminal). In this part of the Port of HaminaKotka, one can also visit the Maritime Center Vellamo, e.g., the Maritime Museum of Finland, the Coast Guard Museum, and see old harbour cranes. ■

Big celebration of a resilient port

by Przemysław Opłocki

In 1873, a small region in southernmost Finland became host to the first and, at the time, only winter port in the frosty Scandinavian country. A year later, that region became officially known as the town of Hanko, which, along with its port, survived wars, famine, and even annexation by Russia. Today, the Port of Hanko, the southernmost of all Finnish ports, offers the shortest and easiest sea route from Finland to Central Europe and other parts of the world and specialises in fast cargo liner traffic, unitised cargo, forest industry products, and auto imports. We talked to Anders Ahlvik, the Managing Director of the Port of Hanko, about the turbulent history of the region, its big anniversaries, and the future.

■ ***Let's start with the anniversary. What events are on the agenda?***

We will have one big party and, later, a smaller one just for our personnel. We also plan an open house the first weekend of September, here in the port area, where the stevedores and port companies can present their business to the citizens of Hanko and whoever wants to come and visit us. It's a family event open to anyone interested.

■ ***So, it's 150 years, starting from 1873. What were the main milestones during this long period?***

The main reason for the port to be built was the possibility of winter traffic in this location as well as the industrialisation that was taking place worldwide. During the late 19th century, it was decided in Finland that there was a need for a port which is open year-round. It was also valuable for the export industry since the production of paper had already started in Finland, and the local market was too small – or actually, the Russian market because Finland was part of Russia during that time. The market there was too small, so it had to

be exported outside the country. And to keep these exports running during the wintertime (all other ports closed due to the rough winter conditions and ice on the Baltic Sea), the Port of Hanko was planned and later completed in 1873, and the exports started.

Another milestone for the port was perhaps the period of the 1860s and 1870s when Finland was hit by severe famine, which meant that a lot of people had to leave their homeland. As a result, around 400,000 Finns emigrated to the US, Australia and other countries far away. Out of that, 250,000 left Finland through the port of Hanko. It's a significant historical event for Finland and how things became known in the world as people had to look for a new future elsewhere.

And then the butter export came at the beginning of the 20th century, around 1900, followed by World War I in 1914 and the civil war in 1918. After that, there was a stable period of growth in the port business, even though during the 1920s, there was a deep depression, which was also quite hard on Finland. Next, in the 1930s, the cargo flow and the port business expanded until World War II started, and that's when we had a big

issue for the port of Hanko. At the end of the Winter War, the Soviet Union demanded to get the peninsula of Hanko for their military forces. Hanko was emptied in 11 days and became a Soviet military base and stayed as such until the 4th of December 1941. But the war continued, and when Hanko was free again, Finns returned to find devastation – Hanko was one of the most bombarded cities in Finland during WWII. The business itself started after the war in 1945.

In the 1950s, Hanko became a very important car port. Today, because the outer port and freeport areas were built in the 1950s-1960s, we have 80% of the market share of new cars coming to Finland. Another important moment came in 1974; until that year, the port of Hanko was the only port in Finland that was owned by the Finnish government. It was then sold to the city of Hanko, and since 1974, it's been city-owned.

When we came into the 1980s, winter traffic lost its importance in Hanko due to the use of icebreakers and new conditions on the Baltic Sea. So, Hanko had to find new ways of making a living off the port, so the liner traffic started in the 1990s. And even though we had had passenger traffic during the first 100 years of our existence, at the



Photos: Port of Hanko

beginning of 2000, the Superfast ferryline traffic started in Finland – with the Hanko – Rostock connection. That was perhaps the start of the very fast liner traffic also with passengers. Since then, Hanko has become one of the most important or the second biggest important RoRo ports in Finland, serving the Polish, German, and Western European markets as well as traffic to the North Sea, to and from the UK, Sweden,

and many other places. And today, we are the third or fourth biggest commercial port in Finland, handling about six million tons.

■ **Let's discuss more of the recent past – around 2022, looking into the future. In terms of turnover, was 2022 a very good year for the Port of Hanko compared to, for example, the last two years?**

the year, we had a strike for more than two weeks which also influenced volumes. So, I'm not expecting 2023 to be a record year, but it will not be a bad year, either.

■ **Some maritime stakeholders have told me that there's a decrease in the stats this year. Does this mean that the situation is bad, or maybe last years were so good after Covid-19 that these results are really very difficult to match?**



PORT OF HANKO **150** years
1873–2023

Let's just say that during the last seven years, we have made history in the respect that we have grown each year, from three million tons in 2014 to six million tons in 2019, and the growth was very, very rapid, making 2019 the best year ever. Last year was the third-best ever in the history of the port, so we have had a stable situation. Due to Covid in 2021, we had a drop in cargo flows, but in 2022, it started to go up again. Today, if you look at the beginning of this year, due to the war and the situation with the Finnish, European, and world economies, we see a small drop in volumes. And, of course, at the beginning of

That's true. In some ways, 2022 was a really good year, and it was the first year without Covid, so to speak. Due to the war and the current situation in Europe, with the energy crisis and rising costs, we see a lack in demand for consumer goods; consumer goods are very important for the Port of Hanko. And the trailer traffic shows negative growth in the figures right now. But we are looking to autumn, and we believe that autumn of 2023 will be better than springtime. It's worse than last year but not a bad year.

■ **And when we look at the development plans and into the future, can you tell us something more about this?**

Hanko has three ports: we have the Western port where we are right now, which is the port with trailers, containers, car imports, paper products – forest industry. And then we have the Outer port that is the main car port in Finland, handling mainly car imports. Then we have the newer port, Koverhar, where we have 650 hectares of unexplored land areas and 150 acres of water areas. Today, the port facilities are



quite small, but we have made huge plans for that area to grow. So, there are unlimited possibilities to grow in the future.

■ **What about this UnitSpotter program that's on your website about empty runs? How does it work in the Port of Hanko?**

I think it works, but it could be used more. The idea is, of course, to connect empty trucks with trailers that have no truck to pick them up. With the proper use of UnitSpotter, there will be considerably fewer empty runs in the future. It has been up and running now for two to three years, and the market has accepted it, but it's a system that really shows its possibilities only when there is a misbalance in traffic. It means that if you have a car going both directions, you don't need it; only if there is a misbalance in traffic does the market start to see it. There certainly could be more users, and the users should be able to share information more often. I think that's a big issue for the Finnish trucking companies that they fear they will lose the cargo if they give it away for one day to get one drive done. They are all afraid of giving out information that they feel we want to keep for ourselves, and this is perhaps something that the market needs to learn to do better in the future – that will open the gates for this.

We have been a little early with UnitSpotter as we launched it two years ago. More and more companies and people are learning to understand that we need to share information to be able to create cost-effective operations in the future. And maybe when

the lack of drivers gets even worse, it will become a lift for UnitSpotter.

■ **Digitalisation is an issue for sure. It should be helping the industry and workers, yet there is a lot of fear that, e.g., cargo or jobs will be lost. What other programs and projects regarding digitalisation are in the Port of Hanko?**

We have a lot going on. We have digitalised the whole port as we have put everything that we own- underground, over-ground, or in the water – on a digital platform. So, the maintenance and development of the

area are very easy since everything can be found on a digital platform – you don't need to check old papers or check out drawings. To find out where things are, you can just click on it and have a look. Everything we have out there has GPS coordinates, so in that respect, I think maintenance and development of the areas will be and already are very cost-effective and easily workable.

■ **Would you like to add something about your anniversary celebrations?**

We are celebrating the whole of 2023, and we have already started at the beginning





of the year. In May we had a major party for all our customers and partners at the famous restaurant Hanko Casino. That was perhaps the main event for this year. We had invited hundreds of people, and we expected it to be a nice party. Then, as we've said above, we will be celebrating only with our own personnel. And we were celebrating open days for all citizens in Hanko in autumn, and that information is on our social media and around the city of Hanko. One interesting thing is that the port is celebrating 150 years this year, but the city of Hanko is a year younger, so they will be celebrating next year. So, first was the port, then came the city!

Also significant, there is a book about the Port of Hanko from its beginnings to 2001 written by Ms Marketta Wall; she is now writing the second part, covering the years 2002 to 2013 right as the history of the city running the port ends – the Port of Hanko became a limited company from 2014. The book should be completed in the fall. ■



The Turku port expands to enhance operations

by Przemysław Opłocki

Nestled in the southwestern corner of Finland, the Port of Turku offers one of the most efficient Baltic Sea routes and serves as one of the leading shipment ports in all of Scandinavia. Catering to both passengers and cargo, the Turku port is looking to expand and increase its profitability. We're talking with Erik Söderholm, Managing Director at the Port of Turku, about their new ferry terminal investment, some positive post-pandemic leftovers, and the cautiously optimistic predictions of the future.

■ **First of all, let's talk about the 2022 turnover. Compared to 2020-2021, was it a good year?**

It was a very good year. Our annual reporting shows a growth of 10%, mostly because the passengers returned. In 2019, before Covid-19, we had 3.1 million passengers, mainly between Finland and Sweden. In 2020, that number collapsed to 1 million because of the pandemic, so that's a decrease of 2 million in one year, which was, of course, bad for us. But the good thing was that the ships stayed here and kept going to Stockholm, both companies – Tallink Silja and Viking Line. The state of Finland was giving support to these ships to keep the emergency supply chain working: eg. the food and medicine coming. Then in 2021, we had 1.4 million passengers, so it went up a bit from 2020 because these were better times already. And then in 2022, by the 1st of March, came a new ship, Viking Glory, and the doors opened; we had 2.7 million passengers, which was more or less what we had had before.

The situation has changed because Russian customers are not travelling by these ships anymore. Also, Asian customers are staying away because they used to fly on Finnair from China, Japan, and so on, over Siberia to Finland, then to Stockholm, etc. They can't do that now because of the no-fly zone. So, if

you look at the European passengers, they're back in similar numbers as before Covid. But we are aware that neither Russians nor Asians will return tomorrow as long as the war goes on. Moreover, in September of last year, Tallink rented out one of its ships, Galaxy, to the Netherlands, as temporary accommodation for refugees, so we only have three ships left operating daily departures – Tallink with one and Viking Line with two. So far, we are over last year's figures, but my question is, what happens in the summer because that's when these ships are full, and we have one boat less? So that's our biggest dilemma for the time being, instead of having four ships, we have three. In terms of freight capacity, we lost 700km of cargo space annually because of Galaxy going to Holland. So that capacity is gone, and these three ships cannot make up for it. So, this is the situation. What will happen in the future? That's a good question, but I am happy with 2022.

■ **What can you tell me about investments in the port, now and in the near future?**

We are facing a big question with the new Ferry Terminal Turku investment. We were calculating this investment with four ships, not three. That's one of the reasons why we are looking for new shipping companies; we

have been in discussions with several. The biggest challenge is to find a suitable ship. That's not easy because it has to be an ice classed vessel – it is coming to Finland after all – big enough, I would guess, at least 200 trailers, and preferably ro-pax because I know there's interest in both Poland and Finland for travelling by car. And according to our recent survey conducted by the University of Turku, there is a big market potential between Poland and Finland, both freight and passenger. Of course, we would also like to have more companies operating between Finland and Sweden and more traffic in countries such as Germany. For that, we need to find a suitable ship or shipping company.

But anyway, we are currently going through with the investment of €172 million, which is seven times more than our turnover. The actual building is only 25%, but the quays, modern security solutions that measures up to the security requirements and needs of today, new gates, digitalisation, all that has to be done as well, and it's not cheap. We are going forward because the city wants to have the area where the Viking Line and Tallink Silja terminal buildings are now. They plan to turn it into something like a Port City – offices, hotels, museums, etc. One could say we are somewhat forced by the city to make the investment – of course, the city owns the company. The only question is; what will the



Photos: Port of Turku

traffic look like in the coming years. Which ships and which companies will be operating this route? A lot is happening now also in the shipping industry within the Baltic Sea area with ships changing routes and owners, strict environmental requirements that demand

big investments from the shipping companies, new routes are being launched and looked into and Finnlines will introduce two new vessels on the Naantali-Kapellskär route in the autumn, which will take 5.2km of freight and 1,000 customers each. So, the

competition is getting harder. The market is not getting smaller; the Swedish/Finnish market is growing slowly but clearly. But we cannot live only on Sweden, and that's why we are really trying to find someone to take the service between Turku and Gdynia as well.





■ **You mentioned a scheduling issue with the construction of the new terminal. How does it look now? Are you back on schedule?**

Yes, we are. The first quay will be ready in the beginning of 2025, the second one should be ready sometime in 2026, and the terminal building itself, if all goes well, it could be ready as soon as autumn 2025. So, if that happens, we'll have the first shipping company move into the new terminal in 2025, and when the second quayside is ready, the second company will move in mid-2026. That's how it looks now, but of course, we don't know about a new Covid spread or the situation in the east and such things.

■ **The general overview in the sector is that compared to 2022, there will be a decrease in the results for 2023. Of course, it's understandable that if last year's results were dramatically better than previous years, the following results could be lower. How do you judge the situation after the first quarter of 2023 compared to past years?**

The first quarter has been slightly better than expected because we do have this capacity issue with Galaxy being gone. If you look at the situation with that in mind, then I'm happy. I'm not worried about the summer – that's booming, so I'll be calm until autumn. My question is, what happens with the freight and the passengers in the last quarter of this year? Will the economy be the same as today, or will it be much worse, and will people have to save money? Will the freight volumes go down? The first quarter, we already know, was good; I believe that the second and third quarters will be quite okay for us. But after that? The funny thing is that we are starting to build now – the first quay, sometime in September, and the terminal around March-April next year. The price of building material is increasing... But I'm an old man, I've been at this for a long time, there are always challenges. But I can say for certain that after the first quarter of 2023, we're okay.

■ **Let's talk about Covid-19. On May 5th, 2023, the World Health Organisation announced an official end to the pandemic. How has the situation with**

Covid changed the port? Are there any positive outcomes following the pandemic period?

Yes, for example, meetings online, through Teams in our case, were a big change. Before Covid, everyone was mostly in the office every day, and that's no longer the case. We have also learned that we don't have to travel that much. For meetings, we still travel some, but not nearly as much as we used to. We do much more work from home, and we have meetings through Teams, where the technology is also improving, and we can see many people on one screen, which makes the meetings very productive. Personally, I'm over 60, so I like to meet people face-to-face, to be honest, especially if it's an important matter. That's because it's not only about what you say, it's how you react, and I like to see how people really feel about things. So, if it's something important, I want people to be at the table, but a lot of things – like reporting figures – can be done online, and that's an improvement

■ **What about investment in and development of digitalisation and other IT**



projects in the Port of Turku, any plans for the future?

Well, related to our new ferry terminal, the main point is to try to automate vehicle- and passenger boarding, making the process faster and more efficient. At the moment, the operators are handling their own boarding processes. And in the future, we will be operating the field and the terminal building -that's quite a shift of responsibilities. Since those areas will be shared by operators, they can no longer control it themselves. We want to automatize the processes as much as possible so that we have minimal personnel involvement, and the field is as dynamic as possible to save space and time.

■ **Referring to digitalisation, one of the main topics is data – sharing it and shifting it. Have you got some kind of port community system in the Port of Turku which helps the operators and port companies share knowledge and data?**

At this time, no. In the future, we are going to implement a smart port system here. Certainly, we have had requests from, for

example, truck operators to provide more precise information about their waiting times or electric charging availability, etc., at the port. Yet, we still have people coming in without tickets, and without having done the online check-in, and for the time being, the operators have to do it manually. Full

automation is, unfortunately, still not possible. Maybe that will change in the future; we will, of course, take that into account. But at least at the beginning, the shift is so major already that it's better to start with 90% automation – 10% manual rather than trying to go 100% right away. ■



The new normal

by Przemysław Opłocki

It is fair to say that global ports have been affected tremendously by the Russian war, with some major routes closing altogether, the resulting port congestion, and countless supply disruptions. Now, a year and a half in and with no quick resolution to the eastern conflict in sight, the Baltic ports have been looking for their new normal. We are talking to Dr., Port Councillor Kimmo Naski, CEO of one of the most important ports on the Baltic and the biggest universal port in Finland, the Port of HaminaKotka. The conversation covers issues ranging from the port's severed import/export partnership with Russia (given the proximity of just 35 km from the Russian border), the post-Covid changes in port business, and digitalisation and infrastructure plans for the future.

■ ***Let's talk about the figures for 2022. How does it look in the port of HaminaKotka. Was it a prosperous year?***

It was the second-best year for our port. But inside total volumes, there were many changes due to the war, related sanctions, and so on. But, on the other hand, we started to get new traffic flows. Finland used to import a lot from Russia, with products coming via a train or a truck over the border. Under the circumstances, Finland had to change and started buying from elsewhere around the world, and now goods come by ship and to our port. So, the total volume started to increase. Now, the first part of last year was tough for us because the Finnish forestry company, UPM, had a long strike which took four and a half months, reducing our traffic. So, 2022 would have been much better without the strike. But on the whole, it was a good year. Of course, we have to be careful; it's a very uncertain time with the sanctions and the war. We have to follow everything and continually analyse what it means to our business.

■ ***And how does the first quarter of 2023 look? When we speak with other ports, shipping operators, and freight forwarders, there are some rumours that the numbers are decreasing a bit, perhaps not as badly as during the 2008 financial crisis but decreasing nonetheless. Is it a cost of these really good results in 2022, or is it a symptom of another crisis on the horizon?***

This is going to be different depending on one's point of view. The month of January was excellent, but in February, we had a stevedoring worker strike for two weeks, and almost everything stopped, so it was a catastrophe for business. In March, we had a one-week strike from the locomotive drivers, yet despite that, the numbers were quite ok, although it would have been better without the strike. That was the first quarter. Now, of course, we have the figures for May, and it was excellent. Counting it all together with May, we were 12.0% on a plus, and that is compared to the good year of 2022. So, in these circumstances, we are doing quite a bit better now.

■ ***Before the interview, we talked about Covid-19 and how on May 5, the World Health Organisation announced the official end to the pandemic. Certainly, Covid changed the industry, but how does it look in the port of HaminaKotka? Do you find some positive effects of this pandemic period?***

I'm sure the same positive things as everybody else. Definitely, we have had an increase in digitalisation and the way of working has changed: meetings have gone online, and remote work has become the norm. That happened in our company as well as in those 170 companies inside our port; many of them still work from home. In our company, we have been here live since last August. And in special cases, of course, we do some remote work as well. Another positive change was reduced travel – the need for travel. If you take me as an example, I used to travel to Helsinki once or twice a week, and I've been working here for 21 years now. That, in fact, went down to maybe once or twice a month now. Less travel left more time for other work. These changes are perhaps the most visible.



Photo: Port of HaminaKotka



Photo: Port of HaminaKotka/Ilmakuva Vallas



Photo: Port of HaminaKotka/Vesa Hovi

But then, of course, there is the other side. Our port didn't actually suffer so much during the pandemic. We, as Port of HaminaKotka, own these buildings here as well as our office buildings. But when businesses started to work remotely, it was a difficult thing for companies which had tried to rent offices. So that was one thing. Also, we invested quite a lot in protection to avoid contact. We didn't have many meetings around this table; they are now back a little more but still not as many as we used to have. And, of course, we didn't see our customers and foreign partners from around the world – only online. And that can be a difficult thing. You're able to take care of a lot in online meetings, but then, if you should have to develop or expand a port, it is not the same if you don't see the premises.

■ ***For sure, Covid has changed the way business looks, but it is said that people have the need to meet with each other in person. Perhaps not as frequently as it was in the past, but there is a need.***

Yes. And I also think it's a generational question. If you look at older generations like mine, I have always thought that meeting people is the most important thing to get connected. Now, the younger generations don't seem to view it as equally important.

■ ***They live in a different world and have different ways of communicating. So, let's talk about the human factor. I'm curious how does this younger generation look at the possibility of working in the port industry? Is it easy to attract younger people to work for the port of HaminaKotka? How does it look from your perspective?***

This business is truly not the most interesting one for young people. But we have had a high unemployment rate, not in the whole country, but here in this area, and that is why it might get easier to get young people to come and work for us. If you take the whole country and places where the unemployment rate is low, it is not easy to find good people to work. But in the big picture, we haven't had many difficulties. And in this area, I dare say, our company has a quite good reputation as an employer. I think how we do things is quite acceptable for young and older people.

■ ***Let's talk about how the sanctions and the closing of relations with the***



Photo: Port of HaminaKotka/Jarno Koivula

Russian coast have affected the cruise industry in the region. Up to 20,000 cruise passengers are expected to travel via the Port of HaminaKotka this year, which is more than double what it was a year before. How important is the cruise industry for your port? Is it something that you are looking to improve in your strategy for the future?

We started with the cruise business around six to seven years ago – very, very slowly, and we actually had 35 vessels booked for this summer. But there have been many cancellations; we even talked about it in the BPO meeting yesterday, and it seems to be the same way in other places, almost in every place. Copenhagen is much better, but it is also further away. And we do have the advantage that the St Petersburg port is not active in this direction. But on the other hand, about 60% of our cruise passengers come from America, and looking at the map there, they think "they are very close to the war zone there." Which, from our perspective, we are not. But they have a different point of view. I think this is the main reason they started to cancel. So, this cruise season will be about the same as last year. We are engaged in quite a bit of marketing of our area, also common marketing with Helsinki, Tallinn, and Stockholm ports. Additionally, we discussed with the

Baltic Ports Organisation Board what we could do to help the market in the Baltic Sea region. Of course, business-wise, unfortunately, the cruise industry is not important in HaminaKotka port at all because our numbers are so small, comparatively speaking. But image-wise, it is very important. We want to have our cruise vessels here. And of course, if we had more, perhaps close to 100 vessels or so, then it could also be important money-wise. But not yet. It is also important to our southern owner towns near the port – they strongly support our cruise business.

■ ***Indeed, it's an issue of prestige for the city that the cruise industry is here.***

When we started, we had some difficult discussions because we thought that cruise passengers wanted to see big cities, museums, attractions. But after surveying our customers, we understood that it is not at all the case, many of them make the voyage 20 or 30 times or even more, they are repeated travellers – they have already seen everything. And what they come for is nature, and that happens to be something that we have here. We have also been measuring how people evaluate our services, and we get very high notes, so I think we are on the right track. We can't compete with the capital cities, but on the other hand, we have clean nature here and a lot to offer. We also need to remember our target from the beginning has not

been to become the biggest cruise port in Finland. Of course, we wanted to have quite a nice number of cruise vessels, and that is still our target. But it is not our main business. However, it is important to our image, so we will continue to make it work for us.

■ ***Now investments in digitalisation projects in the Port of HaminaKotka, you mentioned that it has changed the way people work, how teams work. How does your port look in terms of digitalisation? Do you have some ongoing or expected projects?***

Digitalisation has been and will remain a very important issue for us, and we have invested maybe not very much money but quite a bit of work in digitalisation and development. And, I think, in comparison, we're doing quite well. But there is surely a lot more to come, for example, optimisation and robotisation, etc. But as a company, also internationally, we are in quite a good position. In recent years, we have been part of some digitalisation pilot programs, and that is why we are a little ahead compared to others. But you can't stop; if you stop and wait one year or two years, then you will fall behind again. We need to continue all the time.

■ ***How does the infrastructure investment plan look in the Port of HaminaKotka?***

be a part of the solution, especially with its raw materials resources.

■ **How popular are electric cars in Finland?**

They are becoming more and more popular. But the charging infrastructure has not gone far enough; this is a big country with long distances, and setting up in the countryside will take time. And you must remember that we have very cold winters, which are more demanding on electric cars. But still, it's coming, and it's coming pretty fast, and nowadays, most people don't buy a car unless it's at least a hybrid. And I think this will continue. And we need that same infrastructure in our port as well, as we have thousands and thousands trucks operating in the port.

■ **Lastly, we are preparing the Baltic energy map. So, we want to present how the port industry looks at this moment and, of course, the projects for the future. How does the port of HaminaKotka look in terms of energy at the moment? Do you have plans like windmills or OPS and so on?**

This is a little different in our region. Wind energy will not develop here, even though we would very much like it. But as you remember, in 2014, Russia took Crimea, and our military started to have totally different positions in this area, and radars don't work properly with windmills around. To build windmills in this region, you need a permit or support from the Finnish military, and that will not come as long as the situation with Russia doesn't change. And that became even more clear when Russia attacked Ukraine last year. So, we are out of the wind energy market, although our port might be a part of it by just having parts coming in and going out to other regions. But we will not have expanded wind energy here.

Now, I don't know if you are aware, but Finland, which is a northern country and under terrible winter conditions, is actually quite good for solar energy. And, of course, now Finland has just launched a new nuclear plant, and that is important for the whole country and our area. Moreover, new fuels are interesting to us; we support electric vehicles in our port -we're now planning a recharge station for electric trucks, and we have our RoRo hybrid vessels from Finnlines. We support everything that has to do with clean energy; it all goes together to have power and clean energy, which brings energy and the environment together. ■

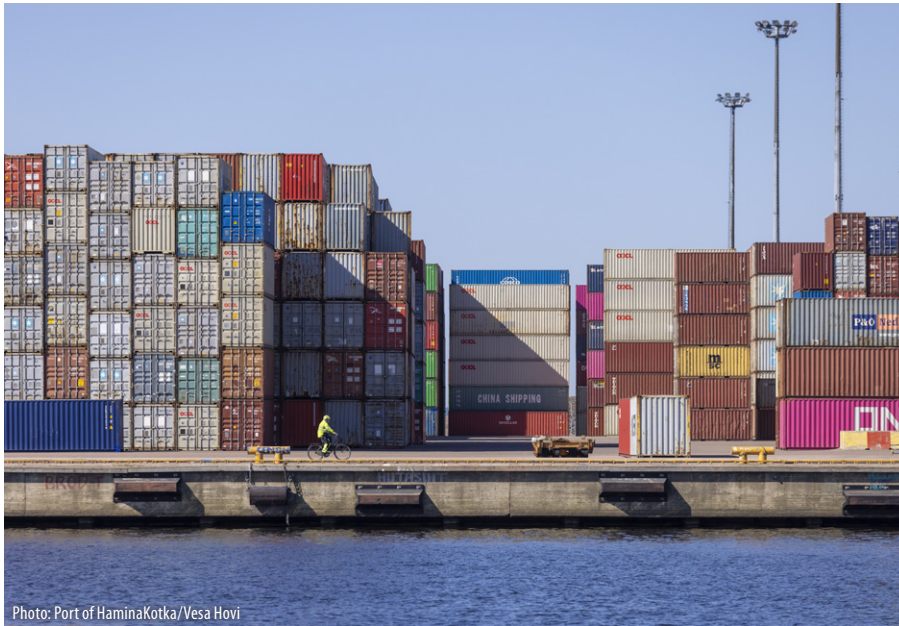


Photo: Port of HaminaKotka/Vesa Hovi



Photo: Port of HaminaKotka/Jarno Koivula

Our main investments are scheduled to be finished towards the end of the year. And now, with everything happening around us and with this inflation, construction works have become more expensive, so we don't have the need to invest at the moment. Our procurement investments were made before Covid. And now, we are going to finish the rest of it. Of course, we have smaller investments all the time because we have to improve the port and keep up with maintenance. But no big investments for now. We are going to come out from the investment wave before it gets too expensive.

