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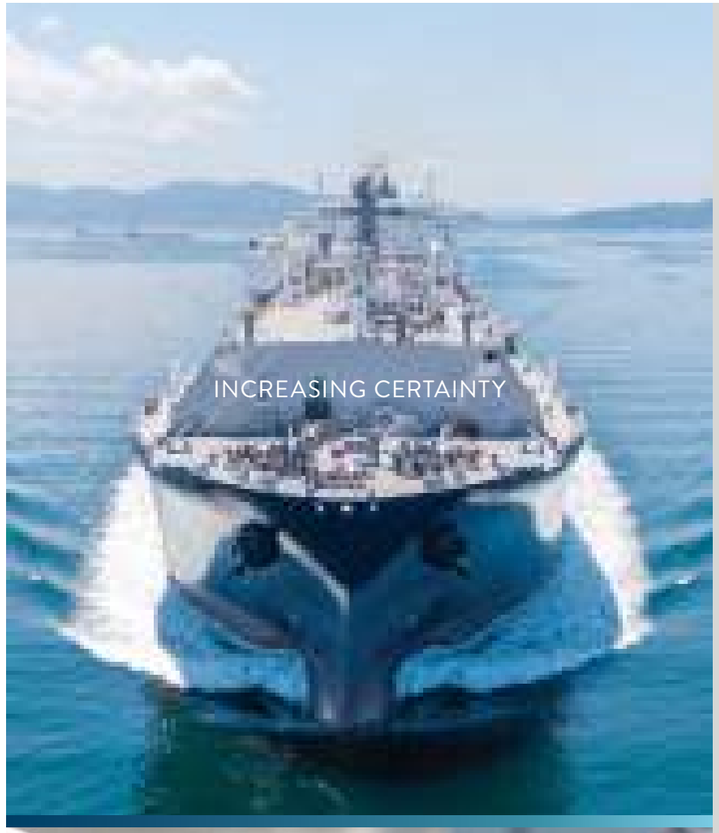

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"MY VISION IS FOR THE IMO TO EXCEL AS A TRANSPARENT, INCLUSIVE, AND DIVERSE INSTITUTION AS IT WORKS TO ENSURE A ROBUST REGULATORY FRAMEWORK THAT SUPPORTS SAFE, SECURE, AND ENVIRONMENTALLY FRIENDLY SHIPPING".

Page 20 - Arsenio Dominguez

"ACKNOWLEDGING THE INVALUABLE CONTRIBUTION OF SEAFARERS TO THE SHIPPING INDUSTRY IS CRUCIAL, PARTICULARLY IN THIS CHALLENGING AND FAST-CHANGING ERA".

Page 32 - Tatiana Petalas

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Operating ships for three generations

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EDITORIAL

The global shipping community is feverishly preparing for this year's Posidonia exhibition, which is on course for record participation. Since Posidonia 2022, the industry has faced significant challenges amid recent geopolitical developments. However, "while everything changes, everything also stays the same" for shipping. In this context, the exhibition will be a springboard for further in-depth discussions on the future of shipping. Considering that the decarbonisation of shipping goes hand in hand with digitalisation, the interest of exhibitors and participants will focus on the new technologies with which shipping companies will have to familiarise themselves in order to align with the requirements of international legislators. In light of the aforementioned ongoing trends, Naftika Chronika brings to its readership the insights of prominent figures who share their opinions and views on the required fleet optimisation steps, the benefits of AI, and the future of connectivity and telecommunications in the industry.

Furthermore, in this issue's pages, representatives of the global shipping industry's major social partners, such as the IMO Secretary-General, are setting the tone for the near future. Despite the continuous and sometimes unforeseen challenges, the shipping sector will always continue to play a pivotal role in enhancing the welfare of peoples around the globe. The significance of the Posidonia Exhibition reflects Greece's central role in European and global shipping. Notably, 60% of the EU-controlled fleet is controlled by Greek interests, while Greek shipowners control 21% of the worldwide merchant fleet in terms of dwt. Naftika Chronika's editorial team is sure that this year's Posidonia Exhibition will be another momentous celebration for international shipping that will bring together maritime professionals from across the seven seas.

Giannis Theodoropoulos

The IMO Secretary-General describes his vision for the organisation's future, discusses the state of emergency in the Red Sea and its effects on maritime trade, and highlights the need to improve the public image of shipping. Finally, he refers to the efforts for the green transition of shipping, the role that Generation Z will play in the evolution of the sector, and the IMO's initiatives to strengthen diversity and inclusion.