There is always something new happening; there's always a new need for something, such as digitalisation. And even if we take our cooperation with the EU, we have this Fit for 55 and so many other things coming towards us that need investments.

We are now starting to prepare for all that, so the time to invest will not be for another couple of years. We need to know the final decisions from the European Union about standards and regulations to know what we should invest in.

Now, we do have two or three big projects for the battery industry, and they each are in a different phase. One plant directly in our Hamina Harbour is the closest to having the final decision for investment. The second one, between Kotka and Hamina, is also in an advanced stage, and the third one, a huge one, is now under the tender process. The first two are close to final investments and decisions, with the first one possibly happening already this year. And that would make this area, in a sense, green because everyone wants to have electric power, but the cost is the biggest issue. The need for batteries is constantly increasing, and now Finland can

The quay to success

by Przemysław Myszk

The 2023 season of BTJ Trips set out to a wonderful start in the second half of April. Upon the invitation from the Port of Norrköping, I had the opportunity to personally witness how the Swedish port is developing to firmly shake hands with the future. First and foremost, the visit was about Norrköping's prime investment, the addition of a new 220 m long and 14.2 m deep quay to the port's container facility in the Pampus Terminal, plus a further 40k m² of yard to accommodate the expected increase in containerised freight traffic. That said, there is plenty more in store across what continues to be one of Sweden's top logistics nodes.



Photos: Przemysław Myszk

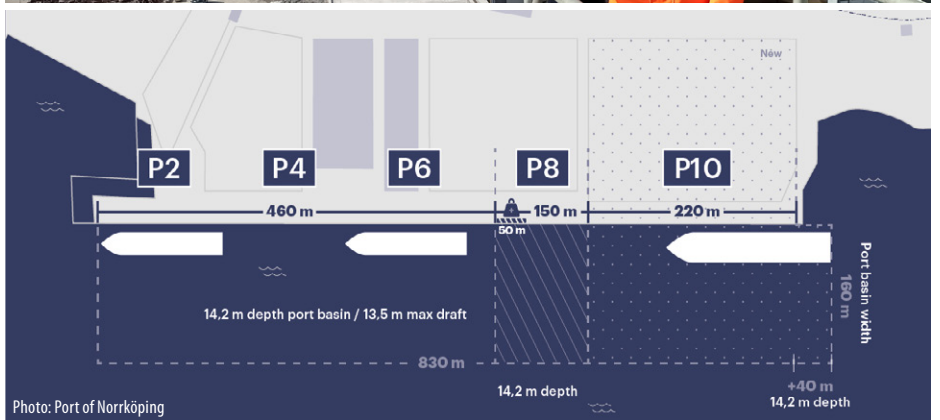


Photo: Port of Norrköping

After planning and obtaining the necessary permits (with the August 2018 green light from the land and environment court), the building of the new quay began in 2019 with clearing works (some 40kt of soil) to make room for construction and its logistics. Dredging (1.0m m³) by the Finnish Wasa Dredging followed suit in November of that year, and its chief portion was already done by April 2020. The contractor, Peab, began their work by excavating some 150k m³ of soil as well as blasting 180k m³ of rocks, after which erecting the quay got underway – in the direction of the existing container handling facility towards the Kardon Bridge.

Interestingly, the materials needed for 'making Sweden a bit larger' with the new quay were found in the nearest vicinity. A small hill was swept away. However, the area wasn't

left as a hole in the ground: the port authority decided to organise it into an open-air paved surface logistics yard (70-80k m²) for future use (during the visit, lighting masts were put together there, and bulk bags with industrial salt were deposited) and also a possible future upgrade with rail access. This way, Norrköping fed many birds with one scone: it used close-at-hand resources, thus avoiding heavy-duty truck traffic that would otherwise be necessary to carry the quay's 'filling' and added new logistics capacity. Additionally, refuse was collected across the construction area: metal for recycling and wood for co-generation.

Peab representatives at the site said the project is going according to the plan, even though they encountered a few challenges. As the works began in 2019, they had to weather down the coronavirus pandemic, which, all told, mostly impacted overseas deliveries

(e.g., equipment like fenders from Asia), not necessarily on-the-spot operations. The Russian aggression against Ukraine and inflation have brought a more noticeable overcast, primarily regarding energy and material costs. That said, these didn't blow up the budget or the timetable. The company's engineers had one additional hard nut to crack: dealing with the somewhat unstable seabed. Securing the new quay's stability was dealt with by drilling the pillars deeper and reinforcing the infrastructure with beams, plates and rebars (a standard procedure, though it required little extra hustle).

A 'breach' could also be seen between the existing quay and the future one. This 45-60 m intersection will be rebuilt (and dredged from 10.3 m) with a higher ground load-bearing capacity of 10t/m², so it could be utilised for handling heavy goods, with project cargo being the one that pops up into mind in the



Photo: Przemysław Myska



Photos: Port of Norrköping



first instance (with Siemens Energy and Hitachi Energy as important customers). Also, this mid-berth will be crucial for transferring the two ship-to-shore gantries (with a specialist team from Liebherr's Container Cranes division coming from Ireland to help with the relocation).

The new quay will also get additional equipment: a twin-lift crane capable of serving 17-row-wide container carriers (the current are 13-row). Overall, the lengthened quay has been designed to efficiently serve feeder vessels. The new quay will also be ready to add an installation for providing ships with an onshore power supply.

The new infrastructure began serving vessels this summer, with Unifeeder's *Judith* making the inaugural call. **The port authority has prepared an impressive time-lapse film that documents the 2020-2023 construction works.** Meanwhile, Norrköping was added to MSC's Baltic Loop 11 (which whose vessel can also be seen in the movie berthing at the new quay). The Swedish port is now part of the sea container service that connects the region's Tallinn, Lübeck, and Åhus with Antwerp.

Sweden and the world – connected

While full of boxes – with over 100k over-the-quay TEUs in 2022, making Norrköping Sweden's fourth biggest container port – the Pampus Terminal is bustling with other cargo handling activities. The present almost 400k m² area offers 38k m² of roofed storage capacity, plus the new 40k m² container yard. The warehouses I saw during the visit were packed full of forest & paper products. The Swedish industries producing these goods are busy with overseas deliveries, chiefly to the US (as a case in point, one of Saga Welco's vessels was berthed there, taking in cargo – some 25-30k m³/month this year).

Just outside Norrköping lies Holmen's Braviken paper- and sawmill, the latter being Scandinavia's largest. Among others, the company recently added to it a new impregnation plant, fully automated and expected to deliver about 60k m³/year of wood products. Next, Holmen will invest SEK450m (about €40m) in rebuilding a paper machine at Braviken Paper Mill by autumn of next year. The rebuilding will broaden the product range for book paper while enabling Holmen to

efficiently increase the production of fluting for use in the centre layer of corrugated boxes (read: more cargo for the port).

In Skärblacka, also a stone's throw from Norrköping and its port, Billerud, a global packaging heavyweight, produces white machine glazed kraft paper, brown sack paper, and fluting (overall, some 460kt/year of output). The facility also houses two laboratories with expertise in developing packaging for food and medical products – two commodities that require excellent warehousing and handling capacities in terms of cleanliness, something that the Port of Norrköping is more than obliged to provide as I saw inside one of the roofed storages, with stevedores running forklifts that carry paper rolls of all sizes (some of them needing additional protection wrapping, a value-added service available on the spot).

Fiskeby, founded in 1637 as one of Europe's first paper manufacturers and nowadays one of the leading packaging board producers, is also seated in Norrköping. Today, the company prides itself on being the only one in Scandinavia to manufacture packaging boards (180kt/year) made of 100% recovered fibre (which consumes



Photo: Przemysław Myszk



Photo: Przemysław Myszk



Photo: Holmen



Photo: Holmen



Photo: PostNord TPL

40% less energy than virgin fibre). Fiskeby is also actively greening its transport operations. Among others, the Alfredsson Transport haulier is 100% trucking Fiskeby's products within Norrköping using e-lorries running on green electricity. This solution not only eliminates CO₂ emissions but also significantly reduces noise caused by heavy road traffic. "This is absolutely state-of-the-art technology and the most lenient for nature, people and the city of Norrköping. The flow is big for us, and we expect to move around 1,000 tonnes of cardboard every week completely emission-free, which we are very proud of," underlined Erik Lundh, Fiskeby's Head of Logistics.

Rusta, a Swedish DIY and home renovation & decor major with 200 stores, is another

establishment that keeps goods flowing through Norrköping. In 2021, the company added 68k m² to its already 117k m² central warehouse in the area.

Stadium, Sweden's largest sports equipment retailer, is headquartered in Norrköping, where its main warehouse is also situated. Through it, the company feeds its 170 stores. But first, Stadium needs to import its merchandise from Asia (China, Vietnam, Indonesia, Bangladesh, and Thailand – a total of 20 export ports, with Xiamen topping the list) – and does so via sea to Norrköping.

In the middle of writing this article, the third-party logistics arm of PostNord, a provider of postal services in the Nordics, shared that it will set up a brand-new warehouse in Norrköping.

The 62.5k m² facility will be commissioned in April next year, adding around 50 jobs to its already 400-strong workforce. "The new warehouse isn't only important to us but also to the entire region of Norrköping. It means growth for our business and possibilities for local companies and workers. We can now offer new customers a flexible warehousing solution that will meet future requirements for automation, environmental certification, and energy efficiency. Norrköping's geographical location gives us advantages in attracting new clients and expanding existing cooperation, like the one with Stadium," Daniel Eriksson, Regional Manager, PostNord TPL, highlighted. The company also underlined in its press release, "Norrköping offers good conditions



Photo: Lantmännen



Photo: Holmen

for effective logistics for companies with customers in Sweden and throughout the Nordic region. The city's strategic localisation with well-established rail, air, sea and road connections, as well as the vicinity to goods flow between Gothenburg and Malmö and the region of Stockholm, make it an ideal place for logistics companies." Furthermore, PostNord TPL intends to turn its new facility in Norrköping into a reference model for those thinking about expanding their third-party logistics (not least in creating an employee-friendly working environment).

Being a universal port, Norrköping also trades in goods other than containerised freight. Just next to Pampus sits the Energy Terminal. This area offers three jetties and 800kt of storage space for oil products, acting mainly as a fuel depot (there is also a cavern in another part of the port). That is why the Russian aggression against Ukraine didn't negatively impact the port's liquid bulk turnover in 2022 (which, with 1.14mt, was close to 2021's result). That said, Norrköping is also looking at securing new liquid bulk volumes, with liquid carbon dioxide being the latest addition here (CO₂ was a waste by-product in the past; now, it can be used as, e.g., protein feed).

Lantmännen, a Swedish agricultural cooperative, has an ethanol factory on

Händelö, the part of Norrköping where the Pampus and Energy terminals are located. In 2021, the organisation announced a SEK800m investment (€71m) in a grain-based biorefinery in Norrköping (for the separation of gluten), with operations up & running as of 10 May 2023. Lantmännen's output from Händelö lands on the Swedish and international markets (read: again, more freight flows). On the way to the 14.9 m deep fairway and 100 m wide port access in & out of Norrköping lies Djurön ("the animal island" in Swedish), where the cooperative runs one of Sweden's biggest export grain storage & handling terminals (250kt/year of capacity and capable of serving ships that can take up to 60kt).

Billerud, Holmen, Rusta, Stadium, Fiskeby, PostNord and Lantmännen, as well as the also present in the port Yara, Cementa, Omya and Kemira, are just a few examples of how the port is expanding hand-in-hand with its customers. It serves them and others on a multimodal, user-friendly base, with containers, trains, and trucks loaded and unloaded in and outside the warehouses as per the customer demand.

Existing operations: from strong to stronger

Closer to the city centre, the Öhman Terminal is situated, where primarily

break-bulk is handled (here, too, salt in big bags was abundant) but also dry bulk and project cargo (e.g., wind turbine components for Siemens Energy AB – Norrköping T). The 180k m² place (including 30k m² of warehousing space) offers 500 m of quay wall.

A short time ago, the Port of Norrköping reinforced Öhman's freight handling capabilities with three 50t lifting capacity rail-mounted quay cranes of the Mantsinen 120 model (as part of a SEK100m, €8.8m, investment programme). The move from the old Inner Port (2021-2022) to other parts of the port, including



Photos: Przemysław Myszk

Öhman, saw a 30% increase in bulk handling. Apart from taking care of cargo, the Port of Norrköping is also busy implementing a new stormwater system in Öhman.

Over the Motala River and vis-a-vis the Öhman Terminal's main gate lies the rail-connected berth no. 38, where Sweden's strongest 350t lifting capacity crane is used for taking care of weighty goods (e.g., factory equipment and machines for, a.o., Hitachi's transformer manufacturing plant).

Taken together, these 6,000 m-quay wall-long terminals handling 1,000+ vessels/year feed Norrköping with a steady stream of almost 4.0mt/year, with general cargo leading the chart (1.69mt last year), followed by liquid (1.14mt) and dry bulk (906kt). The export/import ratio is more or less on par. Some 110-120k TEUs/year pass Norrköping's quays, with a very high utilisation rate of every nine in ten containers going out or coming in laden. With its clients' and own investments, the Swedish port intends to take care of noticeably more in the future.

The linking

The Port of Norrköping's Pampus Terminal offers six tracks for trains up to 610 m in length (two dedicated to intermodal services and the other for wagon loads, of which one directly goes into a warehouse). On 1 February 2021, the 7.0 km-long electrified rail stretch, better known as the Kardon Railway, directly connected the port to Sweden's Southern Main Line. This investment allowed diverting rail freight traffic away from the city centre. It also enabled other improvements that will become a reality in the near future, such as erecting a new shunting yard closer to the Pampus Terminal – in place of the current one located within the city.

The port counts on a silver lining to the

Covid-19 pandemic, namely that people increasingly notice the need for remodelling logistics towards greater resilience and sustainability. That move would bring about a shift from road transportation, which is burdened by driver shortage, onto unaccompanied rail traffic. However, the two stumbling blocks are fear of change and lack of coordination. Here, the Port of Norrköping helped one nearby importer solve its logistical problem. Their European suppliers sent their trucks when the company needed them the least, congesting their warehouse and the city's parking lots. The port turned the company's attention to intermodal, bringing the cargo flow into the port. Local hauliers could then pick up the cargo units for the last-mile prompt delivery.

The old-new

The container terminal upgrade and bettering the rail offering weren't done only to improve the port's logistics standing but also to make way for city development. The Inner Port has already been emptied, meaning no more cargo handling operations take place there, to give space for the... Inner Port.

It will be a brand-new residential area (3,000 dwellings) with various amenities such as restaurants, shops, and other meeting places. "It is a challenging construction environment; foundation laying is costly. But our ambition is for this place to become an attractive district for the whole of Norrköping," Lars Löfgren, Head of Marketing at Hyresbostäder, the Inner Port real estate developer, said.

It is a trend seen throughout Sweden in particular and the Baltic in general. In Norrköping, it is carried out on a win-win basis: the municipality, which owns the port,

will have a new waterfront neighbourhood, plus an upgraded terminal whose heavy-duty operations will be out of citizens' way (though it is precisely their port that enables so many things: from overseas imports to catalysing growth of enterprises that provide job opportunities).

The future harvest – now

The Port of Norrköping is also part of Logistikia, a cluster gathering various players from the Östergötland region. The initiative is tasked with helping its members venture forth a sustainable and emission-free future. Just after the visit, Logistikia organised a meeting on charging electric vehicles (as an increasing number of heavy-duty e-trucks are hitting Swedish roads).

The port authority also partook in the SHREK project on the circular economy (ended in May 2023), exploring how this transition can influence its business, e.g., whether it will direct new types of goods for handling to its terminals. Sweden becoming more circular can result in new opportunities, a.o., what was burned to generate electricity and heat in the past will perhaps find a 'second life' thanks to some new recycling technology. If so, it might as well put new demands on handling it. Sharing such insights with port users will help better shape future circular logistics.

Meanwhile, another 'waste' that will become a resource in Norrköping will be the roofs of the port warehouses. The authority intends to furnish them with a photovoltaic system for harvesting solar energy.

Portkeeping

During the BTJ Trip 2023 \ Norrköping, I also had the chance to hear from the

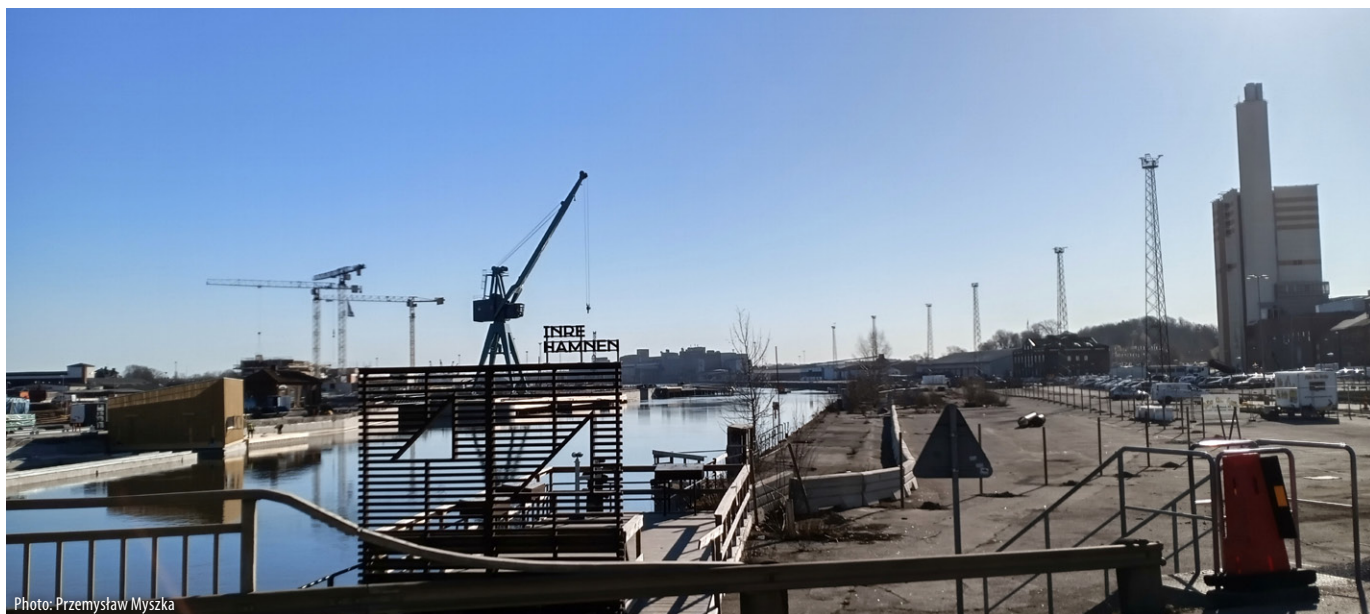


Photo: Przemysław Myszk



Photos: Przemysław Myszka



Photo: Susanne Mannerstam/Port of Norrköping

port's representatives (and at the same time, lovely hosts): Magnus Grimhed, Marketing & Sales Manager, and Susanne Mannerstam, Marketing Manager, who supplied the details above as well as insights into the port's overall philosophy and developmental approach. "It is a high and low, nowhere to hide job," the two said smilingly. "We are on the frontline, facing the port customers and their needs directly. For us, this is vital: to be part of the decision-making process, helping others to pinpoint the optimal solution, logistics- and sustainability-wise. No run-of-the-mill customer centre on the other side of the globe will give you that," Grimhed underscored.

He continues, "What we are trying to achieve here rests on the principle of sustainability – in all its forms and shapes. The environmental aspect is paramount, of course, but there are also other facets: quality, safety & security, availability, and productivity. These foundations – this framework – are uncompromisable, and we act on these values when fulfilling customer requirements. Poor handling of containers that would, for instance, neglect workplace health and safety and be carried out when the stevedore 'feels like doing it' (in a sloppy manner for an added insult to injury) would be a surefire way of going down the failure lane. In a port, one always can find an abundance of excuses – harsh weather or ship delays, among others – for our clients to

view us differently from, say, a paper mill or a construction company. 'Ports are so special!' one could exclaim. Yet, from a commercial point of view, there are hardly any 'alibis.' People buy from us certain services and rightly demand us to follow through on our promises. That said, we also must be realistic – clients can significantly help us, too, with timely ship arrivals or properly stowed vessels being two vivid cases. Customer-focused communication is key in connecting the sustainability dots. It is highly beneficial for a port to move outside its fence and then look back – at what it can offer from a client perspective. Really, it isn't about them having, for example, break-bulk, but how we can help them handle it further down the road – along the logistics and value chains."

"The port business is a tricky and risky one," Grimhed went on. "You need to be proactive and, at times, enterprising. This industry isn't pure mathematics – you won't cypher out the risk, so it's entirely gone. It is the older-than-dirt chicken and egg situation, such as should I buy a crane first or should the shipping line start moving more cargo before? We risked the first option and were awarded more goods over our quays. We want to pull the same off with the modernised container terminal and the already improved and soon-to-be even better rail network. Ambitious steps led to developmental opportunities – for our partners and us."

Dead on feet?

by Mike Yarwood, *Managing Director of Loss Prevention, TT Club*

Workforce fatigue is a topic that has been considered extensively in the context of the coronavirus pandemic; however, it remains an essential factor in keeping people safe and equipment and property protected as operations within the global supply chain and its working environment remain fraught.

Fatigue can be described as the decline in mental and/or physical performance due to prolonged exertion, lack of quality sleep, disruption of the body clock or extended periods of stress or anxiety. Fatigue can be either an acute or a chronic condition. The former, often resulting from short-term sleep loss or intense, temporary periods of heavy workload, can easily be reversed by sleep and relaxation. Chronic fatigue syndrome is a more severe state of tiredness not immediately relieved by rest.

Some of the fundamental challenges associated with fatigue and stress is that they are not easy to identify, quantify or

monitor. Signs of fatigue and stress can include irritability, depression, loss of appetite and an increased susceptibility to illness. Therefore, awareness of the symptoms and effects of fatigue becomes critical in managing the related workplace risks.

Fatigue should be of concern to those responsible for managing health, safety and well-being in the global supply chain for a number of reasons. Primarily, operations may naturally be expected to be performed 24/7/365, resulting in the need for shift work and people working unnatural hours. Landside operations (whether road transport, warehousing, ports or terminals) typically involve using heavy

equipment to handle and move cargo, increasing risk. Tragically, as seen in numerous cases, fatigue impacts not just the concerned individual but co-workers and potentially the general public.

The recognisable effects of fatigue include reduced decision-making ability, poorer communication skills, degraded attention and vigilance, dulled reactions, increased tendency for risk-taking and increased errors in judgement. It is not difficult, thus, to correlate such effects with workplace risks, especially when individuals are working with machinery, moving parts and mobile equipment or need to react decisively to dynamic situations.

Assessing the impact

A recent study sought to monitor personnel driving mobile equipment by deploying sophisticated camera technology installed in terminal vehicles. The equipment was mounted in the driving cab and monitored the operator's behaviour and responsiveness. The associated software detected events such as where the eyes of

the operator unwittingly closed for any prolonged period during their working hours.

The study started with an information campaign for the workers explaining the effects of fatigue, followed by two monitoring stages. In the first, the equipment was installed and only recorded fatigue events without alerting the driver, building

a significant amount of information over a period. The second phase introduced an audible warning if an event related to prolonged eye closure was detected, thus highlighting the issue to the operator.

The study results were illuminating. Notably and unsurprisingly, there was a much higher fatigue event rate during the

night shift, especially during 23:00-05:00. Events were recorded, evidencing that operators could close their eyes for several seconds whilst driving the vehicle. While this is inherently dangerous in any circumstances, when considered in the confined and often congested environment of a transport yard or container terminal, there is an increased risk of a high-consequence incident. By way of context, moving at 20 km/h, a vehicle would travel in the region of 11 meters

during an eye closure of just two seconds!

Introducing an audible warning led to dramatic improvements: in some cases, the number of recorded events was reduced to zero. This suggests that once an individual is provided with effective alerts and understands the impact of fatigue, self-management can overcome feelings of fatigue.

There are several known environmental factors that can be assessed and, if required, modified to mitigate the associated risks of

fatigue. Whilst not an exhaustive list, dim lighting, high temperatures, high levels of comfort, tasks that must be sustained for long periods and ones which are repetitive, difficult, boring or monotonous can all lead to increased fatigue levels. Amongst numerous sources with good material to consider, most national health and safety authorities, such as the UK's Health and Safety Executive, will have compiled valuable information.

Is the answer simply more sleep?

While a simple answer, of course, this is not entirely possible for many in this industry; achieving a perfect work-life balance is difficult. So how much sleep do we need? Each individual differs, and this should not be underestimated, but studies suggest that, on average, somewhere between 7.5 and 8.5 hours of sleep per 24-hour period is preferable. This is, however, affected by age, what levels of energy have been used through the last waking period and a myriad of other factors

(like the actual quality, not only the quantity of sleep as too much sleeping can also have a detrimental effect, in itself dependent on multiple physical and psychological circumstances) – so it is not a simple benchmark!

Several aspects, including heart rate, blood pressure and body temperature, will influence the amount of sleep required by an individual. Humans naturally follow a biological clock, a cycle of sleep, wakefulness and alertness, generally aligned with daylight hours. Studies

suggest that periods of intense fatigue are usually experienced when we instinctively require sleep the most, between 23:00 and 06:00. Furthermore, shift workers can suffer from sleep deprivation because their sleeping schedule typically changes frequently. For night workers, other concerns, not least family life, will usually continue through the periods when they may seek to sleep – school runs, phone calls and appointments. Simply trying to sleep during daylight hours can be problematic.

Considered management

Workforce management often focuses on 'absenteeism,' but greater costs could be associated with 'presenteeism,' where workers are unaware of the risks and

continue to work. Workforce awareness about fatigue improves the ability to identify individual issues. While recognising the symptoms of fatigue can

be challenging, there are several practical steps that both the organisation and the individual can take to mitigate the associated risks.

Organisational

The list includes engaging with the entire workforce to increase awareness and provide a broader recognition of this phenomenon as it improves the ability to identify individual issues.

Next, organisations should frequently ask employees if they are fit to work and be aware of the issues in the lives of their workers that might impact this.

It would be advisable to provide a means for workers to request temporary adjustments to working hours and, within reason, take account of personal circumstances that may affect workers' mental and physical health.

Inclusion will be critical in effective management to overcome barriers related to individual 'coping strategies' and 'presenteeism.' Operators are encouraged to consider

whether stimuli such as paid overtime incentivise unproductive, long work hours.

Employers should also look at investing in effective monitoring systems and alerts, involving the workforce where possible, particularly seeking to design work shifts to recognise fatigue risks. Heavy goods vehicle drivers should be provided with adequate overnight sleeping facilities.

Individual

Employees should take sleep seriously, understand their requirements under normal and abnormal conditions and make time for rest. To that end, workers are prompted to assess their sleeping arrangements; subtle changes, such as blackout blinds, may assist in increasing the quality of sleep.

Following a proper diet is too fundamental: keep hydrated since this can assist in

combatting some effects of fatigue, and eat small portions of food, particularly during unnatural waking hours; this can improve digestion and preclude drowsiness. Limit caffeine intake and, overall, understand how this stimulant affects your body and how long it remains in your bloodstream, including its impact on the ability to sleep.

On the whole, maintaining a generally healthy lifestyle to the extent possible is

also advised; regular exercise can assist in fighting the effects of fatigue as well as increase one's energy levels in the long haul.

Last but not least, fostering a community recognition and culture relating to fatigue risks can pay dividends; it not only is respectful but also delivers safety for the individual, co-workers and operations generally.



TT Club specialises in the insurance of intermodal operators, non-vessel owning common carriers, freight forwarders, logistics operators, marine terminals, stevedores, port authorities and ship operators. The company also deals with claims, underwriting, risk management as well as actively works on increasing safety through the transport & logistics field. Please visit www.ttclub.com for more info.



A pragmatically balanced system

by Elle De Soomer, Head of Legal Affairs, Shipping Policy & Security, Royal Belgian Shipowners' Association¹

This article discusses European regulations related to pollution prevention in the shipping industry, including the Ship-Source Pollution Directive (SSPD), the Ship Recycling Regulation (SRR), and the Environmental Liability Directive (ELD). These regulations place responsibility on shipowners for compliance and the cost of pollution incidents. All of them are currently under review in the European legislative process, influenced by the European Commission's (COM) push for better environmental protection outlined in the Green Deal and the Environmental Crime Directive (ECD). The paper provides an overview of recent developments in this field and argues for the continued use of sectoral legislation with administrative penalties rather than legislation focused on criminalizing offenses.

The shipping industry is subject to various European regulations designed to prevent and minimize pollution. In this paper we will focus on three of them, namely SSPD, SRR, and EDL. Shipowners are responsible for ensuring that their ships comply with these regulations, and they also bear the cost of any damage caused by pollution incidents.

These regulations are, however, all under scrutiny – although in different phases – in the European legislative process. The review process is impacted, directly or indirectly, by the COM's recent push to achieve ambitions laid out in the Green Deal and the adoption of a more general regime on the protection of the environment through criminal law within ECD.

This paper aims to provide a short overview of recent developments in this evolving field of European legislation. It will argue¹ for the continued use of sectoral legislation with administrative penalties for pragmatic reasons rather than a general legislation focused on criminalizing certain offenses.

Tab. 1. Summary of the three European provisions for marine environment offenders

Regulation	Ship-Source Pollution Directive	Ship Recycling Regulation	Environmental Liability Directive
Date adopted	Directive 2009/123/EC	EU Regulation 1257/2013	2004/35/EC
Scope	Prevention of pollution from ships	Ship recycling	Environmental liability
Objective	To minimize the risk of pollution from ships, including oil spills and discharge of harmful substances	To ensure that ships are recycled in an environmentally sound and safe manner	To ensure that operators are held liable for damage to the environment and that measures are taken to prevent and remedy such damage
Focus on shipping sector	Establishes rules for the prevention and control of pollution from ships, including regulations on equipment and procedures for preventing spills and discharges, and emergency response plans, specifically related to the shipping sector	Establishes rules and standards for the recycling of ships, including requirements for ship recycling facilities to be authorized and regularly inspected, and for ships to carry an inventory of hazardous materials before being recycled	Establishes rules for the liability of operators for environmental damage, including provisions for preventing and remedying damage, and for compensation for victims of such damage
Step in the European legislative process	The new SSPD proposal is planned for the first quarter of 2023	The new SSR proposal is planned for 2025	The adoption of the evaluation report is provisionally scheduled for the second quarter of 2023

¹ The article was ordered and first published by the [European Transport Law Magazine](#)
² This paper draws, among others, on arguments developed in various fora of the European Community Shipowners' Associations (ECSA) and the International Chamber of Shipping (ICS). However, the views expressed are those of the author.

Photo: Canva

Specific provisions for marine environment offenders

Over the years, specific provisions on administrative and criminal sanctions for marine environment offenders have been introduced in the EU. The shipping and maritime industry is particularly affected by these regulations. Several drivers led to the establishment of these regulations.

The need to protect the marine environment: since the 1970s, several regulations were adopted in response to concerns about the environmental impact of shipping, including the pollution of the marine environment by oil and other harmful substances.

High-profile oil spills: there have been several high-profile oil spills in European waters, including the *Prestige* oil spill in 2002, which led to significant environmental damage and public concern about the impact of shipping on the environment. Regulation was adopted to address these concerns and to prevent similar incidents from occurring in the future.

The aim to implement international regulation: the EU has implemented several international maritime regulations in order to protect the marine environment

and ensure the safety of ships, and to comply with the international agreements adopted by the International Maritime Organization (IMO).

The desire to harmonize EU regulations: several regulations were adopted in order to harmonize the rules for preventing and combating pollution in European waters. It establishes common requirements that apply to all EU Member States, and it aims to ensure that ships operating in European waters are subject to consistent rules and standards.

Ship-Source Pollution Directive

SSPD is an EU directive that sets out specific rules for preventing and combating pollution from ships in European waters. More specifically, SSPD covers the penalization of both EU and foreign vessels. It also brings the possibility for prosecuting unintentional discharges committed with serious negligence. Prior to the entry into force of the Directive, the enforcement of the international maritime pollution prevention regime targeted illegal discharges mostly in territorial waters.

SSPD is based on the provisions of the International Convention for the

Prevention of Pollution from Ships (MARPOL, 1973), the international treaty that aims to prevent and minimize marine pollution from ships. The Directive was adopted in order to implement the provisions of MARPOL within the EU. SSPD thus complements the international framework by establishing the liability regime pursuant to which international standards on illegal discharges should be enforced.

SSPD has been effective in requiring a common framework on ship-source pollution for infringements regarding

MARPOL Annex I and Annex II discharges – pollution by oil and noxious liquid substances – into the sea and provides the legal basis for the creation of a new European tool for satellite surveillance and detection of spills: **the CleanSeaNet service.**

The process to revise SSPD is underway. COM is expected to evaluate Directive on its relevance, effectiveness, efficiency, coherence, and EU added value in 2023. It is likely that it will be proposed that SSPD be expanded to include Annexes III, IV, and V of MARPOL.

Ship Recycling Regulation

Ship recycling is a complex process that risks to generate hazardous waste, such as

asbestos and other toxic substances, and impacts on the environment and human

health. It may also contribute to marine pollution if not properly managed as ships

may release hazardous substances into the ocean during the recycling process. Therefore, it is essential that proper regulations and supervision are in place to ensure safe and environmentally sound recycling practices.

To reduce the risk of substandard ship recycling, several international conventions and EU regulations have been adopted. The most relevant texts are the Basel Convention (1989), the Hong Kong Convention (2009), the Waste Shipment Regulation, and SRR. The last of these – adopted in 2013 – is a piece of European legislation that sets out rules for the environmentally sound recycling of ships. The Regulation is aimed at facilitating early ratification of IMO's 2009 Hong Kong Convention for the Safe and Environmentally Sound Recycling of Ships – both within the EU and in other countries outside the EU – by applying controls to ships and ship recycling facilities on the basis of the Hong Kong Convention. It sets

out specific requirements for ship recycling in the EU, including safety and environmental standards for the facilities where ships are recycled and the training and qualifications of workers involved in the process.

SRR sets higher standards than the Hong Kong Convention – requirements related to downstream toxic waste management. Moreover, labour rights are included. EU-listed ship recycling facilities are thus subject to a higher level of scrutiny and independent third-party certification and auditing.

As of December 2018, EU-flagged commercial vessels over gross tonnage of 500 must be recycled in safe and environmentally sound facilities that are **included on the rather limited list of approved ship recycling facilities**. From 2020 on, it applies also to non-EU flagged ships calling at a port or anchorage of an EU Member State. The geographical concentration of these facilities raises concerns together

with their capacity to accommodate vessels of substantial size, such as very large crude carriers. Additionally, it remains uncertain if these facilities possess the necessary capacity to efficiently handle the significant volume of EU-flagged ships that are expected to require recycling in the foreseeable future. It does not align with the current reality within the international shipping industry. This discrepancy has the potential to disrupt the established level playing field and place EU shipowners at a disadvantage. It is important to note that the proceeds generated from the sale of a ship for scrapping are often re-invested in the acquisition of new, more sustainable vessels.

COM has announced that it will have a proposal ready for a revision of SRR by 2025. In the meantime, a number of assessments and evaluations will be prepared, among others, on a financial instrument.

Environmental Liability Directive

The EU has introduced ELD to establish a framework of environmental liability ('**environmental liability regime**'). The European framework is based on the 'polluter pays' principle. The aim of the framework is the restoration by a polluter of environmental damage caused to natural species and habitats, to water resources, and to land. In the event of damage, the polluter will be required to identify and fund measures necessary to return the affected area to its pre-incident condition.

ELD embeds some new and often challenging concepts, both in an economic and ecological sense (e.g., economic valuation of damage or compensatory remediation of damage). This has led to a long run-up which concluded

eventually in a much narrower approach that focuses on administrative liability that would be better suited for tackling environmental damage in the European context.

ELD outlines the types of damages and activities for which an operator may be held liable. It holds strict liability for environmental damage caused by specified occupations carrying out 'dangerous activities,' including industrial and agricultural installations needing an Integrated Pollution Prevention and Control permit, transport of waste, carbon capture & storage, and others.

The Directive holds a limited set of exemptions where ELD does not apply. Next to the rather classical defences for strict liability – such as 'activities to serve

national defence or international security or protection against natural disasters,' 'act of armed conflict, hostilities, civil war, insurrection' and 'natural phenomenon of exceptional, inevitable and irresistible character,' – there is also the exemption with regard to 'diffuse pollution' when no causal link can be assigned to individual operators. The exemption of environmental damage arising from an incident of which liability or compensation that falls within the scope of any of the international conventions are listed in Annex IV. Examples include (mainly IMO conventions) on oil pollution, carriage of hazardous substances at sea and on land, and nuclear risks. COM is expected to finish the evaluation of ELD in 2023.

Environmental Crime Directive

Simultaneously with the aforementioned adoption of specific regulations, a more general regime on the protection of the environment through criminal law is currently laying under scrutiny of the European legislative process. In 2008, the directive on the protection of the environment through criminal law was adopted. It is the main European instrument in the field of environmental criminal law. ECD criminalises serious violations of over 70 legal instruments in the environmental field and requires effective, proportionate, and dissuasive sanctions.

More particularly, ECD defines environmental offences that EU Member States must criminalise (based on the most serious

infringements of rules aiming at protecting the environment as set out in legal instruments listed in the annexes to the Directive); requires EU Member States to ensure criminal liability also with regard to inciting, aiding, and abetting; and obliges all EU Member States to ensure effective, proportionate, and dissuasive criminal sanctions for environmental crimes. Sanctions for legal persons do not need to be criminal sanctions.

Based on a recent evaluation, COM found that ECD has not fully met its objectives and that significant divergence remains between EU Member States. Overall, it was found that ECD did not have much effect on the ground and its implementation in

practice is poor in all EU Member States. This is reflected by the fact that the Directive did neither lead to more prosecution and convictions of environmental crime nor to the imposition of more dissuasive sanctions in the EU Member States.

COM began an initiative to review and assess various options to address these challenges and to help improve the effectiveness of a revised ECD, especially by provisions facilitating and fostering the work of practitioners such as law enforcement authorities, prosecutors, and judges. COM presented its legislative proposal for a revised Directive at the end of 2021. The proposal is now being debated by the European Parliament and the Council.

Discussion

One of the observations in the evaluation is that the list of 72 pieces of administrative environmental legislation contained in the Annexes is largely outdated, as the included legislation has in many cases been amended or repealed. New legislation and new areas of environmental law have not been included since ECD entered into force. This leads to uncertainties regarding the scope of ECD, demands a high degree of specialised knowledge from law-enforcement practitioners, and creates inconsistencies as new areas of environmental protection are not protected by ECD.

It is thus clear that there is a will to broaden the scope of the Directive: a wider range of offence categories has been identified presently not covered by the current ECD. The scope of the proposed Directive has also been expanded to include more offences which could be committed by a ship or a shipping company, notably 'source discharge of polluting substances from ships' and the 'illegal recycling of ships.'

Indeed, COM has adopted a proposal which also covers infringements under SSPD (ship-source criminal offences are currently not covered by ECD but are covered by SSPD, after its amendment through Directive 2009/123/EC). SSPD will continue to include provisions on the definitions of illegal discharges considered as infringements and provide for administrative penalties for illegal ship-source pollution (additionally, a legislative proposal for the revision of SSPD is expected early 2023; it is likely that COM will propose that SSPD is expanded to include some of, or potentially all of the other Annexes to MARPOL).

In parallel, criminal law enforcement and criminal penalties will apply through ECD to most serious cases of ship-source pollution, when the elements of the offence description are fulfilled and the evidence base is sufficient. As such, the criminal offence for ship-source pollution, as defined in the proposal for a new ECD, mirrors the offence description of the current SSPD, including the geographical scope, definition of infringement, and exceptions. The proposed ECD includes a ship-source pollution offence with the same content as the criminal offence currently described in SSPD, i.e., it is a transfer of the offence to ECD for consistency and because of the legal basis for criminal law measures.

In itself, it does not matter that penalties are covered by another directive but from our point of view SSPD establishes a lower threshold of criminal liability which does not cover accidental pollution. This ultimately creates legal uncertainty.

The COM's proposal further covers the recycling of ships flying the flag of an EU Member State in yards that do not appear on the EU list under SRR (the Waste Shipment Regulation is already included in ECD), and thus EU Member States will be required to provide for criminal prosecution for violations.

The potential application of custodial penalties in serious cases of maritime pollution caused by shipping accidents is a major concern, as the United Nations Convention on the Law of the Sea (UNCLOS) states that only monetary penalties can be imposed unless the pollution is deemed 'willful and serious.'

The efforts to reinforce environmental protection are clearly endorsed by shipowners. In our opinion, the new proposal of ECD leads, however, to discrepancies in the interpretation of existing EU and international instruments, such as MARPOL and UNCLOS, and creates legal uncertainty for shipowners, potentially leading to increased costs and difficulties in compliance. Overall, a global international framework has the preference from a shipowner's point of view. It provides legal certainty for an international industry, in contrast to regional European legislation. Zero pollution could be achievable following MARPOL and other already implemented international conventions.

Broadening the scope of ECD through enlisting new legislative acts in the scope of the Annexes of ECD would oblige EU Member States to provide for criminal sanctions in their national law, where some EU Member States currently apply effective administrative sanctions. EU Member States should remain competent to determine whether administrative or criminal sanctions are the best means to tackle infringements. Furthermore, in the shipping industry, administrative sanctions have proven to be efficient, effective, proportionate, and dissuasive. For example, with the introduction of the new Belgian Shipping Code, the country has removed criminal penalties for, among others, offences on ship recycling and provided administrative penalties instead. For other environment-related

offences (MARPOL), criminal sanctions continue to exist, but administrative sanctions will remain the preferred option. With the proposed ECD, EU Member State will have to provide criminal penalties again.

Shipping regulation is, in general, enforced by very effective port state control and flag state control systems and provisions in national law with effective and dissuasive sanctions in case of non-compliance. A criminal case has to be proven beyond reasonable doubt, which makes prosecution resource-intensive and difficult. Hence requiring EU Member States to apply criminal sanctions where civil ones currently apply will not add any value. Indeed, it is likely to divert resources away from preventive and enforcing measures and, therefore, weaken the ability of EU Member States to apply the regulation.

The criminalization of seafarers has been a growing concern as it implies that they are solely responsible for accidents and incidents that occur on board. However, it is important to note that shipping accidents and incidents can be caused by a variety of factors, including human error, equipment failure, and weather conditions. Statistics prove that the amount of trade by sea, especially the carriage of oil, has gradually increased and that the number of accidents has actually decreased. The move towards criminalisation of seafarers within a highly regulated shipping industry indicates that those responsible for passing such legislation may not be aware of these facts.

It is imperative that laws at the national level recognize and align with international law, as established in UNCLOS and MARPOL, in order to counteract the recent trend towards criminalizing seafarers. The use of technology – such as automatic information systems, vessel traffic management information systems, and especially the CleanSeaNet – can provide greater visibility and understanding of shipping activities, potentially reducing the number of accidents and minimizing the need for the criminalization of seafarers.

To conclude, we are convinced that it is important to have a balanced system with both administrative and criminal enforcement playing parallel roles. Administrative sanctions should be reflected upon as the most appropriate, sustainable, and pragmatic approach to be used in the international shipping sector. ■



Royal Belgian
Shipowners'
Association

The Royal Belgian Shipowners' Association represents the common interests of all shipowners and ship managers based in Belgium and active in international maritime transport by sea. The RBSA plays a dynamic role in promoting the sector as an attractive employer and provides its members with operational support and technical expertise on fiscal, social, environmental and maritime regulations. Go to kbrv.be/royal-belgian-shipownersassociation to learn more.

Better together

by Pekka Pakkanen, *Executive Vice President for Shipping Solutions, NAPA*

In shipping's constantly evolving decarbonization debate, the benefits of reducing the carbon footprint of ships have often been eclipsed by discussions about new fuels. But, as the University Maritime Advisory Services concluded in its recent report, *How can international shipping align with 1.5°C?*, most of the absolute emission reductions required this decade can be unlocked with improved energy efficiency, including clean technologies such as wind propulsion. As a case in point, a joint simulation project between NAPA, Norsepower, and Sumitomo Heavy Industries Marine&Engineering (SHI-ME) found up to 28% emissions reduction potential when combining wind propulsion with voyage optimization.

This focus on making the most of available technologies was the starting point of the collaborative study between NAPA, Norsepower, and SHI-ME. Like many in the industry, the partners already knew that wind propulsion and voyage optimization are essential to achieve shipping's decarbonization ambitions, and it made sense that combining the two technologies would produce even better results – but by how much exactly?

To answer this question, the first phase of our cooperative simulation project evaluated the fuel-saving and emission-reduction potential of combining a Norsepower Rotor Sail™ with NAPA's Voyage Optimization on a SHI-ME tanker. This collaborative endeavor brought together the partners' diverse expertise and experience: NAPA's ship performance model and voyage simulation tools, Norsepower's actual performance data, and SHI-ME's expertise as one of the world's leading shipyards.

Phase one: demonstration

Using nowcasting weather data from 2022 and specifications provided by Norsepower and SHI-ME, digital twins developed by NAPA simulated the tanker's performance in selected sea areas. The project ran from December 2022 to March 2023 and evaluated six routes typically sailed by the vessel.

Across all of them, the study found an average CO₂ reduction of 19% when using NAPA Voyage Optimization alongside Norsepower Rotor Sail™, with the former contributing 10% of these emission reductions. The project showed the most potential savings on the Atlantic route between New

York City and Amsterdam, where the combination of four Rotor Sails™ and NAPA's Voyage Optimization could deliver average emission reductions of 28% (our tool's contribution to this was estimated at 12%). For the routes between Singapore, the Escravos and Luanda, combining wind propulsion and weather routing could reduce emissions by 17% on average, with voyage optimization contributing 11%.

For shipowners and operators, this joint study brings much-needed clarity at a critical moment, strengthening the business case for investing in wind-assist technology when the industry is under increasing pressure to decarbonize. More than confirming the technology's enormous potential for immediate emission reductions, the project brings precise, granular data on what the two technologies can achieve together on specific routes. This invaluable insight and assurance are needed for the industry to make the right commercial and operational decisions as early as the design stage. The results of this initial phase are impressive, but the project is not stopping there!

Phase two: enhanced performance

In this concerted project, NAPA, SHI-ME, and Norsepower are also exploring how to predict vessel performance at the design stage, testing how the ship could handle varying sea and weather conditions.

Phase one analysis showed that significant route changes are required to encounter the most favorable wind conditions, and this is where phase two of the project takes the collaboration further. This second step, which started in May 2023, explores how to

enhance the performance of vessels designed with auxiliary wind propulsion in the form of modern hi-tech Flettner/Savonius rotors by developing data for a wider range of vessel responses and weather conditions.

Using fleet data, the study will investigate ways to improve vessel design and explore new optimization strategies for improving operational performance. The project is part of SHI-ME's plan to develop a new proof of concept for wind-assisted ships, which will be equipped with Norsepower Rotor Sails™.

Among others, the project partners will conduct a more advanced analysis of lateral forces and movement of the hull. Typically, ships are designed to deliver optimal performance in static wave conditions or the absence of waves. Still, wind-assist vessel designs must be adapted for the stronger wind conditions in which they will operate. Therefore, SHI-ME's ship design process will include greater consideration of ship motion and stability in heavy weather, in addition to the traditional static wave calculations already used for many vessel designs. This will involve developing ways to handle big data sourced from NAPA and incorporating these into the ship design process.

For NAPA, the project will expand our understanding of the design process and increase the sophistication and accuracy of our voyage optimization models. Phase one revealed the potential for up to 28% savings in fuel consumption and greenhouse gas (GHG) emissions when Norsepower Rotor Sails™ are used together with NAPA Voyage Optimization, so we believe that weather routing can be a game-changer for

wind propulsion. The project partners see the potential of adding to that value even further when operational data is used to inform the ship design process.

Collective focus on tangible actions

Phase two will pave the way for a continual feedback loop between vessel operation and ship design. By doing so, NAPA, Norsepower, and SHI-ME hope to help the industry reinvent how we design and operate ships to make the most of existing technologies that can already reduce GHG emissions today.

For shipowners, unlocking the potential of wind propulsion and voyage optimization means more than just greater fuel savings and better operational ratings under the International Maritime Organization's Carbon Intensity Indicator regulation. It also means better operational performance future-wise for newbuilds and easier compliance with regulations such as the Energy Efficiency Design Index. Financial benefits will also come from the various incentive schemes available to them, including port fee concessions and future carbon taxes.

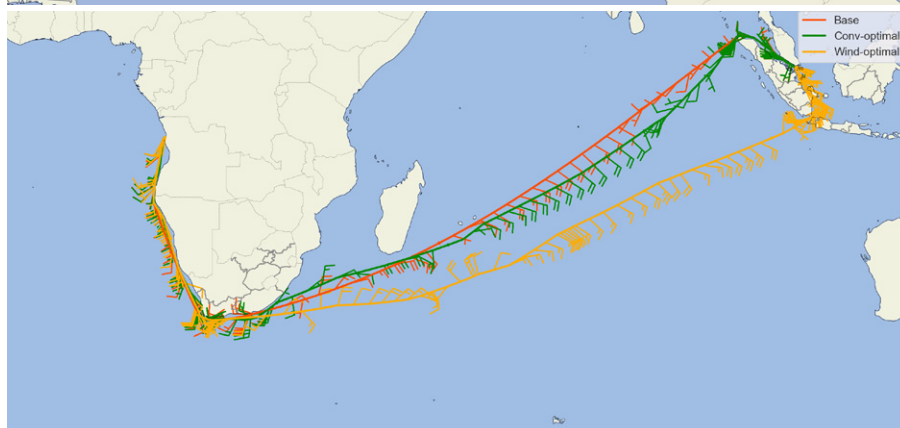
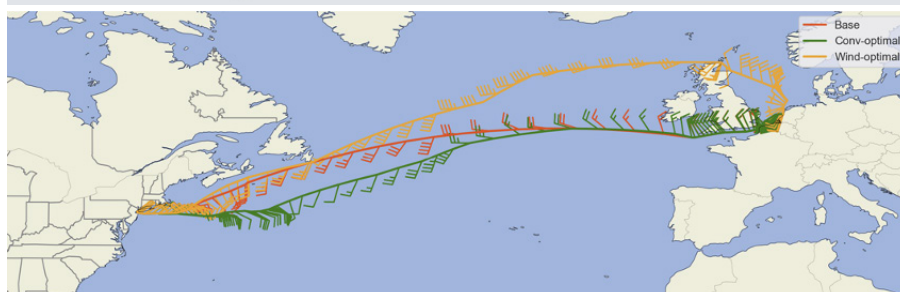
The value of boosting vessel efficiency this decade will extend beyond current regulatory requirements and be essential to achieve shipping's longer-term decarbonization ambitions. As an industry, we collectively need more focus on tangible actions that can take place during this decade to reduce GHG emissions from the maritime sector. Only a finite amount of GHG emissions can be released into the atmosphere before we're too far off the 1.5°C target set out by the Paris Agreement. In other words, we need pathways to reduce climate-warming emissions from ships on the water now.

Furthermore, any efficiency gains made in the 2020s will buy precious decision-making time for adopting new fuels later, and more efficient vessels will require smaller volumes of these expensive fuels. Therefore, shipowners who take proactive and collaborative action now to incorporate efficiency gains will have increased control over their own short- and long-term decarbonization strategies.

This joint study has shown how – by collaborating – the industry can navigate profound change with greater confidence. By working together, we can learn from each other and gain new insights to help us make smart decisions at every step. This will be essential to comply with regulations and deliver the more sustainable shipping needed by the planet in a way that makes sense for each company's operations and business. ■



Photos: NAPA



With 34 years of operation, NAPA is a leading maritime software and data services provider to enable safe, sustainable and future-proof shipping. With 90% of new vessels built by NAPA customers, NAPA's design software is the global standard. For ship operations, NAPA provides ship stability and data management, and its cloud-based solutions for performance monitoring and optimization support shipping decarbonization. Visit www.napa.fi to see more.



NORSEPOWER

Norsepower was founded in late 2012 with a mission to reduce the environmental impact of shipping through its Rotor Sail™ technology. Our vision is to set the standard in bringing sails back to ocean transportation and empower shipping towards reaching the goal of zero carbon emission. Go to www.norsepower.com to learn more.



Sumitomo Heavy Industries Marine&Engineering is a Japanese shipyard that creates new value through the power of marketing and engineering. The company has built various types of vessels in Yokosuka for over 120 years. In the 21st century, the shipyard focuses on constructing medium-size crude oil & petroleum products tankers, especially Aframaxes. Head to www.shi.co.jp/me to discover more.

Planting a seed

by Panos Koutsourakis, VP, Global Sustainability, ABS

Maritime decarbonization is a complex challenge with multiple pathways at various technological and operational readiness levels. Because of the industry's regional aspects and varied trading routes, the shipping value chain has a unique opportunity to serve as a test bed for implementing infrastructure, developing and applying novel technologies and adopting alternative fuels.

Establishing green shipping corridors allows us to test, calibrate and assess risk in a regionalized or specific industrial ecosystem which can be further scaled to other regions or sectors. Optimization and simulation tools are expected to play an expanding role in helping stakeholders from across the green shipping corridor value chain in their decision-making process. This advanced modeling capability provides a detailed simulation of the complex nexus of stakeholders involved in corridor development, providing the data required to support policy and investment decisions.