GEOPOLITICAL TENSIONS HAVE DRAMATIC IMPACTS ON THE SAFETY AND SECURITY OF INTERNATIONAL SHIPPING

IMO Secretary-General
Arsenio Dominguez

talks to
Giannis Theodoropoulos

1 What is your vision for the International Maritime Organisation?

My vision is for the IMO to excel as a transparent, inclusive, and diverse institution as it works to ensure a robust regulatory framework that supports safe, secure, and environmentally friendly shipping. I will focus on delivering this through four main pillars.

- **Our work**: We are committed to the successful delivery of our mandate, which covers a wide scope of issues, from maritime security and the safety of seafarers to protecting the marine environment, digitalisation and automation, and the human element.
- **Our support**: The IMO's support for its 176 Member States must be measurable and targeted to respond to countries' needs, particularly Small Island Developing States and Least Developed Countries.
- **Our image**: We need to enhance public awareness and visibility of the IMO and its work, given the pivotal role of shipping in global trade and economy.
- **Our people**: This involves attracting more people to work in the shipping sector, as well as cultivating a high-performing, motivated workforce in the IMO Secretariat.

2 What do you consider the most significant challenges of the shipping industry for 2024?

Geopolitical tensions are having dramatic impacts on the safety and security of international shipping, with seafarers, ships, and cargoes at risk. The attacks on international

IMO Secretary-General Arsenio Dominguez at Singapore Maritime Week 2024 (15-4-24).

shipping in the Red Sea are unacceptable - the tragic loss of seafarers' lives in the recent attack on the True Confidence is particularly devastating.
Innocent seafarers must not be made collateral victims. While there are far-reaching implications for global trade posing a direct threat to global supply chains, our primary concern is the safety of seafarers, who are simply trying to do their jobs.

❸ **In light of the Red Sea crisis, what initiatives has the IMO undertaken to ensure crew safety?**

We are closely monitoring the developments in the Red Sea and engaging in constant dialogue and diplomacy to try to ensure that seafarers, ships, and cargoes are protected. In such contexts, the IMO serves as a vital forum for bringing together stakeholders, including governments, partners, and UN agencies, to share information, find solutions, and provide assistance as needed.
More generally, the IMO provides long-term support to build the capacity of regional and national bodies to strengthen maritime security in the Red Sea through legislation, maritime security strategies, and information-sharing networks.

❹ **Does the shipping industry deserve a better public image, and if so, how can this be achieved?**

Shipping is not recognised enough for its essential role in daily life. Most of all the goods we use on a daily basis, including food, fuel, and electronics, are brought via ship. We need to tell the maritime story in a way that resonates with people and shows the sector's impact.
For this, I am keen to enhance media engagement and boost outreach to audiences beyond the maritime community. I am committed to transparency and making IMO information more accessible to the broader public, for example, through our website and social media.

❺ **Given the ever-changing legislative and technological landscape of the shipping industry, in which sectors do you believe shipping companies need to take further initiatives?**

The green transition in the maritime industry is unfolding at a rapid pace. However, there is a need to consider issues such as safety, pricing, infrastructural availability to deliver new fuels, lifecycle emissions, supply chain constraints, barriers to adoption, and more. Seafarers will require training to operate the new technology safely.
We need "early movers" in the industry as well as forward-looking policymakers to take the necessary risks and secure the right investments that will stimulate long-term solutions for the sector. However, I am encouraged to see that the industry is ready to embrace the journey to net zero shipping.

❻ **Does the shipping industry need regional measures for shipping?**

Shipping is a global industry, and as such, it requires global regulations. Because of the international nature of shipping – a ship can be flagged in one state, owned in another, and crewed by seafarers of different nationalities while sailing in the territorial waters of different states and international waters – global regulations are essential, and the IMO has consistently demonstrated this over its 76 years of experience.

❽ **Generation Z is entering the workforce. Does this new generation display any distinct characteristics? What does the shipping industry need to do differently in order to recruit and retain the talent found within Gen Z?**

Gen Z is a dynamic, digital generation. These young people have grown up with the convenience of the internet, social media, and electronics as part of their everyday lives. In this way, they are able to leverage digital tools perhaps more readily than others. They would

Shipping is not recognised enough for its essential role in daily life. Most of all the goods we use on a daily basis, including food, fuel, and electronics, are brought via ship. We need to tell the maritime story in a way that resonates with people and shows the sector's impact.

have a key role to play as shipping incorporates new technologies. It is crucial for us to adapt and meet them where they are. Gen Z values fulfilling careers that ensure their growth and mental well-being, and we can work on demonstrating that a maritime career is safe, fulfilling, and attractive.