To back up the development and implementation of green shipping corridors, ABS has launched a pioneering new Green Shipping Corridors Simulation service designed to assist international design and development of clean energy initiatives, together with an accompanying publication, *An Approach to Green Shipping Corridor Modelling and Optimization*, to provide practical support.

Aligning the disaggregated industries

A green shipping corridor represents a system of systems interacting with each other in unique ways, and modeling them using optimization methodology provides a framework for problem-solving and collaboration.

As a concept, green shipping corridors are likened to special economic zones at sea, where various value chain stakeholders can come together and deploy new technologies and business models that interact at full scale. The biggest advantage of such an initiative is to help diverse and disaggregated industries align and diversify their collective risks.

Any envisioned green shipping corridor will require close collaboration between stakeholders such as shipowners, fuel providers and ports. In addition, green shipping corridors will need an enabling environment where each value chain member can share risk at a smaller scale before upping the ante.

The ABS insight publication aims to communicate the need for optimization models

in resource planning and techno-economic analysis for such a complex system of systems as the green shipping corridor. The publication also provides a step-by-step logical methodology to achieve the same, considering multiple variables and constraints. The input data in the developed models are approximations from publicly available sources. The scope of this insight is to look at the results from mostly two specific points of view: the port and the shipowner, who are at the center of this value chain and have the greatest impact on emissions.

Every green shipping corridor should be considered unique, as the geographical locations, behavior of the stakeholders, fuel availability, economy, and trade patterns will be different in each case. For example, a corridor may have commercial ships and port operations that utilize alternative fuels derived from renewable energy with or without energy efficiency technologies. Simulating and optimizing all those operational aspects is vital to accelerating decarbonization across the various stakeholders.

Finding common ground

The development of a green shipping corridor begins by establishing a core group of stakeholders who will drive the development and implementation of it, often with one organization or a third party acting as a facilitator to guide the process. A working group develops a vision/charter and performs an initial analysis (often called a pre-feasibility or feasibility study) to help set end-state and intermediate goals.

Based on this analysis, the working group develops phased plans to achieve reduction targets and then advocates for action by the stakeholders to implement those actions. Key decisions that focus on the critical building blocks of green shipping corridors are viable fuel pathways, policy & regulation, customer demand, and cross-value chain collaboration.

The working group monitors implementation progress and attainment of

goals while continually reassessing options and strategies amid changing regulations/policies, technology availability, funding sources and operation incentives, etc. This is an iterative process informed by key analysis insights along the way.

Because of the number and variety of stakeholders involved in green shipping corridors, government agencies are sometimes expected to play a pivotal role in integrating individual stakeholder interests while testing and establishing policies.

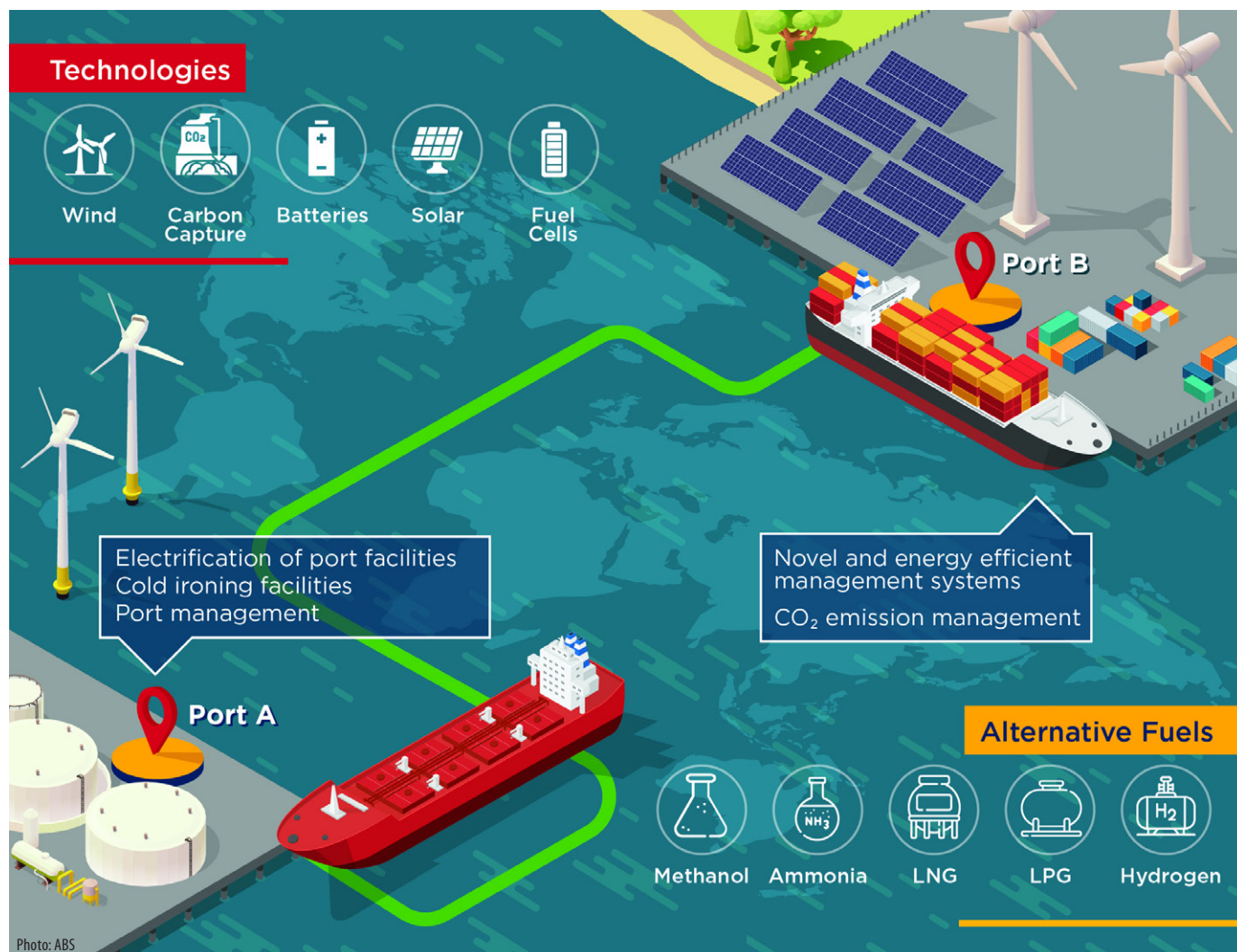
Optimization and simulation models can help in resource planning and techno-economic analysis of the selected corridor while considering any permutation and combination of alternative fuels and technologies. In this way, such tools provide the ability to bring all stakeholders, industry, non-governmental organizations, and government together to enable the exploration of the most optimal path forward for establishing and operating a green shipping corridor.

Real-world examples demonstrate how a green shipping corridor initiative can be viewed as a resource planning and optimization problem that considers the diverse requirements of each stakeholder. For example, the shipowner's requirements and decision-making criteria will differ fundamentally from a port's, but each decision is inextricably linked.

Hence, the model acts as the basis for common ground among the consortium members and helps them in their pre-feasibility and feasibility assessment. Such analysis will likely become a foundational requirement for any green shipping corridor as the concept matures. As more green shipping corridors take off, the methodology will evolve. As the data becomes easily available, there could be very creative use cases for these optimization and simulation tools.

Simulation in practice

Shipowners and port authorities can use the green shipping corridor optimization and simulation capabilities developed by ABS to



optimize their decarbonization strategy with quantitative evidence and trackable projections.

The simulation outputs cover fleet fuel shares, newbuilding vessel shares, annualized port investments, fuel demand prediction in specific ports, fuel storage requirements at particular ports, and year-over-year fuel procurement for port bunkering stations. Major KPIs of fleet fuel options, their shares, and the corresponding costs should be investigated to help green shipping corridor decision-makers develop a decarbonization strategy.

Both tank-to-wake and well-to-wake fuel lifecycle emissions of marine fuels should be considered with decarbonization goals set appropriately. The fuel mix shares have shown clear trends in all the scenarios developed to date: low-carbon fuel options will gradually substitute the current dominant bunker, very-low sulfur fuel oil, and a more ambitious strategy will tremendously accelerate the speed of fuel oil phase-out. Green ammonia has been projected to be a strong candidate

for tank-to-wake cases, and bio-methanol would be the most cost-effective fuel option for well-to-wake emissions in 2050.

Stakeholders should also consider the average total cost of ownership for the selected green shipping corridors fleet, considering operating expenditure, annualized building cost, fuel tank cost and carbon pricing. The OPEX and annualized building cost are the primary indicators used to determine the average.

The optimization outputs provide insights on fuel procurement shares for decision-makers within port authorities. The fuel sources and associated infrastructure readiness levels are essential to reach the maximum return on investment as well as meet the long-term maritime decarbonization goals.

De-risking the process

Optimization and simulation are potent capabilities that can help the various stakeholders in a green corridor project understand the variables in their systems with as much detail as possible to make the most prudent decisions from their point of view.

One of the most significant advantages of this optimization tool is that it can help each stakeholder understand their maximum risk profile and the impact of their decisions on the entire corridor.

When shared among the consortia members, the optimization model results will provide a common ground for de-risking and sharing the costs, which will be one of the most important outcomes of a collaborative initiative of this size.



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Staking a claim

by Chris Chatterton, *Chief Operating Officer, the Methanol Institute*

Methanol is fast emerging as a fuel that shipowners and operators are choosing to reduce pollutant emissions and set themselves on a path to carbon neutrality. Methanol engines, fuel supply technology, and bunkering solutions are commercially available, and leading shipping companies such as Maersk, CMA CGM, COSCO, Waterfront Shipping and Stena Line have already chosen methanol.

As a result, methanol has staked a significant claim to be among the serious fuel choices for vessel designers, owners and operators looking to transition to sustainable operations. As the shipping industry pivots towards net-carbon-neutral operations, owners increasingly seek to understand how methanol can help them progressively reduce emissions in line with regulatory targets.

While there won't be a single decarbonisation solution, it is clear that methanol has advantages that combine to provide a pathway to lower carbon and, ultimately, carbon-neutral operations. From a technical perspective, methanol can be adapted on board ships on a large scale now and is five-to-six years ahead of alternative marine fuels such as ammonia.

Costs

Today, conventional methanol produced from the steam reformation of natural gas is cost-competitive with diesel bunker fuels on an energy-adjusted basis and is a globally traded commodity.

Owners can operate ships on grey methanol already now, significantly lowering emissions of conventional pollutants, such as sulphur (SO_x) and nitrogen (NO_x) oxides, and particulate matter (PM), while transitioning to blue and green methanol as those fuels become more widely available. Methanol combustion itself does not generate any SO_x or PM emissions, and what little emissions do occur come from a small amount of diesel (3-5%) deployed as pilot fuel. According to tests carried out by MAN Energy Solutions, operators can reduce NO_x emissions below the International Maritime Organization's (IMO) Tier III levels by deploying a mixture of methanol with 25-40% water and 3-5% diesel as pilot fuel.

Methanol is the lowest cost carbon-neutral shipping fuel, by total cost of ownership (TCO), across a wide range of vessels and applications when compared to a suit of fuels including ammonia, liquefied biogas, electricity, and hydrogen (H_2), **according to a 2021 study by Aalborg University and Chalmers University**. Bio-methanol achieved the lowest

TCO across four ship types and all utilisation rates, although costs were significantly higher than those of marine gas oil (MGO), which was used as a benchmark. The study concludes that regardless of which fuels prevail, "the shipping sector must be ready to pay a significantly higher price for a renewable fuel on a fuel market with generally higher prices than today."

Carbon intensity

Market-based measures must be deployed alongside efficiency measures to enable the transition to low-carbon shipping fuels because low- and net-carbon-neutral maritime energy carriers are currently two-to-eight times more expensive than conventional bunkers. On the current trajectory, by 2050, the TCO of vessels that run on net-carbon-neutral marine fuels is likely to remain higher than that of fossil-powered vessels.

The carbon price that experts suggest would enable net-zero shipping by 2050 ranges from \$91 to \$230 per tonne of CO_2 , depending on the policy mechanism chosen. If a flat levy is applied, the average price of CO_2 would be at the higher end of the spectrum, whilst a lower average price could be achieved under a return-and-earmark scheme, whereby revenues collected are used to compensate early adopters of low-carbon shipping fuels.

Methanol has a higher energy density than other alternative shipping fuels, including liquefied natural gas (LNG), ammonia, and H_2 (when considering the size of storage tanks, secondary barriers, and cofferdams). However, methanol's energy density is lower than traditional shipping fuels. For example, MGO has an energy density of 36.6GJ/ m^3 compared to methanol's 15.8GJ/ m^3 . This means that storage and fuel tanks take about 2.4 times more space on a methanol-powered ship than on vessels running on MGO. This disadvantage is mitigated by frequent bunkering and by the fact that methanol can be stored in conventional fuel storage tanks (and even ballast tanks) on board a vessel, unlike fuels such as LNG and H_2 that require cryogenic storage and have a greater impact on the loss of cargo space.

Application, production & bunkering

Methanol is suitable for a wide range of shipping applications, including deep- and short-sea container ships, cruisers, inland waterway transport vessels, ferries, and general cargo vessels, **according to research by TNO**.

Methanol is available at over 120 ports worldwide and shipped globally. Today, there are more than 90 methanol production facilities around the globe with an aggregate ~120mt of capacity, fully capable of meeting today's ~100mt of methanol demand. Once produced, about a third of this methanol is shipped and traded globally as an industrial commodity, with the majority of methanol being consumed domestically or transported to neighbouring markets and hubs over land.

Methanol can be produced from biomass, bio-methane, renewable electricity plus CO_2 , and fossil sources such as natural gas and coal. Most methanol is currently produced from natural gas, which is used both as a feedstock and a process fuel. The carbon intensity of methanol varies depending on the feedstock and the production pathway used. Once well-to-propeller emissions are included, bio-methanol and e-methanol are among the shipping fuels with the lowest emissions. Methanol production is expected to increase five-fold to 500mt/year by 2050, with bio-methanol and e-methanol making up 80% of total production, **according to the International Renewable Energy Agency**.

Methanol bunkering is very similar to MGO or heavy fuel oil: it remains liquid at ambient temperature and pressure, which means that the same infrastructure used to store and bunker traditional marine fuels can be used for methanol (after minor and inexpensive modifications).

Safety guidelines and regulations for methanol use on board ships have already been developed. Methanol is toxic to humans, meaning crews must be appropriately trained to handle a methanol leak. Essentially, methanol is dealt with more like gasoline than diesel. Methanol is routinely shipped globally, and the marine industry has ample experience in handling it safely.

Case study #1: Waterfront Shipping

Operating from Vancouver, Waterfront Shipping is a maritime transport subsidiary of Methanex Corporation, the world's largest producer and supplier of methanol. Both companies have been pioneers in promoting methanol in shipping, and Waterfront Shipping, a global marine transportation firm specialising in bulk chemicals and clean petroleum products – along with MAN and its partners – have been at the forefront of efforts to develop a fleet based on the fuel that is being widely adopted by others today. The company has been operating methanol-fuelled vessels since 2016 and currently has 19 dual-fuel ships in its 30-strong fleet of deep-sea tankers, which are a decade old on average and range in size from 3,000 to 49,999 dwt.

The company reports that the shift to methanol fuel has been safe and uncomplicated, with hundreds of hours of bunkering during cargo loading. Since 2016, the company has also been bunkering at ports where it doesn't produce methanol, including Ulsan and Onsan in South Korea, Houston (US), Rotterdam (Netherlands), and Taicang (China).

In May 2021, the company also carried out the world's first barge-to-ship bunkering exercise at the Port of Rotterdam, using a conventional barge with minor modifications and a minimal incremental cost. The move saw a commercial bunker barge refuelling Waterfront Shipping's *Takaroa Sun*, a long-term chartered vessel of NYK's NYK Bulkship (Asia) with a two-stroke, dual-fuel engine (a development that accorded special mention in the Green Ship of the Year awards). Paul Hexter, President of Waterfront Shipping, said back then, "Waterfront Shipping has been operating methanol-fuelled ships for over five years now, accumulating over 100,000 combined operating hours – and has been bunkering methanol for its methanol dual-fuelled vessels via cargo shore pipelines near Methanex's production facilities. When appropriate safety measures are followed, we know that methanol is safe to ship, store, handle and bunker using procedures similar to conventional fuels. Today's methanol bunkering demonstration is another step in helping the shipping industry with its journey to reduce emissions."

Andre Nieman, TankMatch's CEO, also said on the occasion of bunkering *Takaroa Sun*, "We are increasingly hearing from vessel operators who want to understand their options for lowering their emissions and want a simple path to IMO compliance. Bunkering with methanol requires a similar level of risk assessment and safety

management as other conventional bunker fuels, and we found this process simple to manage and execute." Allard Castelein, the Port of Rotterdam's CEO, added, "Methanol has proven itself able to meet our very stringent safety standards [...]."

The nominal cost to equip Waterfront Shipping's vessels with methanol dual-fuel engines and associated fuel delivery systems has been relatively minor compared to the cost to equip ships with the ability to run on other alternative or novel fuel types, such as LNG, ammonia, or H₂.

Case study #2:

Stena Germanica's conversion

As one of the world's largest ferry companies, the Swedish Stena Line performs over 25k/year sailings. In 2015, it became the first ferry operator to launch a methanol-fuelled ro-pax, *Stena Germanica*, serving the Gothenburg-Kiel crossing in the Baltic.

The conversion was a joint project by Stena Line, the two port authorities, Methanex Corporation and the engine maker Wärtsilä. It involved installing a common fuel injection rail system used in marine diesel engines, with a pressure pump and double-walled, high-pressure pipes.

The compliance concern prompted the conversion following the EU 0.1% sulphur-in-fuel-content regulation coming into force across Northern Europe in 2015. According to Ron Gerlach, Technical Director at Stena Teknik, a technical resource for Stena's maritime-related business units, "We had to come up with a solution to reduce sulphur emissions from our vessels dramatically, and methanol was one of them. It reduces sulphur to almost zero, and that was one of the preferred choices for us at the time."

Stena Germanica's conversion was so ahead of its time that "regulations were very much written alongside the research and development phase," Gerlach underlines. Nevertheless, the conversion process was, Gerlach furthers, "relatively straightforward. We had to deal with some initial hiccups, but actually, it was very smooth."

The performance of the dual-engine vessel has been entirely satisfactory, he says. Emissions consist mostly of water vapour and CO₂. Sulphur and particulates have been reduced by 90% and nitrogen emissions by

60%. The project's main challenge has been finding methanol supplies at commercially viable rates. "It all comes down to commercial agreements with methanol suppliers," Gerlach underscores. "The key is, of course, to have a supply lined up and hubs where you bunker methanol. This is something that needs to be looked at jointly: where do you operate, and then where do you have your supply lined up?"

Although the commercial viability of methanol is improving, a growing issue may be where to acquire low-carbon fuel supplies. Low-carbon methanol can help vessel operators meet decarbonisation targets, but to do this, they need to know what version of fuel – grey, blue, or green – they can secure through commercial agreements. Furthermore, securing methanol supplies might be easier for ferry services because the routes, timetables, and bunker intervals are established well in advance. "When you enter the deep-sea shipping routes, that becomes more complicated," Gerlach notes.

Ultimately, Stena Line views methanol as an attractive transition fuel for low-carbon operations because the progression from grey to green supplies offers a smooth route to decarbonisation without requiring major changes to vessel design and operations. "Methanol still has carbon atoms in its structure, so we have to find ways, with carbon capture, to make it a truly sustainable fuel," Gerlach sums up.

Just before end-June 2023, Stena Line shared that it contracted Wärtsilä to convert an undisclosed number of ferries to use methanol as fuel. The conversions – scheduled to take place in 2025 – will include the fuel supply system and engine modifications, as well as integrating the new installations with the ships' existing systems. "As we continue to implement our strategy to decarbonise all our operations, we see methanol as a viable alternative fuel that will help us achieve this ambition. Wärtsilä has proven its capabilities to carry out the necessary conversions. This was shown eight years ago when they converted *Stena Germanica* to operate with methanol, and our experience from this ground-breaking innovation has been very positive," commented Ian Hampton, Stena Line's Chief Operating Officer Fleet and Government Affairs. ■



**METHANOL
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Founded in 1989, the Methanol Institute (MI) serves as the global trade association for the methanol industry representing the world's leading methanol producers, distributors and technology companies. The mission of MI is to serve and provide cost-effective value to its membership from its offices in Singapore, Washington, D.C., Brussels, Beijing and Delhi. The article is based on the organisation's **Marine Methanol Future-Proof Shipping Fuel** report. Visit www.methanol.org to see more.



Cracking the new culture code

by Heidi Heseltine, *Founder, Diversity Study Group (DSG)*

Diversity, equity, inclusion and belonging (DEIB) is not only ethically the right thing to do but also makes good commercial sense for maritime & shipping, an industry in urgent need of a wider talent pool. To attract – and retain – the best talent possible, it is critical that we continue to strive for more diverse, inclusive, and equitable workplaces where everyone can flourish and fulfil their potential. A DEIB workplace fuels progress, innovation and positive change, and considering the many challenges facing the transport & logistics sector, not least the ongoing energy transition, it becomes evident that these qualities are indispensable.

Future fuel supply chains will drive significant changes in bunkering locations and trade routes. Whether it's establishing new production facilities for green hydrogen in the Middle East or South America, developing bunkering infrastructure in existing ports, or creating future fuel hubs along established routes, new skills and roles will be required. Shipping companies, port operators, and bunker companies need to plan accordingly. A detailed and strategic assessment of their workforce requirements is essential.

The community – ashore and on board

Moreover, the industry must consider the relationship between shipping, marine fuel supply chains, and the communities in new locations. Beyond taking care of the environment sustainably, human sustainability must also be considered a priority. There is an excellent opportunity for companies to be good neighbours, positive contributors to the community, and welcomed presences.

However, achieving this requires careful planning and foresight. Organisations should consider how they can effectively engage with the community in new locations, recognising that it can also serve as a valuable talent pool for them to tap into. Investing in the local workforce and creating new jobs not only benefits human sustainability but also makes good business sense.

The onboard working culture and the crew's relationship with safety must be considered when deploying new fuels on the

global fleet. A diverse and inclusive environment is vital for promoting a yes-to-safety attitude, which holds for conventional bunkers and becomes even more critical with new fuels (like ammonia, classified as toxic).

Safety culture extends beyond mere compliance with training requirements and safety procedures, including a working culture on board where seafarers feel comfortable speaking up about concerns and hazards, an ethos of looking out for one another, and a kaizen-like workplace where everyone is empowered to share ideas for improvement.

Trusted data

Thankfully, the shipping industry is increasingly recognising the value of DEIB. **The results of DSG's 2022 Annual Review**, a survey of over 3,000 participants, show progress with women starting to break through in greater numbers below the C-suite level, where 17.9% of this review's respondents are women. Females also comprised 23.8% of heads of department, an increase from just 12.3% the previous year.

Furthermore, 85.4% of respondents agreed they could 'be themselves' at work, which is a positive sign. That said, individuals identifying as minority ethnic or LGBT+ expressed the least confidence in this regard, and only 49% of all respondents said they had access to DEIB training.

Employers are responsible for providing the necessary support and opportunities for development, and companies

should define the purpose of their DEIB strategy and its intended achievements. Shipping leaders need to ensure that DEIB strategies align with business objectives, are equipped and supported to lead inclusively, and that relevant data is collected, measured, and used to further define strategy and underpin progress.

Data plays a crucial role in measuring progress and setting goals for DEIB, the effective use of which supports the delivery of business strategies, highlights progress, identifies areas requiring attention, and responds to employee pressure for change. It can inform specific DEIB initiatives, identify and address bias, and track progress. It also aids in attracting and retaining talent and meeting the increasing demand for transparency from industry stakeholders. Trusted data is a fundamental aspect of transparency.

Measure first, then plan to act

We are also seeing some encouraging developments in DEIB initiatives being introduced in the maritime industry, with the concept becoming better understood as a tool for positive change.

Among the organisations that DSG works with, it has been gratifying to see a switch away from rushing to act in favour of taking the time to take stock of where they stand and then ensuring those insights inform the development of a DEIB strategy. This more robust, sustainable approach stands a far better prospect of yielding the desired results.



Photo: Diversity Study Group

Instead of generic ‘off the shelf’ DEIB programmes, there is a focus on tailoring initiatives to individuals and businesses, particularly when integrated into an operational context that makes it tangible to each person’s responsibilities. This approach increases the likelihood of buy-in from individuals.

There is also a promising rise in the focus on meaningful DEIB programmes for seafarers, along with growing acknowledgement of the benefits they bring. We are, too, witnessing greater emphasis on implementing DEIB programmes for seafarers on board, aiming to bring about substantial improvements in their experience and overall quality of work at sea.

Achieving long-term and sustainable change requires cultural transformation. Organisations must identify the factors that drive change within their specific context and tailor strategies to make DEIB relevant to each department, business line, and office. Establishing zero tolerance for unacceptable behaviour and fostering a culture of accountability are crucial elements in creating safe and inclusive environments.

The Diversity Study Group plays a pivotal role in supporting the maritime and shipping industry on its journey toward greater diversity and inclusion. DSG

facilitates open dialogue and the exchange of best practices through benchmarking, resource sharing, consulting, and networking. By offering services ranging from DEIB strategy development to advisory support tailored to meet the specific needs of organisations, DSG empowers its members to implement meaningful change and communicate progress effectively through data collection and analysis. Collaborating with industry leaders and initiatives like the All Aboard Alliance and the Global Maritime Forum, DSG strives to bring about change at all levels.

In June 2023, **DSG launched its new DEI Maritime Masterclass Series**, aimed at helping maritime professionals achieve their DEIB ambitions. The first masterclass delved into the importance of DEIB for organisations and individuals, the value it can bring, and the steps required to make it a sustainable commitment. Participants benefited from interactive sessions and gained insights from experts with experience across various sectors. Following the masterclass, attendees

receive one-to-one executive coaching to discuss implementation strategies and address challenges. The masterclass series is part of DSG’s ongoing efforts to support the maritime industry in adopting global DEIB best practices while tailoring actions to meet the sector’s specific needs. By providing in-depth coaching and guidance, DSG aims to empower maritime professionals to turn their DEIB intentions into tangible actions and meaningful change within their organisations.

Widening & deepening the pool

While shipping organisations may compete for talent, it is important to recognise that collaboration on diversity initiatives benefits the entire industry. We can create a wider and deeper talent pool by sharing experiences, best practices, and lessons learned.

Collaboration enhances the industry’s reputation and lays the foundation for a diverse and skilled workforce. Let us inspire one another, learning from successes and failures to accelerate progress in DEIB! □



The Diversity Study Group is a global diversity, equity, inclusion, and belonging organisation that provides consulting, training, benchmarking, and networking for all operating within the shipping and maritime community, ashore and at sea. Visit diversitystudygroup.com to discover more.



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The Baltic general cargo and passenger markets in 2022

by Marek Błuś and Przemysław Myszk

It is probably owing to the Russian war of aggression against Ukraine that the regional general cargo traffic (315.94mt) was dethroned volume-wise by liquid bulk (337.62mt) last year. The decrease could be felt across the board, though to varying degrees. The ro-ro & ferry cargo part contracted the least (-3.6% year-on-year to 153.29mt), while containerised freight – expectedly the most (-16.8% yoy to 83.75mt). With its -3.9% yoy to 78.89mt, the break-bulk market was closer in dynamics to the former. Counted in units, the 2022 Baltic ro-ro traffic was flat (-0.2% yoy to 11.5m), whereas boxes here, too, suffered from a double-digit dwindling (-11.2% yoy to a notch below 10.1m TEUs). Naturally, the heaviest ‘container punches’ were dealt to Russian Baltic ports. Interestingly, the country’s intra-Baltic intercostal cabotage traffic of wheeled cargo benefited from such a situation (but here, Russia could count on its own modern ro-ro tonnage to do the job). Overall, the future truck & trailer traffic to, from & within the Baltic (with a pinch of railcars) will most likely be driven by economic trends rather than the ongoing war. On the other hand, container trade seems a much more ‘political’ likewise ‘reputational’ affair – that sanctions directly impact St. Petersburg and Moscow’s consumption/production. At the same time, carriers (some of them at least) continue to write trading with Russia off, not wanting to harm their businesses elsewhere. In the meantime, passenger traffic advanced by a wholesome 54.6% yoy to 94.7m. The market is still behind the pre-pandemic level of almost 120m, and certain companies had to reorganise their fleets substantially (to put it mildly). That said, spanking-new tonnage has recently caught the wave, leaving potential travellers with even fewer arguments against boarding one of the Baltic stunners. And, as always, you’ll find more numbers to crunch on in our [Baltic Yearbook](#), including details on particular seaports.

Tab. 1. Baltic Sea region's (BSR) ports' total cargo turnover in 2021-2022 (thousand tonnes)¹

Nº	Country	2022	2021	yoy	Share 2022	Share 2021	Share 2022-2021 [percentage points; pp]
1	Russia	245,500	258,580	-5.1%	26.82%	28.32%	-1.51pp
2	Sweden	168,251	168,181	+/-0%	18.38%	18.42%	-0.04pp
3	Poland	118,972	96,680	+23.1%	13.00%	10.59%	+2.41pp
4	Finland	106,566	103,727	+2.7%	11.64%	11.36%	+0.28pp
5	Denmark	97,196	94,255	+3.1%	10.62%	10.32%	+0.29pp
6	Germany	57,080	60,626	-5.8%	6.23%	6.64%	-0.41pp
7	Latvia	48,078	41,731	+15.2%	5.25%	4.57%	+0.68pp
8	Lithuania	40,537	49,751	-18.5%	4.43%	5.45%	-1.02pp
9	Estonia	33,339	39,404	-15.4%	3.64%	4.32%	-0.67pp
Total		915,519	912,935	+0.3%			

¹ All tabs.: only Russian and German Baltic ports; all Danish ports; Russian ports – estimated

Tab. 2. BSR's ports' general cargo turnover in 2021-2022 (thousand tonnes)

Nº	Country	2022	2021	yoy	Share 2022	Share 2021	Share 2022-2021
1	Sweden	83,604	83,652	-0.1%	26.46%	24.48%	+1.99pp
2	Finland	44,666	44,207	+1.0%	14.14%	12.93%	+1.20pp
3	Denmark	40,882	39,720	+2.9%	12.94%	11.62%	+1.32pp
4	Germany	40,656	43,297	-6.1%	12.87%	12.67%	+0.20pp
5	Poland	38,453	38,247	+0.5%	12.17%	11.19%	+0.98pp
6	Russia	26,400	48,850	-46.0%	8.36%	14.29%	-5.94pp
7	Lithuania	13,926	12,462	+11.7%	4.41%	3.65%	+0.76pp
8	Latvia	13,791	13,352	+3.3%	4.37%	3.91%	+0.46pp
9	Estonia	13,559	17,984	-24.6%	4.29%	5.26%	-0.97pp
Total		315,937	341,771	-7.6%			
General cargo's share of total Baltic		34.51%	37.44%	-2.93pp			

Tab. 3. BSR's ports' unitised freight (containerised and wheeled) turnover in 2021-2022 (thousand tonnes)

Nº	Country	2022	2021	yoy	Share 2022	Share 2021	Share 2022-2021
1	Sweden	62,206	64,269	-3.2%	26.24%	24.75%	+1.49pp
2	Denmark	35,662	35,837	-0.5%	15.04%	13.80%	+1.24pp
3	Germany	34,389	36,797	-6.5%	14.51%	14.17%	+0.34pp
4	Poland	32,475	33,147	-2.0%	13.70%	12.76%	+0.94pp
6	Finland	28,567	29,194	-2.1%	12.05%	11.24%	+0.81pp
5	Russia	14,100	32,216	-56.2%	5.95%	12.41%	-6.46pp
7	Lithuania	11,516	10,582	+8.8%	4.86%	4.07%	+0.78pp
8	Estonia	9,759	9,736	+0.2%	4.12%	3.75%	+0.37pp
9	Latvia	8,362	7,910	+5.7%	3.53%	3.05%	+0.48pp
Total		237,036	259,688	-8.7%			
Share of general cargo		75.03%	75.98%	-0.96pp			
Share of total Baltic		25.89%	28.45%	-2.55pp			



Photo: Jarno Koivula/Port of HaminaKotka

Tab. 4. BSR's ports' wheeled freight (ro-ro & ferry cargo) turnover in 2021-2022 (thousand tonnes)

Nº	Country	2022	2021	yoy	Share 2022	Share 2021	Share 2022-2021
1	Sweden	48,208	50,078	-3.7%	31.45%	31.49%	-0.04pp
2	Germany	32,788	34,536	-5.1%	21.39%	21.72%	-0.33pp
3	Denmark	27,484	27,856	-1.3%	17.93%	17.52%	+0.41pp
4	Finland	17,367	17,780	-2.3%	11.33%	11.18%	+0.15pp
5	Poland	9,720	10,032	-3.1%	6.34%	6.31%	+0.03pp
6	Estonia	7,545	7,542	+/-0%	4.92%	4.74%	+0.18pp
7	Latvia	3,883	3,533	+9.9%	2.53%	2.22%	+0.31pp
8	Lithuania	3,300	3,940	-16.2%	2.15%	2.48%	-0.32pp
9	Russia	3,000	3,725	-19.5%	1.96%	2.34%	-0.39pp
Total		153,295	159,022	-3.6%			
Share of unitised		64.67%	61.24%	+3.44pp			
Share of general cargo		48.52%	46.53%	+1.99pp			
Share of total Baltic		16.74%	17.42%	-0.67pp			

Tab. 5. BSR's ports' containerised freight turnover in 2021-2022 (thousand tonnes)

Nº	Country	2022	2021	yoy	Share 2022	Share 2021	Share 2022-2021
1	Poland	22,755	23,115	-1.6%	27.17%	22.96%	+4.21pp
2	Sweden	13,998	14,191	-1.4%	16.71%	14.10%	+2.62pp
3	Finland	11,210	11,414	-1.8%	13.38%	11.34%	+2.05pp
4	Russia	11,100	28,491	-61.0%	13.25%	28.30%	-15.05pp
5	Lithuania	8,216	6,642	+23.7%	9.81%	6.60%	+3.21pp
6	Denmark	8,178	7,981	+2.5%	9.76%	7.93%	+1.84pp
7	Latvia	4,479	4,377	+2.3%	5.35%	4.35%	+1.00pp
8	Estonia	2,214	2,194	+0.9%	2.64%	2.18%	+0.46pp
9	Germany	1,601	2,261	-29.2%	1.91%	2.25%	-0.33pp
Total		83,751	100,666	-16.8%			
Share of unitised		35.33%	38.76%	-3.43pp			
Share of general cargo		26.51%	29.45%	-2.95pp			
Share of total Baltic		9.15%	11.03%	-1.88pp			



Photo: Euroports Finland

Tab. 6. BSR's ports' break-bulk turnover in 2021-2022 (thousand tonnes)

Nº	Country	2022	2021	yoy	Share 2022	Share 2021	Share 2022-2021
1	Sweden	21,398	19,383	+10.4%	27.12%	23.61%	+3.51pp
2	Finland	16,089	15,013	+7.2%	20.39%	18.29%	+2.10pp
3	Russia	12,300	16,639	-26.1%	15.59%	20.27%	-4.68pp
4	Germany	6,270	6,500	-3.5%	7.95%	7.92%	+0.03pp
5	Poland	5,978	5,100	+17.2%	7.58%	6.21%	+1.36pp
6	Latvia	5,429	5,442	-0.2%	6.88%	6.63%	+0.25pp
7	Denmark	5,220	3,883	+34.4%	6.62%	4.73%	+1.89pp
8	Estonia	3,800	8,248	-53.9%	4.82%	10.05%	-5.23pp
9	Lithuania	2,410	1,880	+28.2%	3.05%	2.29%	+0.76pp
Total		78,894	82,088	-3.9%			
Share of general cargo		24.97%	24.02%	+0.95pp			
Share of total Baltic		8.62%	8.99%	-0.37pp			

Tab. 7. BSR's ports' ro-ro cargo units traffic in 2021-2022 (thousand units)

Nº	Country	2022	2021	yoy	Share 2022	Share 2021	Share 2022-2021
1	Sweden	3,216	3,310	-2.8%	27.91%	28.67%	-0.76pp
2	Denmark	2,475	2,406	+2.9%	21.48%	20.84%	+0.64pp
3	Germany	2,180	2,160	+0.9%	18.92%	18.71%	+0.21pp
4	Finland	1,272	1,255	+1.4%	11.04%	10.87%	+0.17pp
5	Estonia	997	967	+3.1%	8.65%	8.38%	+0.28pp
6	Poland	800	777	+3.0%	6.94%	6.73%	+0.21pp
7	Lithuania	223	263	-15.2%	1.94%	2.28%	-0.34pp
8	Russia ¹	200	248	-19.4%	1.74%	2.15%	-0.41pp
9	Latvia	161	160	+0.6%	1.40%	1.39%	+0.01pp
Total		11,524	11,546	-0.2%			

¹ Ro-ro traffic estimated by counting 15 tonnes per one cargo unit



Photo: Port of Rauma

Tab. 8. BSR's ports' container traffic in 2021-2022 (thousand TEUs)

Nº	Country	2022	2021	yoy	Share 2022	Share 2021	Share 2021-share 2020
1	Poland	3,062	3,185	-3.9%	30.33%	28.00%	+2.33pp
2	Sweden	1,633	1,639	-0.4%	16.18%	14.41%	+1.77pp
3	Finland	1,463	1,415	+3.4%	14.49%	12.44%	+2.05pp
4	Denmark	1,079	1,061	+1.7%	10.69%	9.33%	+1.36pp
5	Russia	1,050	2,509	-58.2%	10.40%	22.06%	-11.66pp
6	Lithuania	1,048	667	+57.1%	10.38%	5.86%	+4.52pp
7	Latvia	326	435	-25.1%	3.23%	3.82%	-0.60pp
8	Estonia	280	227	+23.3%	2.77%	2.00%	+0.78pp
9	Germany	153	235	-34.9%	1.52%	2.1%	-0.55pp
Total		10,094	11,373	-11.2%			

Tab. 9. BSR's ports' Universal Cargo Unit (UCU) traffic in 2021-2022 (thousand UCUs)¹

Nº	Country	UCU						TEUs		Ro-ro cargo units		Ro-ro cargo units to TEU [x1.5 ratio]	
		2022	2021	yoy	Share 2022	Share 2021	Share 2022-2021	2022	2021	2022	2021	2022	2021
1	Sweden	6,457	6,604	-2.2%	23.58%	23.02%	+0.57pp	1,633	1,639	3,216	3,310	4,824	4,965
2	Denmark	4,791.5	4,670	+2.6%	17.50%	16.28%	+1.22pp	1,079	1,061	2,475	2,406	3,712.5	3,609
3	Poland	4,262	4,350.5	-2.0%	15.57%	15.16%	+0.40pp	3,062	3,185	800	777	1,200	1,165.5
4	Germany	3,423	3,475	-1.5%	12.50%	12.11%	+0.39pp	153	235	2,180	2,160	3,270	3,240
5	Finland	3,371	3,297.5	+2.2%	12.31%	11.49%	+0.82pp	1,463	1,415	1,272	1,255	1,908	1,882.5
6	Estonia	1,775.5	1,677.5	+5.8%	6.48%	5.85%	+0.64pp	280	227	997	967	1,495.5	1,450.5
7	Lithuania	1,382.5	1,061.5	+30.2%	5.05%	3.70%	+1.35pp	1,048	667	223	263	334.5	394.5
8	Russia	1,350	2,881	-53.1%	4.93%	10.04%	-5.11pp	1,050	2,509	200	248	300	372
9	Latvia	567.5	675	-15.9%	2.07%	2.35%	-0.28pp	326	435	161	160	241.5	240
Total		27,380	28,692	-4.6%									

¹ Russian ports' ro-ro traffic estimated by counting 15 tonnes per one cargo unit

Tab. 10. BSR's ports' passenger traffic in 2021-2022 (thousand ferry & cruise travellers)

Nº	Country	2022	2021	yoy	Share 2022	Share 2021	Share 2022-2021
1	Denmark	30,726	22,369	+37.4%	32.43%	36.50%	-4.07pp
2	Sweden	25,178	17,168	+46.7%	26.58%	28.02%	-1.44pp
3	Finland	13,800	7,172	+92.4%	14.57%	11.70%	+2.86pp
4	Estonia	11,729	8,061	+45.5%	12.38%	13.16%	-0.77pp
5	Germany	10,700	4,181	+156%	11.29%	6.82%	+4.47pp
6	Poland	1,815	1,764	+2.9%	1.92%	2.88%	-0.96pp
7	Latvia	450	250	+80.0%	0.48%	0.41%	+0.07pp
8	Lithuania	337	312	+8.0%	0.36%	0.51%	-0.15pp
Total		94,735	61,277	+54.6%			
Russia		—	—				



Photo: Viking Line

Proactive. Flexible. Resilient!

Three days, five sessions, and multiple expert speakers who will dissect topical affairs for the port industry in the Baltic Sea region (BSR) – that's the upcoming (6-8 September) Baltic Ports Conference 2023 in a nutshell. It will be the perfect time to assess the current situation of the regional ports and to predict their future in the context of trade & infrastructure development, geopolitics, climate changes, and technological improvements. Book the date in your calendar now and join us in southern Sweden for the biggest annual event held by the Baltic Ports Organization (BPO) together with the Port of Ystad.



**BALTIC
PORTS
CONFERENCE**

6-8 September 2023

Ystad, Sweden



Photo: Port of Ystad



Photos: Canva



Photo: Municipality of Ystad

The season of industry events is open, but the most important BPO meeting is still ahead. Every year, we meet to talk about pivotal issues for the port sector and exchange experiences. “Next port of call: Ystad! The BPO Conference 2023 is hosted proudly by our port and the beautiful city of Ystad. We greet you cordially welcome to the most important event this year. We will be there – will you?” invites Björn Boström, the Port of Ystad’s Managing Director.

Leaving no stone unturned

Our annual gathering will begin with a welcoming reception on 6 September. This is the best introduction to the following two days, packed with presentations, discussion panels, and networking opportunities.

We live in very dynamic times, characterised by topics that cannot go unaddressed. The growing strategic importance of the Baltic is already a fact. How will this affect the security and future of the regional logistics chains in the context of recent geopolitical turmoil? How to develop a fit-for-future port in these circumstances? What awaits the region’s staple market: the ferry & ro-ro businesses? These are just some of the questions our specialists will tackle during the second day of the meeting. To let the steam off after such an insight-hot agenda, BPO and the Port of Ystad will invite the conference’s participants to an evening cocktail (and a fantastic adventure!) at the Ystad Studio Center.

We will focus on climate change and

financing critical infrastructure on the third day. The latter will include the electrifying topic of port equipment electrification and onshore power supply. A port tour will top the conference. Overall, the Baltic Ports Conference’s sessions will be driven by the topics of trade in Europe and the BSR: today & tomorrow; adapting to change from the ports’ POV; the future of the ferry & ro-ro markets in the BSR; the impact of climate change on port development; and electrification as a key tool for combating climate change.

Access the agenda & register at www.balticportsconference.com. Also, don’t hesitate to touch base with the BPO Secretariat for more information at bpo.office@actiaforum.pl

Geopolitics and climate regulations discussed at BPO's Lunch Debate in the European Parliament

The end of May saw the gathering of the transport industry community for a debate in Brussels on the impact of the geopolitical situation in the Baltic as well as to discuss the status of the legislation process of the Fit for 55 package. Andris Ameriks, European Parliament Member from Latvia and Vice-Chair of the TRAN Committee, hosted the meeting with the presence of the Baltic Ports Organization's (BPO) Board, the European Sea Port Organisation (ESPO), the European Community Shipowners' Associations and representatives of the European Commission, European Parliament and Baltic ports.

Ameriks presented the recent situation in the Baltic Sea region caused by the Russian war against Ukraine, with the aggression impacting much of the political discussion in the European Parliament last year. He underlined the need for a steady consultation between politicians in Brussels and industry organisations, including those representing ports.

Kimmo Naski, the Port of HaminaKotka's CEO chairing BPO, highlighted that the ongoing war in Ukraine has left and will continue to leave a terrible mark on the lives of those who fell victim to its tragedy. The sanctions on energy imports from Russia, the destruction of, among others, logistics infrastructure, disruption in trade lanes, and associated security issues – all this and more will have long-lasting consequences for all industries, including the port sector.

He also underlined, "Challenges are many, and they are not limited only to the geopolitical shifts. While ports will undoubtedly have a great role to play in securing the necessary energy supply for

the European Union, port authorities will have many difficult decisions to make in the upcoming years. Combating climate change and emission reduction are some of perhaps the greatest and most impactful hurdles the maritime transport sector will have to overcome. Meeting the goals set by policymakers will require careful planning and numerous investments."

Isabelle Ryckbost, ESPO's Secretary-General, underscored the need to understand the importance of EU ports. They are energy hubs, and their significance can no longer be measured in tonnes, TEUs, or ship calls. Undeniably, they also have a central role in Europe's green energy transition, a progression that will require substantial infrastructure investments if the EU's engine is to continue running.

Moreover, the Alternative Fuels Infrastructure Regulation (AFIR) proposal was discussed. Providing onshore power supply by ports is more complicated than putting a container with the necessary equipment on a quay. Grid capacity, energy prices, taxation, and the production mix significantly impact the

investment decision and its long-term economic & environmental feasibility. Providing cold ironing that makes sense must involve stakeholders from across the entire value chain, not only ports and shipping lines. The Lunch Debate also focused on including maritime transport in the EU Emission Trading System, particularly the risk of re-routing transport services at the expense of the block's ports.

Bogdan Ołdakowski, BPO's Secretary-General, summarised the meeting, "Ports proved last year how important they are for Baltic countries and the European economy in energy security supply to the whole EU. Baltic ports also support EU climate policies aiming to reduce greenhouse gas emissions. At the same time, there is a need for logic and common sense when implementing policies into regulations. A better understanding of the role of ports in the entire energy transition is necessary. As the future port investment needs are huge, for example, taking into account the energy transition alone, increasing the EU budget for ports in CEF-3 is a must." ■



BPO welcomes new members!

On 24 May 2023, during a board meeting of the Baltic Ports Organization (BPO), Nortal and RightShip became its newest members, creating an even stronger community of already more than 50 partners. Welcome on board!

Nortal

Nortal is a trusted strategic partner for healthcare institutions, governments, leading businesses, ports, and Fortune 500 companies. With 23 offices in Europe, the Middle East, and the US, the company is close to its customers and backed by a vast global talent pool. Nortal's seamless teams help customers transform and future-proof

their organisations by building world-changing solutions with the right technologies. Head to nortal.com to learn more.

"We firmly believe in the transformative power of collaboration. By actively contributing to the development of ports in the Baltic region, we aim to foster an environment that supports improved

operational efficiency, sustainable practices, and unparalleled customer experiences. We are honoured to be a part of the enlightening discussions and exchange of ideas taking place within the Baltic Ports Organization," commented Ats Albre, CEO of Nortal Estonia & Member of the Nortal Global Leadership Team.

RightShip

RightShip is the world's biggest third-party maritime due diligence organisation, providing expertise in global safety, sustainability, and social responsibility practices. Our organisation was built to respond to a pressing need for operational improvements in the maritime industry. We provide comprehensive due diligence services so you can make informed business decisions. We also help industry partners work towards excellence in safety, sustainability, and social responsibility practices on shore and at sea. Our team believes a successful voyage commercially benefits the entire supply chain. The best practice journey meets the highest safety standards, is good for the environment

and ensures seafarers are supported. Discover more at rightship.com.

Andrew Roberts, the company's Head of EMEA, said about joining BPO, "RightShip are delighted to join the Baltic Ports Organisation as a Friendship Member. The global port network is a vital component in world maritime trade, acting as vital arteries for trade flows, creating local jobs and sustaining local and global economies. Ports also act as a key enabler to improving safety, environmental and social standards across the maritime and transportation industry and are critical to assist the transition to a more environmentally acceptable maritime transportation industry to respond to the

climate emergency. RightShip works very closely to support organisations across the maritime value chain, including ports, and the opportunity to join the Baltic Ports Organisation will allow us to collaborate and work closely with the innovative member ports of the Organisation to surface data, increase awareness, and improve standards in pursuit of BPO's mission to increase sustainable development of the maritime transport and port industry in the Baltic Sea region. We look forward to the opportunity to actively participate in relevant working groups of the BPO, complementing the existing groups to assist in successfully driving meaningful change." ■

Forge ahead

by Martin Isik, CCO, FERNRIDE

Terminal operators, positioned at the critical junctions of international trade, play a pivotal role in facilitating global commerce. They work behind the scenes to ensure smooth and efficient movement of goods across continents. As the scale and complexity of global trade continue to escalate, operators are tasked with a demanding challenge: to increase efficiency, reduce downtime and ensure safety, all while maintaining robust and reliable operations.

This case study article explores how HHLA tackled this challenge head-on by embracing innovation and technology, working with FERNRIDE, a company offering automation solutions for yard trucking. Therefore, FERNRIDE and HHLA TK Estonia, a subsidiary of HHLA that operates a container terminal in the Port of Tallinn's Muuga Harbour, started a project to validate and integrate the solution of FERNRIDE at the facility.

The opportunity

As global trade expands and evolves, container terminal operators must adapt and innovate. As one of Europe's largest operators, HHLA is no stranger to such demands. With vessel size increases, freight rate fluctuations, and ever-evolving customer expectations, the company has consistently demonstrated resilience in facing these challenges, focusing on maintaining efficiency, safety, and customer satisfaction.

One of the most pressing challenges HHLA had to tackle was the ever-increasing size of container carriers serving global trade. Over the past decade, the average size of these vessels has more than doubled, with mega-ships capable of carrying 20,000 TEUs becoming increasingly common. Such colossal vessels profoundly impact terminal operations because un- and loading them requires significantly more time than their smaller counterparts.

This increased berth time could lead to a domino effect on the entire operation, causing delays and congestion that ripple

through the terminal and disrupt the carefully orchestrated flow of goods. The congestion doesn't only mean a few hours of setback: a ship may miss its tidal window in some ports, forcing it to wait for additional 12 hours to leave the harbour.

Balancing these escalating demands with the need to maintain safety standards and profitability is a delicate act. Terminal operators are expected to be flexible, agile, and efficient. Some see it as an opportunity to give transformative innovation a play.

The leap

HHLA strategically decided to develop an automated mixed horizontal transport system to increase efficiency and throughput. This forward-thinking approach brought them together with us, a technology company at the forefront of human-assisted autonomous trucking solutions. FERNRIDE's automation technology will enable a single remote operator to manage up to four trucks concurrently. This is a tangible improvement from the traditional 1:1 driver-truck ratio, easing the trucker shortage issue prevalent in the logistics industry.

To validate the solution in the area of a container terminal, FERNRIDE and HHLA TK Estonia, the country's largest 'box handler,' decided to start a site project in Tallinn. As a digital-oriented terminal, HHLA TK Estonia is open to testing innovative solutions. The decision to incorporate electric, autonomous trucking into their operations was a leap towards a new era of terminal operations.

The pilot involved fitting a terminal tractor with sensors and cameras to be

remote-controlled via mobile networks. Teleoperators at a computer workstation resembling a vehicle cockpit took remote control of the machinery, receiving and sending targeted commands online by controlling the gas pedal, brakes, steering wheel, and joystick.

The pilot started in early 2023 to determine the technology's operational reliability in automated container handling and to validate the technology's viability for future business opportunities. FERNRIDE's solutions were implemented seamlessly into existing processes, ensuring no interruptions or incidents occurred during the transition. This smooth integration was critical in maintaining uptime and delivering consistent customer service throughout the implementation phase.

Safety remained a non-negotiable priority for HHLA TK Estonia despite the drive for increased efficiency. FERNRIDE's technology helps in reducing the risks of on-site accidents. In the operations we managed, the accident and injury rates were remarkably maintained at 0%. This achievement underscored the impact autonomous technology could have on safety, redefining what is achievable in the industry.

Half a year later, the project partners ticked off the first phase, agreeing to proceed to the next one. With the start of the second phase, autonomous driving will be integrated into operational processes. For this purpose, an additional automated yard truck will be deployed at the terminal for container transport. The goal is to achieve a degree of autonomy of at least 80-90%.



Photos: FERNRIDE



A defining testament to FERNRIDE's success at HHLA TK Estonia was the perfect net promoter score of 10/10 awarded by the port. It is proof that FERNRIDE not only met but exceeded the goals of FERNRIDE in the project with HHLA TK Estonia. Riia Sillave, CEO of HHLA TK Estonia, said, "The joint project with FERNRIDE enabled us to test the system directly in HHLA TK Estonia's operations. The implementation has proven itself in daily terminal operations so that the proof of concept could already be achieved at an early stage. We really enjoy working together with the FERNRIDE team, which always shows a high level of competence and professionalism. We will now continue the good cooperation with FERNRIDE and work out together how autonomous driving can work in the future. In doing so, we are pursuing the goal of making workflows at our international terminals future-oriented and sustainable."

The new benchmark

The successful project of HHLA TK Estonia and FERNRIDE is more than just a success story. It is an inspiring tale of how embracing innovation and technology can redefine the boundaries of an industry.

Adopting FERNRIDE's technology signals a significant shift in the terminal operations landscape. HHLA TK Estonia has paved the way for others in the industry by demonstrating the immense potential and benefits of autonomous trucking.