❼ **Is the shipping industry on the right track regarding diversity and inclusion? Does the IMO have a role to play in aiding maritime businesses with guidance on best practices?**

In terms of gender diversity, a recent study by the IMO and the Women's International Shipping & Trading Association (WISTA) shows that women currently account for only 29% of the overall workforce in the general maritime industry and 20% of the workforce of national maritime authorities. The number of female seafarers is even smaller, with just 2% of the approximately two million seafarers worldwide being women.

We have made progress, but we definitely have work to do. For this reason, on the occasion of the International Women's Day in Maritime on 18 May, I will call on Member States and industry partners to do more to enhance gender equality in the maritime industry.

The IMO supports gender equality and the empowerment of women through gender-specific fellowships by facilitating access to high-level technical training for women in the maritime sector in developing countries, by creating an environment in which women are identified and selected for career development opportunities in maritime administrations, ports, and maritime training institutes, and by facilitating the establishment of professional women in maritime associations, particularly in developing countries.

The IMO Secretariat is leading by example: we have an internal Gender and Diversity Group, and gender is mainstreamed in the delivery of all IMO projects and programmes. We are striving to achieve gender parity amongst staff. I have appointed a gender-balanced senior management team and initiated a policy of refraining from participating in panels or events unless gender representation is respected. I encourage the maritime community to do the same.

❾ **The International Chamber of Shipping recently proposed the establishment of the Zero Emission Shipping Fund. How do you view this proposal?**

There are several proposals on the table for mid-term measures to reduce GHG emissions, covering two key elements:

- a technical element, namely a goal-based marine fuel standard regulating the phased reduction of marine fuel's GHG intensity and
- an economic element based on a maritime GHG emissions pricing mechanism.

Discussions are ongoing, while a comprehensive impact assessment is being carried out on the potential impacts of the different proposals on Member States. That said, the IMO is on track to adopt the final measures in late 2025.

Torben Carlsen, Danish Shipping's Chairman and CEO of DFDS, talks about the inclusion of shipping in the EU ETS and the industry's imperative for unity amidst challenges. Mr Carlsen delves into critical aspects of Danish shipping, addressing the measures taken to combat bullying and harassment on board ships and the key to attracting the younger generation to maritime professions.

UNITY IS A MUST

Torben Carlsen,
Chairman of Danish Shipping and CEO of DFDS

talks to
Giannis Theodoropoulos

1 The shipping industry has been facing significant challenges on the environmental front. Have these challenges enhanced the dialogue among shipowners' associations throughout Europe? How would you describe your relationship with the Union of Greek Shipowners?

Current regulations on climate and environmental matters have undoubtedly emphasised the need for dialogue and coordination among European shipowners' associations. Our European sister organisation, the European Community Shipowners Association (ECSA), has played a crucial role in facilitating this dialogue. In times like these, unity is a must, even if built on a foundation of compromise.

Within the ECSA, we maintain a strong and open collaboration with our Greek and European colleagues, regularly presenting shared positions. The bottom line is that our strength lies in unity, and while complete unity may not always be feasible, it allows for open discussions on opposing views. As major players in European shipping, Greece and Denmark have built a solid relationship of mutual respect over the years. We anticipate this relationship will only strengthen going forward as we share a common understanding of our differences and interests.

2 What outcomes does Danish Shipping expect from the implementation of the ETS? Do you think this measure undermines the IMO's role in guiding the industry's efforts to reduce shipping's environmental footprint?

With its inclusion in the EU ETS, the European shipping sector signals its willingness and commitment to being part of the solution to climate change. While there may be some initial flaws with the regulation since maritime transport is a new sector in the ETS, industry stakeholders and the European Commission have a genuine desire to ensure its effectiveness.

I disagree with the notion that the EU ETS has an undermining role. For more than 20 years, the EU has been calling upon the IMO to take action. The EU ETS prompted the IMO to deliver an ambitious strategy and a timeline, a significant and beneficial achievement for all of us advocating global regulations in the industry.