The journey of HHLA TK Estonia is a telling example of the power of innovation in addressing the modern challenges of terminal operations. It underscores the transformative potential of technology and

the value of embracing change in a dynamic industry landscape. In the face of growing global trade and the escalating demands of terminal operations, HHLA has demonstrated that the solution isn't merely to increase effort but to optimise work strategies. By utilising autonomous technology, they have contributed to industry transformation and established a new benchmark for terminal operators across the globe.

This case study conveys the forward-thinking approach and determined spirit of HHLA and its subsidiary HHLA TK Estonia. As they navigate their way in the terminal operations landscape, one aspect is evident: they are not just keeping up with the industry's pace but forging ahead. ■

FERNRIDE FERNRIDE offers scalable automation solutions for yard trucking that increase productivity, promote sustainability, and improve worker safety. The company employs a human-assisted automation approach, which allows for remote takeovers of electric trucks when necessary. This ensures seamless integration and reliable operations for logistics operators. Head to www.fernride.com to discover more.



Transforming logistics and smart ports in Europe

by Dr Eusebiu Catana, Senior Manager, ERTICO

The EU-funded 5G-LOGINNOV project is creating new opportunities for LOGistics value chain INNOVation by harnessing the power of 5G in the ports domain. This is all thanks to an innovative framework for integrating and validating connected and automated mobility (CAM) technologies related to Industry 4.0. 5G-LOGINNOV supports the port application case by implementing 5G technological blocks. A new generation of 5G terminals for CAM, new types of Internet of Things (IoT) 5G devices, data analytics, next-generation traffic management, and emerging 5G networks are grouped to allow city ports to handle current and future capacity and traffic, increase efficiency, and manage environmental challenges.

Innovation in Living Labs

As a catalyst for market opportunities built on 5G core technologies in the logistics domain, 5G-LOGINNOV is set to be a pillar of economic development and business innovation, particularly by promoting local high-tech SMEs and start-ups. The project's three Living Labs – in the European ports of Hamburg, Athens and Koper – will be the facilitators and ambassadors opening up doors for innovation in ports, covering both deep sea harbours in

the mega vessel era (Hamburg, Athens) and medium-sized seaports with limited investment funds for 5G (Koper).

5G-LOGINNOV is trialling 11 clusters of use cases beyond technology readiness level 7 (system prototype demonstration in operational environment) in its three Living Labs based on 5G technological blocks, including the Management and Network Orchestration platform (MANO), Device Management Platform

Ecosystem, Optimal Selection of Yard Trucks, Optimal Surveillance Cameras and Video Analytics, Automation for Ports, Port Control, Logistics and Remote Automation, Mission Critical Communications in Ports, Predictive Maintenance, Floating Truck & Emission Data, 5G GLOSA & Automated Truck Platooning (ATP), Dynamic Control Loop for Environment Sensitive Traffic Management Actions (DCET).

Trialling future reality

Strict security of the cloud infrastructure system is a crucial requirement for all ports. Smart routing of the port-related network services and applications traffic directly to the port operations support systems is made possible by extending the Mobile Network Operator (MNO) infrastructure with Multi-access Edge Computing (MEC) capabilities.

In addition to commercial MNO services, the private 5G mobile network with dedicated cloud infrastructure is tailored to the needs of port operations and targeted applications.

In 5G-LOGINNOV, a 5G edge processing node is implemented to support ship-to-shore (STS) crane operations. Massive 4K (uplink/downlink) live video transmissions

towards the (far-)edge processing nodes serve as the input for machine learning (ML) models delivering the envisioned services. Such uplink-data-intensive applications call for enhanced capacity that cannot be served with legacy LTE networks. Hence, the Enhanced Mobile Broadband (eMBB) service of 5G technology is needed.

Making port operations safer

Low-latency transmission and eMBB capabilities of 5G are used in combination with artificial intelligence (AI) to set up

a rapid alert delivery system for collision avoidance between yard trucks and people. A 4K camera is mounted on the yard truck,

and a 5G modem is employed to establish cellular communication within the port. The camera is oriented to the driver's

potential blind spot and transmits 4K video streams (uplink) to a GPU-enabled edge computing device in real time. An AI-enabled service deployed in the edge processing node receives and processes the video feed. If a person is detected, the driver is alerted with live annotated 4K video streams (downlink) in order to increase their situational awareness.

Frequent incidents involving boom, gantry or stack collisions, along with the presence of stevedoring personnel in port areas, generate considerable risks. To minimise the risk of serious bodily injuries, 5G-IoT devices installed in selected areas, equipped with a high-resolution camera, perform video analytics tasks locally. Using innovative ML techniques,

with the help of large 4K surveillance video streams facilitated by 5G eMBB service, quick and accurate human presence detection is made possible. This use case increases safety measures in the employee workplace, opening up opportunities to optimise the use of human resources in different port operations, e.g., by reducing the patrol frequency at the risk areas.

Looking into the future

A key concern of almost any port is storing and managing bulky assets, such as spare/repair parts, especially when operating close to maximum annual capacity. In 5G-LOGINNOV, end-to-end asset performance monitoring in all phases of daily port operations is enabled by telemetry data transmitted over 5G from several data sources on board yard trucks.

The resulting predictive maintenance algorithm is used to anticipate possible breakdowns, thereby reducing downtime for repairs, increasing the service life of yard vehicles, and optimising the stock of spare parts and the overall operational efficiency. The predictive maintenance tool captures historical and recent status data for the assets in question (schedule of purchases, storage of parts, proactive maintenance), for the ML algorithm, with 5G technology

providing a flexible, reliable and predictable environment to remotely keep track of the connected assets on a real-time basis.

Industrial cameras installed on operating port machinery (STS cranes) capture and transfer Ultra-High Definition (UHD) streams to the cloud-based video analytics system. Container markers are identified, and structural damage is detected by using advanced AI/ML-based video processing techniques.

To boost overall port operation, coordination with inbound external trucks is also foreseen in order to expedite container handover operations (transition of containers from external to internal trucks and vice versa), provide an estimated time of arrivals/departures, etc.

Thanks to the new advanced capabilities of 5G relating to wireless connectivity

and Core Network agility, 5G-LOGINNOV ports will not only significantly optimise their operations but also minimise their environmental footprint on the city and the disturbance to the local population.

5G-LOGINNOV is already looking ahead to trialling B5G (beyond 5G) and 6G. Although they are still at an early stage of development, some B5G/6G candidate technologies – such as AI-Enabled Networks, Massive Multiple Input Multiple Output (MIMO), Dynamic Spectrum Access, Network Slicing, Edge Computing, Integrated Satellite-Terrestrial Networks, Quantum Communication, Massive IoT Connectivity, Augmented Reality (AR) and Virtual Reality (VR), Energy-Efficient Communication and Environmental Monitoring – could play a strong role in extending the impact of 5G-LOGINNOV.

Market approach

The 5G-LOGINNOV project has adopted a comprehensive market approach to ensure the effective take-up of its innovative solutions. The project emphasises collaborative business models and future common initiatives by recognising the importance of collaboration among

stakeholders for advancing innovation and data sharing.

To this end, 5G-LOGINNOV has adopted a business modelling methodology called GUEST to assess stakeholder requirements, challenges, and opportunities, followed by designing specific business

solutions through the Solution Canvas.

In such a way, the 5G-LOGINNOV project assumes a significant role as an innovator and incubator for start-ups in the field of 5G technology, particularly related to improving logistics and transportation operations in ports.

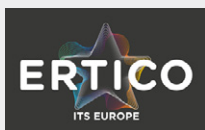
Save the World-Save the Planet

Last year, the team working on 5G and Transport & Logistics projects, such as 5G-LOGINNOV and FENIX, got ISO standard approval. Based on this standard (17748-1 Energy-based green ITS services on nomadic & mobile devices for smart city mobility applications – Part 1: General information and use cases definition), the

ISO/Technical Committee 204 has decided to cover this important topic and set-up a new sub-working group (SWG) as part of its working group (WG) 17 on Nomadic Devices in ITS Systems.

This new SWG 17.2 Save the World-Save the Planet is developing a series of international standards which define

energy-based green ITS services providing urban and smart city mobility applications on nomadic & mobile devices by measuring energy consumption and CO₂ emissions and providing information to users on energy capacity in the transportation sectors. This new ISO standard supports the European Green Deal. ■



ERTICO – ITS Europe is a public-private partnership of over 120 companies and organisations representing service providers, suppliers, the traffic and transport industry, research, public authorities, user organisations, mobile network operators, and vehicle manufacturers. Together with our partners, we develop, promote, and deploy Intelligent Transport Systems and Services (ITS) through a variety of activities, including European co-funded projects, innovation platforms, international cooperation, advocacy, and events. Our work focuses on connected & automated driving, urban mobility, clean mobility, and transport & logistics.



5G-LOGINNOV is co-funded by the European Commission, Horizon 2020 research and innovation programme under grant agreement No. 957400 (Innovation Action).

Global innovation from the Baltic

by Fitzwilliam Scott

This spring, Shipnext – an online freight platform founded by shipping & technology entrepreneur Alexander Varvarenko, which helps the seaborne transport industry work more efficiently – was asked to contribute to a World Ocean Council documentary highlighting the people and organisations working to strengthen corporate ocean responsibility.

For the Ventspils-born Varvarenko, the exercise provided an opportunity to reflect on his career in the shipping business. This journey has seen him launch a shipping company as well as a technology platform. After stints at Belgo Ruys in Antwerp and Flamar in Zeebrugge, Varvarenko opened his own enterprise, Varamar, in 2009 (a shipping company with offices in Houston, Hamburg, Dubai and Shanghai, Varamar is still operational today, though he is no longer involved in day-to-day management).

Performing more productive functions

In 2015, Varvarenko drew on earlier experience as a self-taught software developer and, with partners, launched the Antwerp-headquartered Shipnext in an effort to make life easier for all those in the business who are overwhelmed by the sheer volume of emails they receive. He identified many years ago that an algorithm could do a much better job of processing messages than a human – freeing up the employee to perform the far more productive function of sales and

customer relationship management.

It was this efficiency that came to the fore during the filming of the World Ocean Council documentary. In the film, Varvarenko explained how Shipnext used tools such as real-time data processing and constantly-learning algorithms to tackle over 36,000 cargo and freight requests daily. He explained how the patented Shipnext system combines email handling, powered by natural language processing, machine learning and artificial intelligence, with an all-inclusive A-to-Z shipping platform. This integration enables instant freight search, freight tendering, trade facilitation, and workflow automation.

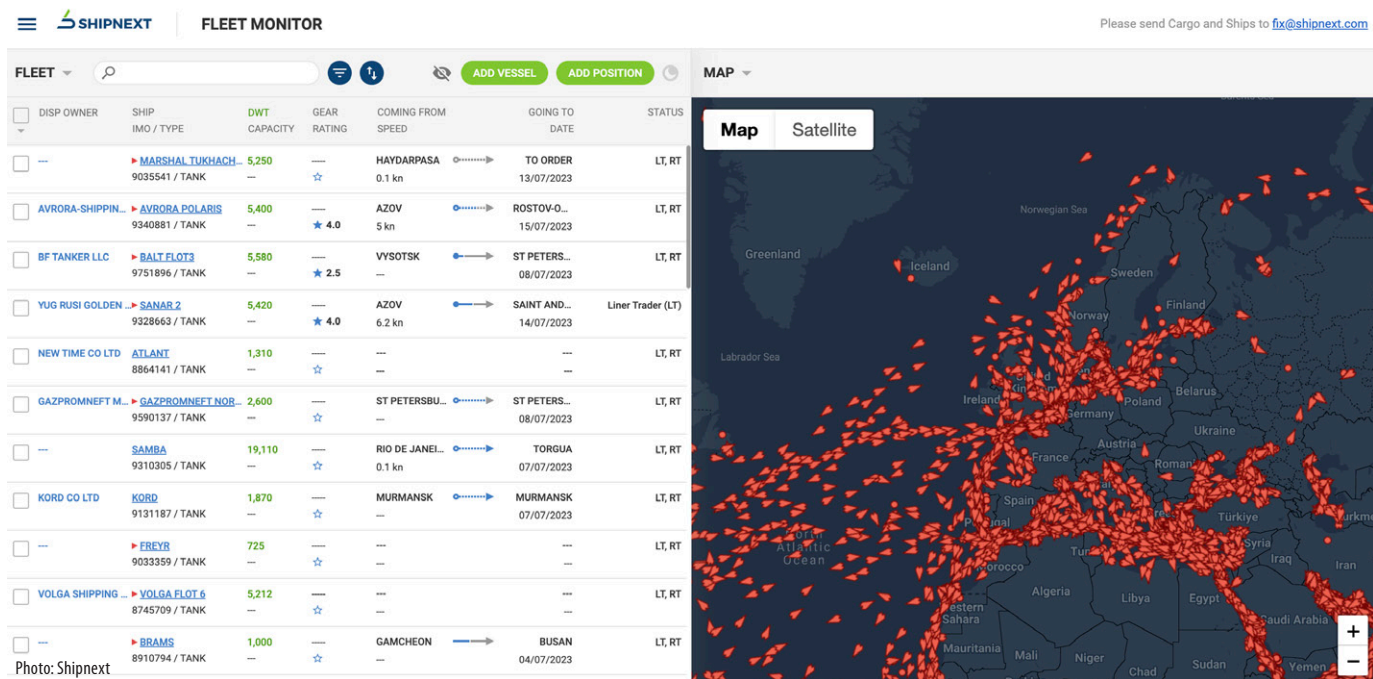
Older = greener?

Varvarenko also explained how Shipnext facilitates environmentally-friendly shipping choices. Evidence of this was the launch of an alternative emission index earlier this year: the Shipnext Voyage Emission Index (SVEI), designed in consultation with shipowners for vessels carrying break-bulk, dry bulk, and heavy & oversized shipments.

SVEI is based on individual technical parameters of the vessel, its speed, consumption and intake, whilst also taking into account the actual cargo quantity and the intended voyage. SVEI considers the ship's fuel consumption at sea to reflect the work of the particular vessel. In-port fuel consumption is ignored since it's comparable for most ships, and the time of loading & discharging is determined mainly by port technology, not by the technical capabilities of the vessel.

Next, the Shipnext CII (SCII) is proposed as an alternative to the International Maritime Organization's (IMO) Carbon Intensity Indicator (CII) rating, which seeks to measure the efficiency of a vessel above the gross tonnage of 5,000 and gives it a respective score from the best A to the worst E (with IMO intending to make the criteria increasingly stringent by 2030).

Carriers, including Maersk, have complained that the IMO CII fails to incentivise cargo optimisation and have called for a methodology that rewards more productive vessels. SCII has been designed to do just that. "The major problem with the existing IMO guidelines is that they do not take into



consideration the cargo actually being carried on a voyage,” says Varvarenko. “When you do so, the emissions profile of a given voyage changes completely.”

Shipnext modelling shows how an older, higher-emitting ship, if managed properly and laden to full capacity, can prove to be the ‘greener’ solution vs a more modern ship that’s producing more CO₂ because it is on a longer voyage.

“Right tankers for the right cargoes”

The latest innovation has been the addition of a liquid bulk functionality to the Shipnext platform, allowing it to serve a wider client base. “Shipping liquid cargo is highly specialised, and many of our

customers and tanker owners requested the addition of this functionality at the platform,” explains Varvarenko. “Because of the complexity, it’s not common to see such facility available on digital platforms, but we want to be able to cater to the whole of the market.”

Users can now add their liquid cargo to the Shipnext Trading Desk, entering key data such as the cargo’s total volume in cubic metres and melting point in

centigrades. Meanwhile, the Shipnext Fleet Monitor tool can be used to view tankers available to handle the shipment, as well as the tanker status and position.

Shipnext has registered the Danish-based Uni-Tankers, which has a sizeable fleet of carriers specialised in the safe handling of dangerous goods. Michael Eskling, Managing Director Marketing at Uni-Tankers, also took part in the Shipnext World Ocean Council documentary, where he detailed how the shipping business traditionally suffered from “a lack of transparency – especially when you want to locate the right tankers for the right cargoes.” He added, “Working with Shipnext, we can make the market more transparent and ensure we achieve the most efficient and sustainable solution by always choosing the ship that is in the right position.”

Shipnext can now better serve clients who ship a diverse range of liquid goods, including diesel, chemicals, bitumen, benzene, liquid asphalt, and waste. Owners and brokers of liquid tankers are invited to register their vessels at the platform.

Moreover, Shipnext can be used for the transportation of consumer goods, equipment & machinery, food & beverages, forest products, grains, livestock, metals & steel, minerals & rocks, organic material, and perishables & produce. ■



Shipnext is a digital shipping marketplace and transportation platform that provides instant data and email processing, immediate cargo-to-ship matching, freight trading and contract management, digital documentation flow, freight finance, and supply chain management solutions. Go to shipnext.com to learn about the full range of services and tools.

Evolving connectivity

by Rob Preston, *Senior Technical Engineer, GTMaritime*

Continuing advances in satellite connectivity at sea – especially the rise of low-Earth orbit (LEO) networks – mean that ships in service have access to higher bandwidths than ever before. For the first time, companies can truly replicate their shoreside IT set-up on board vessels at sea, implementing the same office software tools they use on land to benefit from more consistent processes and streamlined IT management. This growing number of connectivity options available to the shipping industry emphasises the need for flexible and secure email and data-transfer solutions designed specifically for maritime use.

Yet, although the enhancement of interconnectivity between vessels and shore-based operation centres is a positive development for the maritime industry, it also entails new risks to cyber security. By unifying their onboard and onshore software, shipping companies expose their vessels to the same cyber threats to which their land-based offices are subject. With digital solutions evolving rapidly and the volume of data being transferred from ship to shore soaring, the risk of a cyber-attack is also on the rise.

Another vital consideration for shipowners looking to mirror their office IT set-up on board their vessels is that the products used onshore are rarely designed with maritime deployment in mind. Where shore-based infrastructure may comfortably support their high

bandwidth demands, vessel infrastructure may be pushed to its limits. Even with the increasing bandwidth available to owners, using conventional office software tools aboard a ship can impact other crucial data-dependent functions, such as crew connectivity – a significant consideration in modern shipping.

Secure & lean

Against this background, shipowners require software tools optimised for use at sea, with built-in security features and the capacity to minimise data consumption for routine business tasks, including email and file sharing. These tools should be compatible with the many network types available to shipping today; ideally, they should also be provided by technology companies familiar with the challenges faced by shipping, both in terms of working practices

and the evolving threats specific to ship communications.

GTMaritime has supported ship-shore connectivity for maritime businesses since 1998, and today, its solutions can be found on board over 14,500+ ships worldwide. In developing and upgrading its products, our team works closely with its international customers to ensure their requirements and challenges are being addressed. For example, GTMailPlus is a maritime-optimised email service whose success has been built around its ability to facilitate integration with popular office software suites, such as Exchange, Office365, and Gmail. This allows ship- and shoreside personnel to use familiar tools while benefiting from stable, secure, and bandwidth-efficient data transfers.

Meanwhile, our file and data replication service, GTReplicate, uses its proprietary secure data transfer protocol to optimise data



Photo: Canva

streams between ship and shore, identifying changes in files to minimise the amount of data being transferred. As a result, even while large, data-heavy transfers are in progress, sufficient bandwidth remains available to support other tasks – with the crew still able to access online communication and entertainment services, for instance.

Better together

GTMailPlus also features an enterprise-grade security suite as standard to address the increasingly pressing issue of vessel cyber security, offering robust protection from threats, including zero-day attacks. This comprises anti-phishing, antivirus, spam management, and advanced threat protection applications. In the past six months alone, GTMaritime's solutions have protected ships against over 100k malware attacks unknown to standard antivirus services and blocked over 14m spam messages.

Reflecting GTMaritime's holistic approach to vessel security, the company offers a range of end-point protection solutions for vessels to provide scalable, intelligent, and strong protection without impacting productivity. To further enhance the company's cyber security offering, GTMaritime recently became a Focus Partner in the CrowdStrike Powered Service Provider programme, which means GTMaritime solutions can now be integrated with the CrowdStrike Falcon platform.

Provided in partnership with CrowdStrike, customers receive an end-point detection and response solution with artificial intelligence-based next-generation antivirus. This includes the ability to isolate single devices to protect the rest of the network and offers different levels of firewall protection, security operations centre, and threat hunting, along with access to 24/7 support in the event of an incident.

Together, GTMaritime's powerful solutions and the CrowdStrike Falcon platform provide protection from both known & unknown malware and ensure regulatory compliance as set out in the new Unified Requirements for cyber security from the International Association of Classification Societies (mandatory for classed ships and offshore installations built on or after 1 January 2024).

Maritime-optimised

Crucially in today's maritime industry, in which companies increasingly rely on more than one network to meet their operational needs, our solutions are compatible

with any network type – whether based on LEO, geostationary, Wi-Fi, or LTE connectivity. They, therefore, provide secure and efficient data transfer regardless of the service – or combination of services – a shipowner uses.

Equally important is reliability. In the last year, GTMaritime software has achieved 99.98% network uptime. Backed by two European Union-based data centres and market-leading cloud-based infrastructure, it also offers high levels of redundancy and scalability.

As maritime connectivity evolves, increasing care must also be taken to ensure that vessels are not exposed to avoidable cyber threats and that crucial onboard processes are not hindered by data-hungry software designed for shore-based offices. Owners and operators would benefit from ensuring that their chosen solutions are flexible and maritime-optimised, support secure and efficient data transfers irrespective of network type, and account for the unique challenges facing ships and personnel at sea. ■



GTMARITIME

GTMaritime is a leading provider of secure maritime data communications solutions. Since 1998, the company has been providing a range of technology solutions and services to the maritime industry that enable effective communications over satellite. GTMaritime specialises in solutions and services that help ensure vessel compliance and business operability 365 days a year, as well as keeping crew in touch with friends and family whilst at sea. Connect to www.gtmaritime.com to find out more.

Overcoming scepticism

by Fitzwilliam Scott

Big data and artificial intelligence (AI) are often said to be reshaping the maritime industry's future, even though sceptics sometimes resist the attractions of the algorithm because they suspect a disconnect between the basis of analytics and the shipping business. A new study developed by METIS Cybertechnology with Andriaki Shipping offers a detailed analysis of the true gains to expect from the options provided to reduce ship greenhouse gas emissions (GHG-E).

The International Maritime Organization's (IMO) Carbon Intensity Indicator (CII) measures carbon intensity over time, given in grams of carbon dioxide (CO₂) emitted per cargo-carrying capacity and nautical miles travelled. The regulation rates a ship on an A-E scale, requiring continuous improvement.

Today, high-frequency data capture is invaluable for CII reporting, where traditional logs (e.g., noon reports) provide neither the quality nor volume of data to deliver comprehensive benchmarking. The two study partners have applied the power of analytics to uncover the buried relationships between ship operating parameters and IMO's CII that will help owners evaluate the options to enhance their CII performance.

Getting to the heart

Considering fast-growing data capture, higher speed connectivity, and advances in cloud computing, METIS and Andriaki Shipping use a combination of established methodology, new algorithms, and mathematical modelling to measure the impact

of alternatives to improve CII scores. Doing so gets to the heart of the practical gains AI makes possible by interpreting hidden patterns and data structures and the response to those patterns available to machine learning.

Voyage performance requirements will be established by the owner (or by agreement with the charterer), but from the CII perspective, the optimum will be achieved when CO₂ emitted per cargo-carrying capacity and nautical mile is minimised. While optimised speed for minimum fuel consumption will be a central consideration, other variables include the ship's trading pattern (time in ballast and laden) and the time spent & energy used while in port. Within this framework, performance optimised for CII will, nonetheless, rely partly on the ship's ability to convert energy use into distance travelled.

In addition to analysing a ship's bunker consumption by energy produced, AI-based modelling can establish the value of different energy-saving strategies. As a first step, the METIS-Andriaki methodology evaluates the high-frequency raw data itself

based on specific signal profiling, calculations from flowmeter readings, and three 'virtual sensors' that ensure the reliability of results by learning to interpret the relationships between variables.

In a case study involving a bulk carrier of 91,373 gross tonnage (GT; 16 m-17 m mean draft), the analysis suggests 7% could be cut from fuel consumption simply by reducing speed from 12.5 to 12 knots. The same modelling also better establishes the impact for CII of hull fouling, where drag has consequences for speed and fuel consumption but may also require a ship to reduce payload to meet its charter commitments. Again, the model would be invaluable for evaluating weather routing optimisation claims or the impact of port turnaround efficiencies on CII.

The more you know, the less you burn

Going further, METIS and Andriaki Shipping offer specific evaluations of several new energy efficiency solutions developed to save fuel, weighing up the options based on life-cycle cost. An ideal candidate for



Photo: Andriaki Shipping

analysis using high-frequency data are waste heat recovery systems, a key technique identified by IMO for GHG-E cutting potential.

Taking a Zeolite adsorption chiller as the candidate technology, the METIS-Andriaki analysis uses a specialised software library to model an operational simulation of adsorption chillers on a very large crude carrier with a main engine of 31,640kW maximum continuous rating (MCR). Based on experimental data sampled every 15 seconds and mathematical modelling, total cooling energy for an entire year is 160,407kWh. With the respective electric power requirement at 45,831kWh, the adsorption chiller requires only 6,959kWh to operate. The net saved electric power is thus 38,872kWh, equivalent to an 8.94-tonne annual fuel saving from a single unit. With the vessel's capacity for eight modules, the CII impact could be substantial.

A second study focuses on four sister vehicle carriers of GT 36,902, each delivered in the same year, three of which underwent full hull-blasting followed by the application of silicone-based anti-fouling paints, whilst the fourth was spot blasted with conventional paint applied. Over two years of evaluation, measurements were

taken every 15 seconds and resampled at 30-minute intervals. Over a range of operating profiles and weather conditions, the 'conventional' paint demanded approximately 12% more power (on average). After the analysis, the shipping company undertook hull cleaning and propeller polishing to correct the performance shortfall.

Another case study relates to the installation of an energy-saving device in the area of the propeller of a GT 84,850 oil tanker during dry-docking. The vessel undertook sea trials in both laden and ballast conditions and in good weather before and after the dock. Using an AI-based analytics approach and taking into account different main engine loads in relation to the actual speed profile, the vessel's performance after the dry-docking in terms of shaft power to speed was given as between 4% and 14% ahead of its pre-docking data.

Trim optimisation minimises ship hull resistance. Though it's a limited research

field, most estimates speak of 0.5-5% in energy savings. However, the optimal trim tables employed by shipping today are usually based on calm sea states. In contrast, a dynamic system (that considers sailing speed, displacement, and actual weather state) is essential for optimisation.

In the case at hand, data from the continuous monitoring system of a 333 m-long oil tanker featuring a 31,640 kW MCR main engine was acquired over 24 months, with weather data collected from four providers and filtered, and measurements recorded with a sampling rate of one minute.