Following the IMO's historic agreement last year on a new strategy calling for climate neutrality by around 2050, there is now an ambitious schedule ahead. It is imperative that the IMO agree upon the global climate regulation for the shipping sector by the end of 2025, establishing one regulatory scheme for shipping, i.e., a level playing field for the entire shipping industry. The

IMO must also deliver a regulatory framework, including a fuel standard and a pricing mechanism. We need to bridge the gap between the cost of fossil and green fuels in an intelligent and efficient manner.

❸ Are there any viable solutions for the decarbonisation of shipping, particularly in the short-sea shipping sector?

Two main paths must be followed: energy efficiency and adopting green fuels and propulsion systems. There are still benefits to be gained from better energy efficiency, as the cleanest energy is the energy not used. This is a vital issue within the IMO, as the Carbon Intensity Index (CII) and the ETS will act as an incentive in this regard.
However, focusing solely on energy efficiency does not necessarily tackle the issue of absolute emissions, which is crucial to minimising climate impact. In this context, adopting green fuels is paramount for the industry to achieve climate neutrality by 2050.
A major challenge we face is scale. Many more green fuels are required than are currently being produced, and production facilities and infrastructure for these fuels need to be built. Nevertheless, this issue does not pertain solely to the shipping sector; collaboration with public authorities, infrastructure parties, and energy providers is essential to the success of the green transition.
Additionally, increasing the electrification of commercial short-sea vessels could also contribute to the solution for shipping. While renewable fuels are key, other technical initiatives are also relevant, especially when it comes to short-sea shipping. Therefore, I have high expectations for the dedicated maritime calls for proposals that will soon be announced by the EU ETS Innovation Fund.

❹ The forthcoming implementation of the FuelEU Maritime in 2025 has been welcomed as a step in the right direction by European shipping's stakeholders. However, is the European shipping industry ready, and can fuel suppliers provide clean fuels in sufficient quantities?

To conquer the future, one needs to prepare now, which is why we are facing relatively modest targets for the beginning of the FuelEU.
At the moment, several major shipowners are presenting green-fueled newbuilds, demonstrating the feasibility of such an undertaking.

As major players in European shipping, Greece and Denmark have built a solid relationship of mutual respect over the years. We anticipate this relationship will only strengthen going forward as we share a common understanding of our differences and interests.

However, scaling up is necessary and requires the commitment of the entire value chain, from fuel producers, engine manufacturers, and ports to shipowners, which may prove challenging. Scaling up would facilitate the commercialisation of ammonia engines or hydrogen production, which may serve as a basis for e-fuels.
Many interesting and promising developments are taking place, but there is still a long way to go before the green fuels necessary to decarbonise shipping are available.
The ETS, along with FuelEU, can be the answer to the industry's "chicken-and-egg" situation. These initiatives constitute a crucial step in creating incentives for shipowners and energy producers to secure both demand and supply of green fuels. Therefore, I am confident that a market will emerge.

❺ In a survey conducted by Danish Shipping in 2023, an alarming number of incidents of harassment on Danish-flagged ships were recorded. As the issue of inclusion is becoming increasingly relevant in shipping, what strategies are you implementing to prevent and manage such incidents?

Everyone, regardless of gender, nationality, or sexual orientation, should be able to work safely onboard a Danish-flagged ship without fearing bullying or harassment, and that is the end of the matter.
Therefore, Danish shipping companies have persistently focused on changing the culture onboard ships and ensuring inclusivity for everyone. It is a challenge that can only be solved through cooperation between industry stakeholders, the authorities, and trade unions.
Danish Shipping has contributed to drafting a series of measures aimed at preventing bullying and harassment onboard Danish-flagged ships, as presented by the Danish Minister of Industry, Business and Financial Affairs, Morten Bødskov, on February 5 of this year.
The measures include, among other things, targeted training for ship management and establishing better complaint mechanisms for victims of harassment or bullying. In particularly severe cases, courts should be able to prohibit an offender from serving on Danish ships. Furthermore, the Sea Health and Welfare Service will have more opportunities to prevent and handle cases of bullying and harassment.

6 How is the Danish shipping community tackling the shortage of Merchant Navy officers? What incentives are being offered, and how does the digitalisation of ship operations contribute to attracting young individuals to the maritime profession?

There are ample career opportunities in the Danish shipping industry, both onshore and at sea, ranging from technical problem solvers or mariners to visionary climate advocates.