The ship's power needs could be reduced by ~3% and up to ~16% by selecting the optimal trim for certain speed and draft configurations. Further investigation into this subject is needed to obtain greater accuracy and proceed to their verification. Nonetheless, stakeholders might also note that this is an easily implemented solution that can significantly reduce CO₂ emissions. ■



METIS Cyberspace Technology specializes in high-frequency data acquisition, and advanced performance evaluation analytics for the maritime industry. METIS combines innovative thinking, maritime business know-how and expertise in high-end technologies such as machine learning and artificial intelligence to empower shipping's digital transformation. Head to www.metis.tech to learn more.

Waste no effort

by Svante Göthe, *Head of Sustainability, RELEX Solutions*

Food waste is a pervasive global issue with severe environmental, social, and economic consequences. At each stage of the supply chain, from production and processing to distribution and retail, substantial amounts of food are lost or wasted. The detrimental impact of this waste extends beyond the loss of valuable resources to the emission of greenhouse gases and food insecurity.

However, with technological advancements and the adoption of innovative solutions like modern supply chain planning software, there is enormous potential to reduce food waste effectively. In this article, we will explore the magnitude of food waste in different parts of the supply chain and highlight how advanced planning software can be instrumental in combating this issue.

The where's & when's of food waste – and its environmental impact

Food waste occurs at various supply chain stages, leading to significant losses globally. According to the Food and Agriculture Organization (FAO) of the United Nations, approximately one-third of all food produced for human consumption is wasted, about 1.3 billion tonnes annually.

Factors such as adverse weather conditions, pests, and inadequate storage facilities contribute to crop losses, ranging from 20% to 40% in certain regions.

Inefficiencies and suboptimal processing and manufacturing practices can result in significant waste. Trimmings, by-products, and imperfectly shaped or sized produce often go unused and are discarded, contributing to overall waste.

Food loss continues to accumulate during distribution and retail operations. Inefficient

inventory management, inaccurate demand forecasting, and suboptimal shelf rotation practices lead to expired products, unsold items, and overstocked shelves.

Significant food waste occurs due to improper storage, over-purchasing, and confusion over date labelling. Consumers often discard perfectly edible food, contributing to the overall loss generated throughout the supply chain.

Food waste generates substantial greenhouse gas emissions (GHG-E) and contributes to climate change. When food decomposes in landfills, it produces methane, a potent greenhouse gas. The FAO estimates that food waste accounts for approximately 8% of global GHG-E. We can effectively mitigate these emissions and their environmental impact by reducing food waste.

The hows of preventing food waste

Supply chain planning plays a vital role in combating food waste. By harnessing the power of data analytics, machine learning, and optimisation algorithms, advanced planning software such as RELEX empowers businesses to make informed decisions, minimise inefficiencies, and reduce waste.

Our solution utilises advanced analytics to break down historical sales data, market trends, and external factors to generate precise demand forecasts for each product in every

storage location. By optimising the planning process on accurate and granular demand insights, businesses can avoid overproduction, reduce stock-outs, and minimise waste.

RELEX employs sophisticated algorithms to optimise inventory levels based on demand forecasts, lead times, and service level targets. By ensuring optimal stock levels, businesses can minimise waste while meeting customer demand effectively.

We have also incorporated shelf life considerations into the planning process, enabling businesses to prioritise inventory based on expiration dates. This helps prevent outdated products from reaching store shelves, ensuring that the freshest goods are available to customers and reducing waste.

Optimising transportation and delivery routes is vital for minimising food waste in the supply chain. Advanced planning software like ours considers various factors, such as delivery windows and vehicle capacities, to plan optimised logistics operations. By optimising vehicle utilisation, businesses can minimise the risk of spoilage and reduce unnecessary emissions.

Effective collaboration and communication among stakeholders in the supply chain are also crucial for waste reduction. Advanced planning software provides a centralised platform that enables information sharing, collaborative planning, and efficient



Photos: RELEX Solutions



communication. Businesses can streamline operations, prevent wasteful practices, and improve overall efficiency by fostering collaboration between suppliers, producers, distributors, and retailers. The same goes for communication within companies – by having unified processes between departments with potentially conflicting interests and KPIs, such as supply chain and merchandising, waste can be reduced.

Adopting advanced planning software to reduce food waste has significant environmental benefits. By minimising food loss throughout the supply chain, we can reduce the resources, energy, and water used in producing, transporting, and disposing of wasted food. Moreover, as food waste contributes to GHG-E, such as methane from landfills, reducing waste mitigates these emissions and their impact on climate change directly.

Effectively addressing food waste requires collaborative efforts and industry-wide adoption of advanced planning software solutions. Governments, industry associations, and organisations can play a pivotal role in promoting the adoption of such technologies, providing incentives, and facilitating knowledge-sharing among stakeholders. We can create a more sustainable and efficient food supply chain by working together.

Lay waste to waste

Food loss poses a significant challenge throughout the global food system.

Advanced planning software is crucial in reducing food waste across the supply chain. By effectively managing demand, optimising inventory, improving shelf-life management, and streamlining distribution & logistics, businesses can minimise waste and contribute to a more sustainable food system.

Deploying advanced planning software, coupled with collaborative efforts and industry-wide adoption, is vital to address the global challenge of food loss and build a future where waste is minimised, resources are utilised efficiently, and food security is enhanced. ■



RELEX

RELEX Solutions offers a market-leading supply chain & retail planning platform through which we help retailers and consumer brands unify their planning, from demand & merchandise to supply chain & operations, for maximum customer satisfaction at the lowest operating cost. Visit www.relexsolutions.com to learn more.

Goodbye, analogue!

by Joonas Määttä, *Project Engineer, Concept Design and Project Services, Deltamarin*

The use of 3D ‘digital twins’ for class approval represents a milestone in the ongoing focus on applying digitalisation to increase productivity and shorten the calendar time for ship design. Designing ships in a 3D digital environment is not in itself new. We already use advanced CAD software in our everyday work, and these applications get better with every new release. However, we can’t yet use the 3D models themselves for the classification approval process, where the relevant class society could review and comment on the design directly from the models.

The traditional approval process – and this applies across the board – still requires us to supply the relevant class society with a vast amount of 2D structural drawings for every ship project. These we have to extract from the 3D models we have created, which is hugely time-consuming.

The effort that goes into them only increases as they get more intricate. For example, we recently built a detailed 3D model for the initial basic structural design of a regular-size ro-pax vessel. From this, we had to extract up to 50 separate sets of drawings, each consisting of up to 1,000 individual drawing sheets. That is quite a mountain of material!

On average, around one-third of the basic design process on each project is spent on creating, modifying, and updating such drawings, even though we do

pretty much all of the actual design work in 3D. However, this is about to radically change as class societies increasingly work directly from 3D models. Our ultimate goal is to create easily maintainable 3D models covering the basic design of entire ships – essentially a digital twin for class approval.

No room for interpretation

We estimate that cutting out the laborious phase of generating and constantly updating 2D drawings will save up to 30% of the person-hours required for the basic design process, enabling faster ship deliveries. The class approval process, which is critical in terms of the ship’s overall delivery schedule, could, in turn, be completed around three months faster as the class surveyors can respond much quicker to the designer’s needs. Overall project lead

time can be significantly reduced and productivity increased, as the 3D model can be shared directly with all project stakeholders, including the shipowner, shipyard, and equipment suppliers.

One crucial benefit of using a 3D model vs 2D drawings is that there is no room for ‘interpretation’ as everything is visible. The model’s automatic tools can highlight changes and show previous revisions, making it easy to track alterations and revert to an earlier version if necessary. In addition, production can continue directly from the final approved model, making handover to the shipyard easy, efficient, and free of mistakes.

Always up-to-date

The interactive model also has life-cycle benefits that drawings cannot provide. The problem with the latter is that they quickly

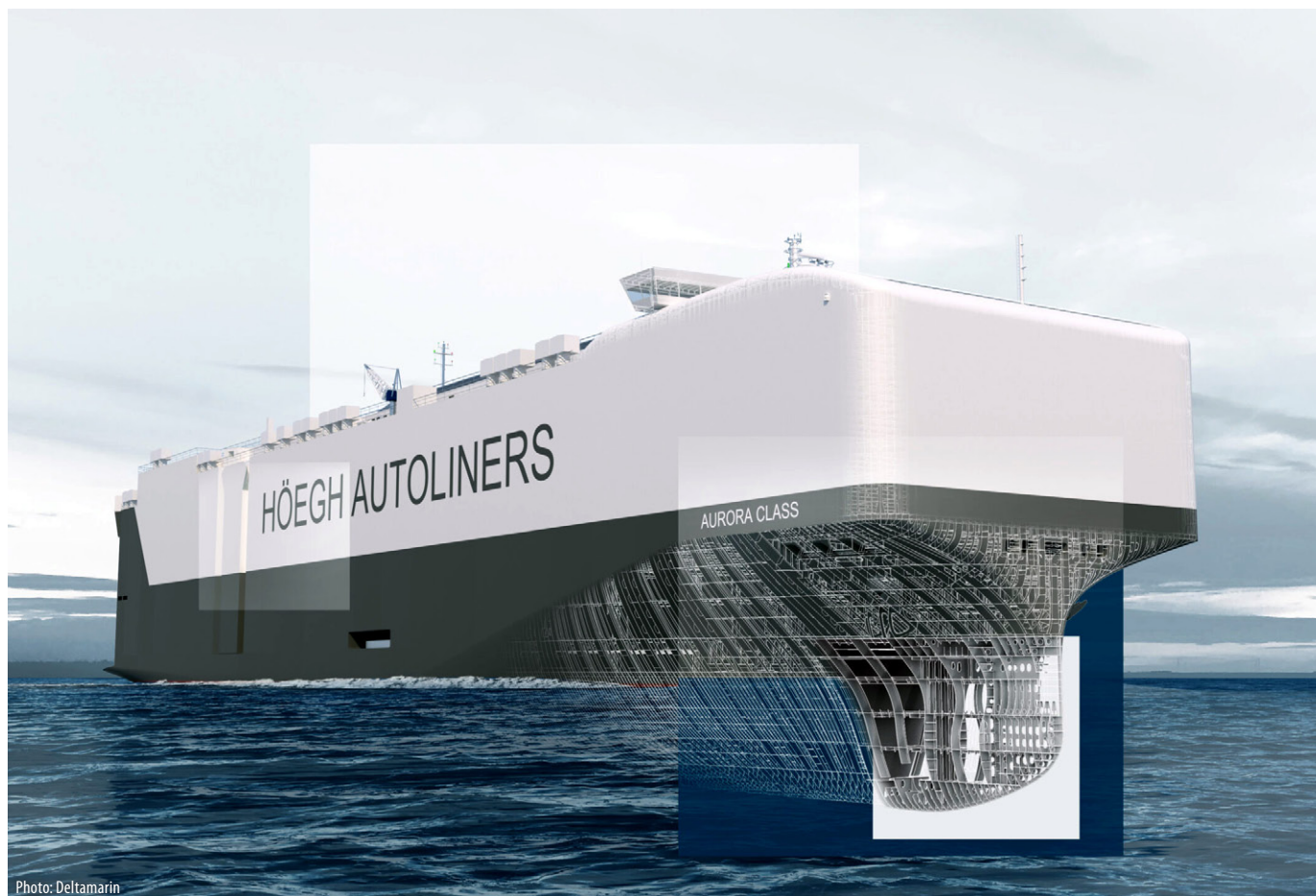


Photo: Deltamarin

become obsolete and unusable as the ship's structure changes, and not all drawings may even be available or accessible at a later date (some serve only one purpose, after which they are no longer needed).

In contrast, the digital twin would always be up-to-date as new changes can be done directly in the model. It would hold all important data in one place that everyone can access. Hence the benefits of the model accumulate over the ship's entire life cycle – from initial classification to later modifications or conversions/retrofits, with, for example, new propulsion systems (including wind power). The production model can simply be handed over to the project-responsible designer and/or shipyard.

As Ole Christian Astrup, Senior Principal Specialist at DNV, confirms, using 3D models “opens up for new possibilities in asset data management, which I strongly believe will drive the safety and reliability of ship design and operation. A good example would be a more efficient process for verifying rule compliance. The OCX format will help designers control and optimise their designs while enabling class societies to confirm rules compliance directly from the 3D model.”

Breaking down the barriers

We are taking a leading role in this design evolution, having recently completed a section of the steel design work for an ammonia-ready Aurora Class vessel for Höegh Autoliners both in 2D and 3D, with the latter model conforming to the new Open Class 3D Exchange Format (OCX) standard. **The model was approved by DNV, which to our knowledge, is a first.**

The OCX is a standardised file format and a key enabler to replace 2D documentation requirements. The standard is owned and managed by the OCX Consortium, established in 2021, which unites all the major class societies and CAD software vendors, as well as shipyards and design houses.

The core objective is to break down barriers between different design platforms to enable the exchange of geometry and

metadata between them. This will ensure that trace information is exported from the designer's application to class in a managed process that is reliable and fully transparent.

Not far off

As software development takes time, there is a bottleneck in rolling out the OCX format, not on the part of ship designers or class societies, but as 3D software suppliers work to implement it as fast as they can. They are not far off!

As to the future, we are also exploring further digital developments, including using artificial intelligence to compile a database of ships that naval architects can access to study previous designs and sort them based on specific characteristics. This kind of reference set would eventually include 3D models, saving even more time. Onwards and upwards! ■



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Eager to learn, develop, and innovate

by Przemysław Myszkowski & Przemysław Opłocki

Because of the coronavirus pandemic, we had to wait four long years for another grand gathering of the transport & logistics industry in Munich. During the event, we had the pleasure of talking with GEODIS' Matthias Hansen about what has changed for his company throughout these years, including the 'COVID legacy.' We also spotlighted GEODIS' activities across the digital and sustainability fields.

■ ***What has changed for your company since the last edition of transport logistics in 2019?***

Before the pandemic, logistics service providers tended to be asset-free. Throughout these years, companies have realised that it's better to have a certain number of assets at their disposal; ideally, not too much, not too little. For instance, GEODIS operates a cargo airline, which proved very useful during COVID. In times of lower demand, running such a business may require this little extra hustle from us for this capacity to take wing. We also didn't charter container ships in the past (unlike break-bulk), another thing that changed. There has, too, been a change from short- to long-term ocean contract agreements: three-four years, fixed space, and show-or-no-show. It all influences our flows and how we manage them. In short, it increased security but, at the same time, also our obligations.

Meanwhile, ocean carriers continue to integrate; some are straightforward with it, while others may be a bit 'blurry' about it, not necessarily wanting to cut their ties with freight forwarding players. Because of a record EBITDA wave, money wasn't an issue anymore. Then again, becoming an integrator has turned out to be a more challenging task; one cannot perform simply by throwing money around. Things like transporting cargo by air or utilising warehouse capacity to the best of one's abilities (at the same time, maybe cutting your ties to previous storage providers) aren't things one can master overnight. Integration that works takes time – and I mean years.

The market is past the money-making wave – cost control yet again became a key topic. On the whole, I don't see ocean carriers as more demanding competitors than our 'classic' peers, even those bigger than our organisation.

GEODIS has a good market share, especially in end-to-end solutions where we have a stronger foothold than carriers. We see some of them approaching 'our' turf, which will only require increased diligence. Moreover, it is always rewarding to hear from a returning client that they're back for service quality!

Recent years have also been busy for us on the acquisition front, including a strong focus on last-mile delivery. Even before the pandemic, in 2015, we took over the American Ozburn-Hessey Logistics; then, in 2020, we completed the takeover of the Polish Pekaes; end-2021 brought the French Les transports Perrier under our umbrella; mid-2022 saw the inclusion of the Singaporean contract logistics specialist Keppel Logistics; summer of that year the acquisition of the American express transport company Need It Now Delivers; and shortly before this year's transport logistic the German carrier Trans-o-flex became part of the GEODIS family. As such, we strengthened our end-to-end network.

It is a structural transformation to keep abreast with the times. Fortunately, this spirit of change within our organisation drives us forward. The same holds for our parent company, SNCF, which gives us much room to manoeuvre freely. Once the goals are set, execution is firm. Curiously enough, all these changes add to overall stability.

■ ***What is your outlook?***

The demand for logistics is coming back step by step. Packed-to-the-brim warehouses got emptied and now require new freight to earn their keep. That said, we are happy to have long-term contracts which provide stable revenue flow.

The high energy prices got many in a pickle in Europe, as customers were afraid to reach

into their pockets, not knowing how high the electricity bill would be. The US was much more solid in this regard. Labour is another issue; in Germany alone, there are around one million unfilled job posts, which takes its toll on output. The capacity-demand (mis)match is a pervasive challenge, e.g., finding the correct answer to the question of how to operate these enormous container ships without trade filling their holds. Then again, I don't view the current situation as dramatic, leastways for GEODIS. We have had a roll, giving us the much-desired wiggle room to change & adapt.

■ ***Is COVID still a thing for GEODIS?***

It is true that we're past the pandemic. Nevertheless, the hybrid model of working has stayed with us. People performing their duties from home turned out to be more efficient than we initially thought (and, indeed, the scepticism of the generations more advanced in years got proved wrong). IT support was great, too.

I am genuinely amazed at how frictionless GEODIS transitioned from full-office to having the opportunity to work two or three days remotely. We didn't cease onboarding new people during the pandemic, so there were personnel that had no chance to get a taste of GEODIS. That brought our attention to the importance of networking (also for team performance), which no over-the-Internet communication tool will ever mimic. We now have the best of both worlds.

■ ***What advancements across the digital field have you made?***

We have IRIS, an intelligent, real-time freight management platform through which we offer, among others, online



Photo: GEODIS

pricing, booking, and shipment tracking. We also have another solution developed to help us tender bigger contracts, enabling us to semi-automate dealing with these bidding files with hundreds of places to fill.

Over the past three years, we have boosted our online quotation tool. Currently, we are working on a global freight rate database, coupled with IRIS, for automating costing & rating. The ultimate goal of this 'rate engine' is to feed the online quotation tool automatically. It took around two years to create it, starting in Q2 2021. We have begun by writing the business concept, some 170 pages that were further fine-tuned, to test

it and incorporate it into our daily operations. It will be much easier to nail the right price, a critical factor in winning tenders. Remember: while the process that leads to tendering might be somewhat lengthy, the biddings come all at once. Having this dynamic visibility rate insight can be the difference that makes a deal.

For clients, we are looking into a predictive sailing solution. Rephrasing a certain movie series about Caribbean pirates: timetables are more of a suggestion. Blank sailings, pandemic- or strike-induced terminal closures, slow steaming, port call changes, a carrier going bust in the middle of shipping

thousands of containers, and the like – all such events have greatly impacted how shippers view sailing reliability. "Your schedule says 40 days, whereas, in reality, it took 65! How can it be?" a cargo owner could rightly exclaim. A predictive sailing solution would consider such historical data, combine it with what's happening, and give an informed take on the estimated arrival time. It is a 'touchy' issue and a delicate matter when getting data from various sources, but we see the future bringing such a solution. It might never appear as an all-mighty 100% accurate tool, yet, the more credible intel shippers get, the better choices they can make.



Photo: Renault Trucks

JULIEN CARTE/2021



Photo: Bruno Clergue/GEODIS



Photo: GEODIS/Phantom Auto

Our employees are very happy with the digital advancements we're making. Mainly the trading guys are glad they can focus on the important stuff without crunching through myriads of figures. As a company that wants to grow, we'll have to onboard new people, and modern software that handles mundane tasks is a means of trusting them with more meaningful work. Logistics & freight forwarding is still an industry with too many moving parts,

exceptions, and unusual scenarios (that nonetheless materialise) for some algorithm to wrap its head around it all. In this field, service quality expertise continues to be a person-driven advantage. Technology is something that will enhance instead of replacing it. That is an ideal situation when growth matches optimisation. We may, however, reach a tipping point when the time is ripe to say farewell to Excel spreadsheets!

■ **What is the organisation's take on ESG, especially in relation to your workforce?**

GEODIS is an attractive place to work. As an organisation, we have embraced sustainability – the most imminent goal being a reduction of our carbon footprint along a trajectory respecting the Paris Agreement – a crucial factor for recruiting young people. Younger generations want to be part of the change and see how their



Photo: Piero Cruciatti/GEODIS



Photo: Julien Lutt/GEODIS

work translates to making a transition to a low-carbon world.

Among many, we run a fleet of nearly 240 alternative vehicles, meanwhile investing in biofuel for air & marine operations. The latter is a bit tricky. Most companies wave the sustainability flag, but still, the minority is willing to pay extra for sustainable solutions. This hesitation has been the same irrespective of whether the freight rates were high or low(er). There are regional differences, of course, with Nordic enterprises more willing to dig deeper into their pockets if the environment can benefit. We would like to see this green fuel change pacing more rapidly. Regardless, we stay committed.

Our warehouses feature sensors, thanks to which we can, e.g., adjust the heating. Route optimisation is also something that can have a significant impact on transport emissions. We are also working on some cool tech solutions, like a remotely-operated forklift to increase the attractiveness of working “in” a warehouse or together with Renault on Oxygen, a 16-tonne electric city truck to reduce urban road freight traffic-related nuisances, such as pollution and noise.

Another project involves a co-op with a French vessel builder, currently putting together two ships with sails for transatlantic trade. These alone are estimated to axe emissions by as much as 40%. The operator has already secured volumes for the pair, including GEODIS booking space to sell to our customers.

Gender equality is another essential element of today's GEODIS. Our CEO, Marie-Christine Lombard, is a woman, as is one-third of our board. In the team I'm heading, there's a 50/50 split. Coming from different backgrounds &



Photo: Maarten Van Rouveroy Van Nieuwaal/GEODIS

cultures, women also bring the much-desired diversity of opinions & views.

The GEODIS team consists of many nationalities, and we try to take advantage of that too by sending people all around the world to observe & learn from other cultures. I greatly benefited from this approach: being a German, I was transferred to Argentina, an entirely different setting. It was and continues to be a tremendous horizon-broadening experience. Sure, it was also challenging: to cope with another language, climate, working routines, and everything else. Yet, if one faces the challenge, one is ultimately rewarded with growth. Mingling mentalities is a great asset, likewise inspiring people.

Atop that, we offer various educational options, including the GEODIS University. Then, there are these ‘town hall meetings,’ when a managing director stands in

front of others and addresses their questions, getting the employees much more engaged. I have been with the company for 31 years and am still eager to see how we can develop, improve, and innovate.

■ ***How would you change the world of logistics should you have godlike powers?***

If I had such a might, I would try to create a CO₂-free transport world; one without fossil fuels towards 100% renewable energy. The market players have realised that the maximum use of ships, planes, and trucks is above all growth targets. Transparency and the simplification of transport processes allow every customer to initiate a booking within a few mouse clicks and without the hassle of creating cumbersome documents. Global trade at its best while avoiding global warming and pollution! ■

EU vehicle logistics seeks harmonisation to thrive again

by Ewa Kochańska

In the words of Wolfgang Göbel, President of the Association of European Vehicle Logistics (ECG), lately, the finished vehicle logistics (FVL) industry has had to endure “crisis following crisis” while facing “some of the most challenging times” ever seen in the business. Whether caused by Brexit, Covid-19 lockdowns, or war in Europe, the EU vehicle logistics sector has struggled. The 28th ECG General Assembly & Spring Congress, an annual event that brings together experts and stakeholders from the automotive logistics industry, analysed its objectives concerning the challenges of increasing investment and operational costs, rising inflation, and environmental regulation.

Speakers at this year’s event, held in Thessaloniki on May 11-12, discussed the importance of environmental stewardship, digitalisation, and transition to electric mobility in the European logistics sector. Industry professionals highlighted the potential of blockchain technology in enhancing transparency and efficiency, and their presentations encouraged the stakeholders to embrace sustainability practices and explore the opportunities they offer. The event also provided a platform to discuss the evolving regulatory landscape, trade policies, and customs procedures, calling for collaborative solutions and the enhancement of cross-border cooperation.

Rolling with the crisis-after-crisis punches

The convention’s first day included a welcome speech by Göbel, the ECG board meeting, and several procedural steps such as approval of 2022-meeting’s minutes, review of budgets, and a formal discharge of the outgoing board and a vote on its new members. Additionally, reports and updates from working groups and regional meetings were presented with an opportunity for interactive questions, followed by surveys on current issues that the members are targeting. Göbel, in his closing remarks to the Assembly, congratulated the newly elected ECG board, proclaiming, “We have the best ECG ever in Brussels right now.” The day ended with a gala dinner for all attendants and the ECG Academy graduation ceremony. The following day saw the ECG

Spring Congress, complete with a line-up of presentations from keynote speakers, including industry leaders, policymakers, and academics, who shared industry findings, insights, and expertise.

The first presentation, on the outlook on the European market, came from Justin Cox, Director of Global Production, LMC. He pointed out that the industry lived through “a series of layered disruptions since the pandemic,” with supply chain issues that have now been “supercharged by the war in Ukraine.” High inflation and interest rates have also been affecting the auto industry. “All of this isn’t really good for customer confidence, as we’ve seen, and that really translates into poor economic activity,” said Cox. However, in the first quarter of 2023, “the economic activity has been quite robust in both the US and in the Eurozone,” he added. Additionally, the predictions of expected recessions in Europe have been “dialled back” or have been milder, and the US is not expected to see a recession in 2023 at all. As a result of these economic ups & downs, the automotive industry has also been quite volatile. In Q4 2022, global light vehicle (LV) output increased by more than 4% year-on-year (yoy) and in Q1 by 5% yoy. Yet, supply-side disruptions continue to hinder LV output, but small improvements continue. Forecasts for the future in LV production show growth for Europe at +10% yoy, North America at +7% yoy, and China at +3% yoy. Some concerns in Europe about battery electric vehicles (BEVs) include poor preparation for a transition to EVs, e.g., many EU Member States need more

electric charging points along their roadways and plants with BEV programmes.

While the situation for the European car makers may still be shaky, China’s finished vehicle business is on an upswing. A report, *Finished Vehicle Exports from China*, by Namrita Chow, a transportation business analyst at ECG Business Intelligence, shows that the country’s finished vehicle sector is benefiting from the Russian war of aggression against Ukraine; China’s car exports to Russia now account for about 40% of all new sales there vs 10% in January-February of 2022. Overall, Chinese finished vehicle exports were up in Q1 of 2023 by 71% yoy, and they increased three times compared to Q1 of 2020 when Covid was beginning its run. With Chinese car makers laser-focused on electric vehicles, the global finished vehicle market could be dominated by the Asian nation quite soon.

Standardisation means cooperation

Ben Waller, the Associate Director ICDP, spoke about what can be learnt from the “chaos of the last few years” concerning forecasting methodology in the vehicle industry. Waller highlighted the need for cooperation in the industry to optimise all processes, e.g., fixing the planning process would resolve the capacity crisis. In terms of forecasting methodology and standards, the advice at the policy level included a commitment to quality, reinforcement to prioritise stable processes and communication, and consideration of an external forum for network development



Photos: ECG

and revision of best practices. At the operational level, Waller called for templates to standardise data and reduce rework and digitalise processes, templates, and data flows, among others. Concerning OEMs and LSPs, they must forgo current distrust and broken dialogue and commit to a more sustainable relationship by, among others, building stable monthly planning quality process loops and collaborating closely over backhaul needs and booking platforms.

Moving onto costs in FVL, the Innovation Lab graduate group from the ECG Academy presented their project: Development of an FVL Cost Index. They stressed the importance of cooperation among stakeholders to provide more accurate and frequent data, using the latest technologies, such as big data and artificial intelligence (AI), to streamline the flow of information.

Subsequently, Matthias Riveiro, PwC Partner, and Niklas Dilger, PwC Senior Manager, presented a Q4 2022 update of the FVL Cost Index. According to the report, five global micro-trends are currently influencing logistics and freight companies. First, climate change-related regulations are causing higher investment costs. Second, serious labour shortages are putting strain on the sector, particularly when it comes to truck drivers whose lower wages and poor working conditions repel the modern workforce. Third, inflation is causing a rise in costs, a reduction in purchasing power, and a demand for higher wages. Fourth, geopolitical tensions are resulting in much higher fuel and operating costs and the closing of some transport routes. And lastly, the pandemic, global lockdowns, and congested ports have resulted in still looming shortages of raw materials and purchased parts. The European FVL cost index for Q4 of 2022 is 158.3 compared to 2019, and the sea segment is responsible for most of it, with 236.4, chiefly due to port charges.

Next, picking up a hot-button issue of EU regulation, Dr Louise De Tremerie, Transport

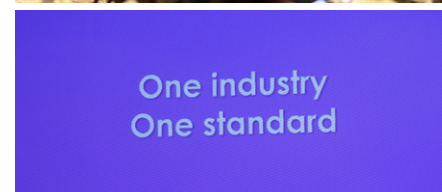
Policy Advisor in the European Parliament, updated the ECG Congress on EU affairs, particularly Fit for 55. Tremerie advised that while the majority of EU objectives in transport pertaining to that package either have been adopted or are close to adoption, the work on taxation, such as energy tax directive, taxation on electricity and fossil fuels, is falling behind, and it is unclear whether it will be finished on time.

The issue of emission calculations was discussed to finish the 2023 ECG Congress presentations. Andreea Serbu, Senior Manager, ECG External Affairs, pointed out that current guidelines for emissions are substandard by concentrating on weight, which is not enough to measure emissions (all dimensions should be considered). Therefore, there are plans for a cross-industry partnership to create the first standard methodology for automotive supply chain emission calculating and reporting – under the motto of “one industry, one standard.” The efforts will be led by ECG, VDA and other OEMs, who will develop a methodology for emission calculating and reporting based on the ISO 14083 standard, set to be published in Q3 2023.

Ambition amidst upheaval

The 28th ECG General Assembly & Spring Congress showcased the industry's ambitions in sustainability, digital transformation, and regulatory compliance. Embracing new technologies such as AI and exploring the potential of data analytics and predictive modelling in forecasting demand and optimising logistics processes can advance supply chain operations, efficiency, and customer experience.

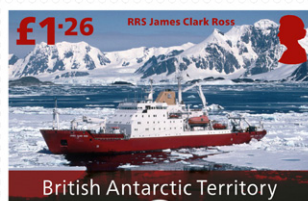
With its diverse range of presentations, interactive sessions, and networking opportunities, the gathering offered a platform for knowledge exchange to shape the future of vehicle logistics in Europe, allowing professionals and stakeholders to learn, establish new connections, and explore the potential for fresh collaborations. ■



Changing of the guard

by Marek Błus

Over the past few years, Australia, France, and the United Kingdom replaced the ships serving their antarctic scientific stations. The newcomers are, obviously, more modern, better, bigger, and stronger. The construction thereof also presented national celebration opportunities, especially in Australia and the UK (the same happened with their predecessors). What counted the most for us, collectors, were the numerous 'philatelic occasions' associated with welcoming the newbuilds as well as bidding the oldies farewell. Excluding issues outside the three countries and their dependencies, we got 16 stamps to rejoice in!



Traditionally, all Antarctic topics are reserved for the "independent" philatelic offices assigned to the administrations of the 'white southernmost desserts' claimed by the mentioned powers. And indeed, ships seem to be the most attractive topic here. The British Antarctic Territory (BAT) is especially keen on issuing polar shipping stamps (over 60), which depict all modern vessels (naval & civilian) involved in research and station supply. RRS *James Clark Ross* holds the record collection title with 15 philatelic portraits, of which BAT issued 14 and Tristan da Cunha – one (we omit another piece authorised by Togo's La Poste).

James Clark Ross climbed the ranks during her 30 years of service (1991-2021). That said, her heir, the brand new RRS *Sir David Attenborough*, is making a second trip to Antarctica, already having nine stamps! BAT released eight of these, while the ninth came from the Falkland Islands (with Stanley, the Islands' capital, being the ship's homeport; on a side note, two other stamps originated on African soil). We expect *Attenborough* to claim *Ross*' title in just a few years.

Both British vessels have welcome series that were issued during the construction process (but in the case of the older unit, only two stamps depict the ship). The farewell series, *The Final Voyage of the RRS James Clark Ross*, is a novelty. Then again, it wasn't 'goodbye forever': the vessel was sold to Ukraine in 2021. Renamed *Noosfera*, she continues her transport & scientific duties in Antarctic waters. The ship serves the Ukrainian Vernadsky Research Base and the Polish Arctowski Antarctic Station. It would be more than wonderful to see a Ukrainian stamp in the near future (better still, stamps!).

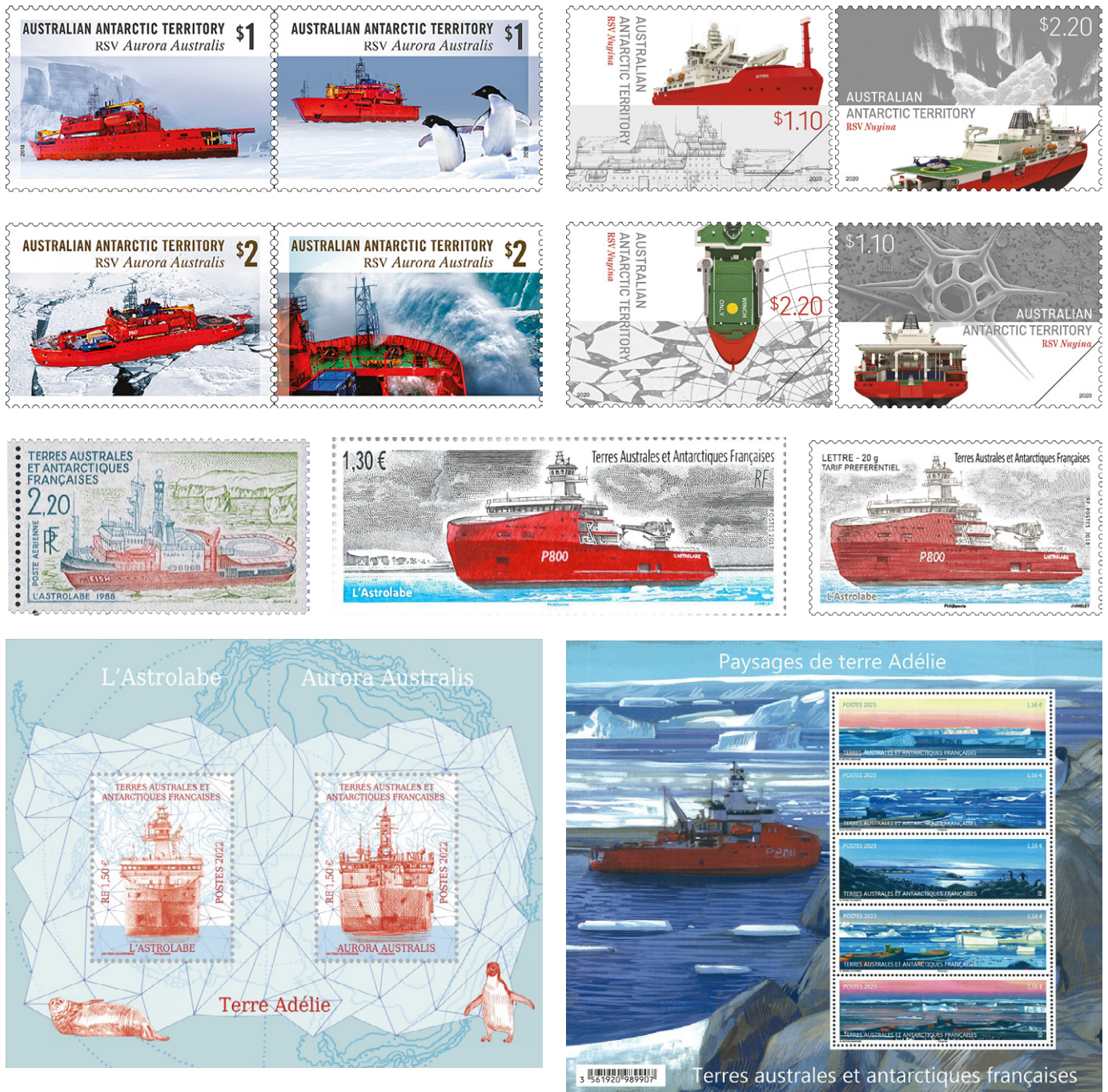
The Australian polar investment RSV *Nuyiana* (pronounced noy-ee-nah, meaning "Southern Lights" in palawa kani, the language of Tasmanian Aborigines) surpasses the British one in many aspects, particularly in size & power. However, she doesn't measure up to *Attenborough* in the number of stamps authorised by the Australian Antarctic Territory (AAT). *Nuyiana* is almost one and a half times bigger than *Attenborough* (gross tonnage of 22,826 vs GT 15,906),



but she has only four stamps in one series. Each is separately titled, although the names are not visible in the faces: 'Design,' 'Aurora Australis,' 'Icebreaker,' and 'Science Platform.'

RSV *Aurora Australis* (Latin for Southern Dawn) was the first Australian tailor-designed icebreaking research & supply vessel. She was built almost simultaneously with *James Clark Ross*, entering into service one year ahead of *Ross* in 1990. Even though the old Australian vessel surpasses its British contemporary in size (GT 6,543 vs GT 5,732), it only lived to see six AAT philatelic portraits: two in the welcome and four in the farewell series. The last one was issued in 2018, officially for the ship's 30th anniversary (laid up in 1988). The whole edition also includes a mini-sheet that repeats all four farewell stamps.

Contrary to *Ross*, *Aurora* didn't find a buyer from the world of science and went to the United Arab Emirates (under the Cypriot flag of convenience). It seemed like the 2018 edition would turn *Aurora's* philatelic light off, yet unexpectedly she made a comeback in a block



issued in 2022 by... the French Southern and Antarctic Territories (TAAF). RSV *Aurora Australis* accompanies the new French polar patrol ship *L'Astrolabe* – both are depicted on separate stamps. Probably this gesture is a token of gratitude as *Aurora* helped the French polar bases when *L'Astrolabe* suffered a severe mechanical failure in 2019.

Before moving from the Anglo-Saxon culture to the Francophone one, let us remember that British and Australian polar ships are national icons. Their names were chosen following national competitions. Moreover, VIPs christened them, just like the big passenger liners or battleships in the past (e.g., Queen Elizabeth II was *James Clark Ross*' godmother).

The French have a different attitude to the naming tradition – they consequently use *L'Astrolabe* after the sailing ships of two renowned French explorers and navigators: Jean-François de Galaup, comte de Lapérouse (1741-1788) and Jules Dumont d'Urville (1790-1842). The last polar *L'Astrolabe* was a small, secondhand converted vessel

(GT 1,753; ex-Canadian platform supply vessel), maybe not worthy of too many stamps. The new one, built in 2017 and belonging to the French Navy (so she bears a pennant number P800), isn't all that much bigger (GT 2,028), nor is she as richly equipped as her Commonwealth companions, but she's still an attractive subject for stamps. Her portrait from the 'welcoming' stamp, issued in 2017 (face value €1.30), was before long repeated on a shorter stamp without an iceberg in the background. The collection was then supplemented by the view of the bow in the mentioned TAAF block, and in 2023, she appeared in a painted body of the mini-sheet with stamps depicting Antarctic landscapes of Adélie Land. On top of that, two African countries added two stamps to her portfolio.

Because all the presented new vessels are classified as icebreakers, we wish them thicker than ice hulls – and even thicker stamp portfolios! ■

Ferrying – not fishing!

The *Solstice*. Nordic Painting 1880-1910 exhibition in the Polish National Museum in Warsaw presented 105 paintings from 20 museums in Scandinavia, Finland, and Iceland, some depicting scenes from Danish fishermen's lives. One piece of art – *The fishing boats leaving after sunset, Skagen, 1894-1895* by Peder Severin Krøyer – was especially attractive owing to its touching story (and maybe also thanks to its impressive dimensions: 136 by 226 cm). That said, we're not absolutely certain whether the Warsaw audience understood the story properly. Fishing boats stand for loggers on the roadstead, not white boats that ferry additional crew to the waiting vessels. The farewell we are witnessing is for many weeks, perhaps even months on end, over the demanding North Sea herring season. Not for a night of fishing like most of the viewers could have interpreted! Sadly, we're quite confident that there was nothing Danish art specialists could do to help in this regard...



Photo: Marek Blus

From duckling to ducky

The history of passenger shipping in the Baltic Sea includes an episode involving an aircraft carrier. Believe it or not, the former British *HMS Archer* plied between Stockholm and Helsinki carrying passengers – mostly Swedes – instead of aeroplanes. Then again, the story is more complicated than that. During WW2, the Allies converted many civilian ships into so-called escort carriers. Among them was the general cargo vessel *Mormacland*, built in the US in 1940. After one year of commercial service, she was requisitioned by the US Navy, remodelled, equipped with a flight deck, and transferred to the Royal Navy in 1941. Once demobilised, she resumed carrying freight and changed hands & names over the years before finally being purchased by Swedish Salen Shipping. Converted to a passenger ship and renamed *Anna Salén*, the ship mostly carried emigrants to America and Australia till 1955, but she also had her Baltic gig. In 1952, she served the Helsinki Summer Olympics, transporting Swedish fans to the Finnish capital, also functioning as a hostel. While as *HMS Archer*, she was one ugly duckling, the ship did blossom into a ducky passenger ship (indeed, more beautiful than most contemporary cruising monstrosities...).

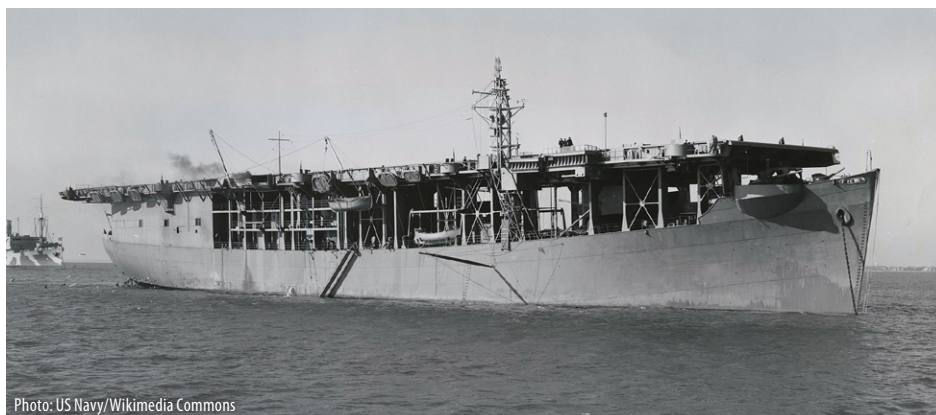


Photo: US Navy/Wikimedia Commons



Photo: National Maritime Museum of Sweden/Wikimedia Commons

Rail without rails?

The archives of the Finnish Heritage Agency include a picture titled *Rail transport in Finland 1959*. The caption couldn't be further from the truth! The steam locomotive is, perchance, a conversion, but there are no railways in sight (notice the track chains)! Other details also strike us: engine cylinders are vertically situated, the transmission is a drive shaft, and the log cargo rests on skids. Did some accident take this loco off the rails? Wooden beams support its front, insulation on top of the boiler is torn off, and the driver's platform looks bent. Mystery.

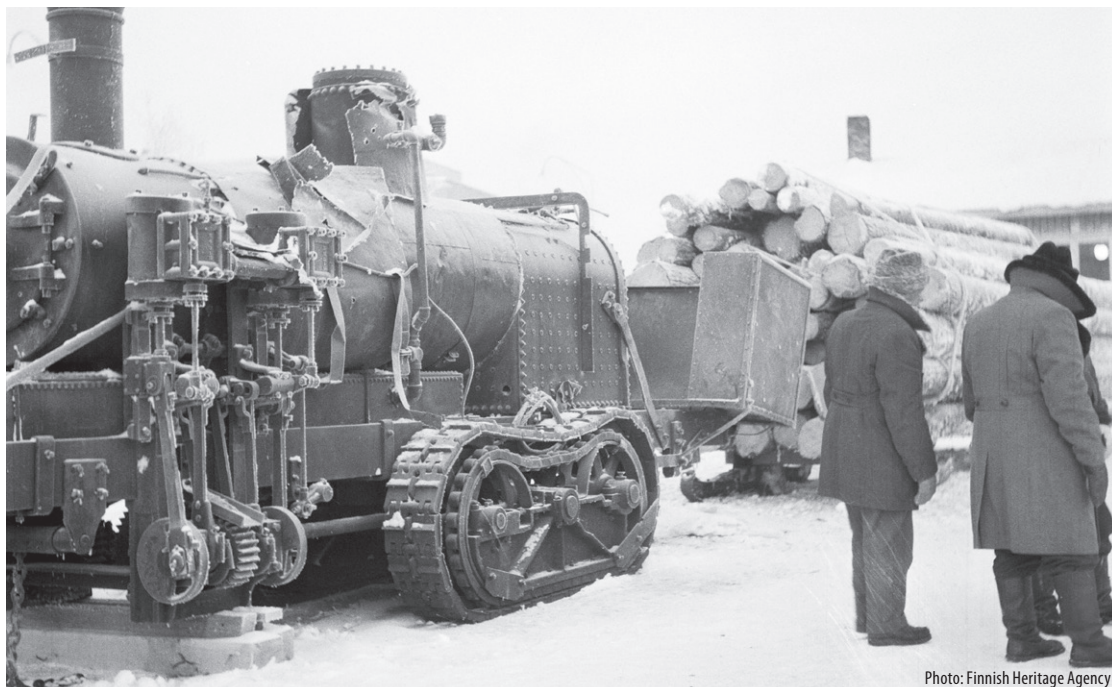


Photo: Finnish Heritage Agency

Describe your photos...

... because you never know what their fate will be! Bernt Bachlen (1899-1973) was a famous Norwegian aviator and hero of transatlantic and polar flights. He also had American citizenship and served in the US Air Force, commanding rescue units. He left behind a box with about 150 photographs documenting his life. The collection changed hands until the last collector's heirs donated it to the National Museum of Science and Technology in Stockholm in 2017. We looked through them and chose the prettiest one with six people sun-resting on the wing of a floatplane. Museologists briefly titled the photo "Bernt Balchen. Expedition participant on the wing of a flying boat" (!). What about the rest?! According to our detective work, the aircraft is a Northrop B2 Gamma, and the party obscures two writings: *Polar Star* (the craft's name) and "Ellsworth

Trans-Antarctic Flight" (mind the floats – planes up in the farthest south used skies, though, the landing technique is similar). The pair in the middle is Bernt Balchen (the one with the hat) and Emma, his wife. The 7-14-34 date in the bottom right corner informs us that the photo was taken between the first (Antarctic summer of 1933-34) and second (1934-35) expeditions, both unsuccessful (Balchen left Lincoln Ellsworth's team after the latter). The plane was repaired in Northrop's factory near Los Angeles, and a calm lake in California was probably chosen as a testing field. Let's add that the third expedition was successful: Ellsworth, accompanied by another pilot, crossed the Antarctic (but they didn't fly over the South Pole!). Done so, he donated *Polar Star* to the Smithsonian Institute, which is today displayed in the Air and Space Museum in New York.



Photo: National Museum of Science and Technology in Stockholm



Photo: Wikimedia Commons

WHO IS WHO



MARK ARGENTIERI
COO, TT Club

As part of its planned succession programme, the international freight & logistics insurer has promoted Mark Argentieri to a senior position. Argentieri has led the TT Club team in the EMEA region for the last three years, having previously gained experience with both the TT Club and the London Market in a range of marine classes of insurance, including port and terminal, forwarder and logistics operator cover. Argentieri graduated from the University of Kent and the Chartered Insurance Institute.



AMANDA BERGLUND
Infrastructure Manager, the Port of Piteå

The seaport in Sweden's north has employed up-to-date PEAB's Construction Manager in Skellefteå. Berglund holds a master's degree in road and water engineering from the Luleå University of Technology, specialising in construction. "It is a challenge to learn a new industry, but I am very curious, and I always want to do my best," she said upon her appointment.



HENRIK DAHLIN
CEO, Green Cargo

The Swedish national rail freight haulier has a new Chief Executive Officer in the person of Henrik Dahlin, who comes from MTR Nordic, where over the last two years, he was responsible for all of the company's operations in Sweden. He was also CEO of MTR Pendeltågen and MTR Tunnelbanan. Earlier, Dahlin, an alumnus of Lund University's Faculty of Engineering, was employed by, among others, DHL Freight Sweden and DHL Express.



GÖRAN ERIKSSON
CEO, the Port of Gothenburg

The Swedish seaport has a new chief exec coming from the GAC Group, for whom he had worked for almost 11 years, most recently as MD of GAC India. Earlier, Eriksson was with the Swedish shipping line TransAtlantic, starting there as Captain & Chief Officer and then going ashore to serve as Manager Commercial Operations Offshore & Icebreaking and later as Fleet Manager & Head of Ship Management. Eriksson is a multiple graduate of the Chalmers University of Technology.



CATARINA FANT
Director Brand & Communications, Wasaline

The up-to-date Head of Marketing of the Finnish-Swedish ferry company is now responsible for not only branding & communications but also sustainability affairs, including strategic investments and partnerships. Fant, an alumnus of the Hanken School of Economics in international marketing, also worked for Wärtsilä (lately as General Manager Marketing), Vacon (Corporate Brand Director), and NLC Ferry (Director Sales & Marketing).



MATTIAS HULTIN
Head of Operations Halmstad, the Port of Halland

The port authority running the Swedish seaports in Halmstad and Varberg has entrusted operations in the former to Mattias Hultin, who comes from Laholmsbuktens, an organisation responsible for municipal drinking water and sewage systems in Halmstad and Laholm. "The port is important for industry in Halmstad and for developing the municipality. It feels super exciting to be on board and develop the business," said Hultin.



KEVIN KING
Deputy CEO, TT Club

Like Mark Argentieri, Kevin King has also moved up the international freight & logistics insurer ranks. King is a twenty-six-year veteran of Thomas Miller, TT Club's management company, having held positions in several of its managed businesses in the US before moving to London in 2015 to lead TT Club's EMEA region and later serve as its COO. King is a graduate of the University of Texas at Austin and its Law Centre, as well as of INSEAD.



MIKE KONSTANTINIDIS
Managing Director Vessel Optimisation
and Head of Athens Office, ZeroNorth

Konstantinidis will head up a new business area focused on bringing high-frequency data captured by onboard sensors to the ZeroNorth platform, enriching its data analysis capabilities and giving further training input for existing data models. He has been working in the technology space for more than 35 years, joining the shipping industry just over six years ago, most recently as Co-Founder & CEO at METIS Cyberspace Technology.



VILLE KUITUNEN
Sales Director, Steveco

Kuitunen joins the Finnish stevedore from the Port of HaminaKotka's Director Traffic Operations post. Earlier, he worked for 11 years with Wallenius Wilhelmsen, first as Terminal Manager Operations & Quality and then as Managing Director Kotka Terminal. He holds degrees from the University of Turku (international shipping & commerce), the Kymenlaakso University of Applied Sciences (logistics), and the South-Eastern Finland University of Applied Sciences (project & sales management).



SUVI-TUULI LAPPALAINEN
HSEQ Manager, DPA & CSO, ESL Shipping

Lappalainen has most recently worked as Operations & Occupational Safety and Health Manager at the Port of HaminaKotka, meanwhile pursuing her PhD in Maritime Transport at the Tallinn University of Technology. She had also worked on board cargo vessels as Deck Officer earlier in her career. Lappalainen is a graduate of LUT University (holding a master's in biorefineries) and the Finnish Institute of Occupational Health.



LARS LERSTORP
Commercial Director Rail & Road, Scanlog

Lerstorp has spent the last three years working on developing Scanlog's multimodal sea freight solutions for northern Scandinavia. Prior to that, he held leading positions in the logistics industry at, among others, ASG, Danzas, DHL, Van Dieren Sweden, and Samskip. For almost 30 years, he has been working with multimodal solutions in rail, road, and sea freight.



MICHAEL ROSENKILDE LIND
CCO, the Port of Aalborg

The Danish seaport has promoted its Senior Commercial Manager to Chief Commercial Manager. Lind has been with the company since 2015, with responsibilities for sales within dry & liquid bulk, project cargo, and cruise. He will now work on developing Aalborg's strategic focus areas: green transformation, cargo & logistics, and the port's business park. Lind holds a diploma in international and domestic financial management from the UCN Business School.



VESA MARTTINEN
VP Cargo, the Port of Helsinki

The Finnish seaport has a new head of its cargo traffic business in Vesa Marttinen, a graduate of Aalto University (a master's in naval architecture & industrial management) and IMD (course in sustainability innovation leadership). Marttinen was, among many, a Senior Advisor and Transformation Leader at MarineCycles, CEO & Partner at Yepzon, MD of Wärtsilä's Eniram and Director of its Cruise & Ferry division, and MD of Turku Repair Yard.



MYRIAM NYSTRÖM
Commercial Director Sea Freight Solutions, Scanlog

Nyström, the company's up-to-date Operations Manager for Sea Freight, has been promoted to head one of Scanlog's three commercial product areas. She has been with the Swedish logistics company for over six years, starting as Logistics Specialist Sea Freight. Previously, Nyström worked for, among others, CMA CGM, the Hoyer Group, Scan Global Logistics, and Ecu Line.



CAMILLE PORGÈS
EVP Governance, Risks and Compliance, GEODIS

Porgès began her career in 2004 as a lawyer specializing in mergers and acquisitions at Clifford Chance LLP. In 2010, she joined Eutelsat as Senior Legal Counsel; she was promoted to Group Compliance and Privacy Director in 2017. In 2019, she joined the ATOS Group as Head of Ethics and Compliance and was appointed Chief Compliance Officer in 2022. Porgès graduated from the ESCP Business School and holds a postgrad in business law from Paris II Panthéon Assas University.



TECK SENG CHEW
Product Manager Port Operations, Continental Specialty Tires

Chew joined Continental in 2017 and has since performed different roles as Key Account Manager for port operations and as Technical Customer Service Manager for the Asia-Pacific region. In his new role, he will drive the strategic development of the port operation business and act as an interface to research & development, sales, quality management, and customer service. Chew graduated in mechanical engineering from the University of Sheffield.

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