It is essential for the industry to encourage young people to choose a maritime education or work in the shipping industry, ensuring they are aware of everything the industry has to offer.

To that end, Danish Shipping offers shipping-related teaching material to schools and is developing a "virtual ship" for pupils to explore. Additionally, we have collaborated closely with various shipping companies to create our own education programmes, such as the "Danish Shipping Education".

However, it is the shipping companies' responsibility to offer attractive working conditions, which they do. Danish shipping companies, in particular, have been investing in advanced technologies to modernise their fleets and operations. Hopefully, the opportunity to work with state-of-the-art technology and be part of the green transition will appeal to tech-savvy young people.

I am also pleased to report that an increase in the number of women choosing maritime education was observed last year. Historically, the shipping industry has not been good at recruiting women, and we are working very hard to change that.

7 Denmark is among the world's best performing Flag States. Through what strategies and initiatives is this excellence maintained? Will enhancing the competitiveness of European registries strengthen the voice of the European shipowning community within the IMO?

Denmark is renowned as a high-quality shipping nation, and customers know they can trust Danish shipping companies to deliver high-quality products and services.

With a long history as a proud seafaring nation, Denmark boasts a long tradition of maritime know-how and a well-educated workforce, which, combined with stable framework conditions, allow Danish shipping companies to compete globally. This winning formula provides an environment where innovative and ambitious companies can thrive and prosper.

Enhancing the competitiveness of European registries would undoubtedly give the European shipowner community a stronger voice in the IMO, which is essential for strategic reasons in the midst of geopolitical uncertainty. However, we must work together to drive the decarbonisation of global shipping forward.

Tatiana Petalas of Carras (Hellas) S.A. addresses the recent technological and regulatory changes in an interview featured in the special edition of Naftika Chronika. Carras (Hellas) S.A., with over a century of maritime heritage, was founded by John M. Carras, a towering figure in the history of international shipping throughout the 20th century. The Company has built and manages a number of modern Kamsarmax and Ultramax bulk carriers on behalf of its clients. Mrs. Petalas remains committed to upholding the innovative spirit that is the cornerstone of the Greek shipping.

TECHNOLOGICAL AND REGULATORY CHANGE MANDATES AGILITY & FLEXIBLE LEADERSHIP

Mrs Tatiana Petalas
of Carras (Hellas) S.A.

talks to
Giannis Theodoropoulos

❶ The M/V Aquataurus became the world's first vessel to earn the ABS Biofuel-1 Notation. In your opinion, are biofuels a reliable and cost-effective solution to reduce shipping's environmental footprint? Are there any other realistic options for achieving shipping's decarbonisation?

The M/V Aquataurus, managed by Carras (Hellas) S.A., is the world's first vessel to receive the ABS Biofuel-1 notation. The initiative to use biofuels is part of a sustainability strategy, aimed at reducing carbon intensity without significant investment costs as well as supporting both the company's and the charterers' decarbonisation efforts. This achievement was made possible with the guidance and cooperation of the American Bureau of Shipping.

In our opinion, biofuels represent a reliable option for reducing shipping's environmental footprint. However, they are not yet available in sufficient quantities from sustainable sources to meet shipping demand, let alone competing demand from the aviation, automotive and other industries. Additionally, biofuels are not yet particularly cost-effective, with B30 biofuel trading at a premium of about $150-200/MT to LSFO on the continent this month. It is also important to remember that for the emission benefit of biofuel consumption to be valid, the fuel itself needs to come from a sustainable source. When considering the use of biofuels, owners need to start preparatory work well in advance, in discussion with the charterer and supplier, ensuring that the vessel and crew are suitably prepared for their carriage and that the details of the actual supply are well-known and verified as compliant.

In terms of realistic options for achieving shipping's decarbonisation, we believe that there are several alternatives available now. These include reducing vessel speed on both laden and ballast legs, utilising more advanced silicone-based paints to reduce friction, investigating energy-saving devices, and using route planning software ashore and onboard to optimise voyages. All of these options are currently available and could help make a meaningful reduction in carbon emissions.

The M/V Aquataurus, managed by Carras (Hellas) S.A. became the world's first vessel to earn the ABS Biofuel-1 Notation.

❷ **Innovation seems to be a one-way street for shipping companies to meet contemporary demands and requirements. What challenges does innovation pose for the training of seafarers?**

Acknowledging the invaluable contribution of seafarers to the shipping industry is crucial, particularly in this challenging and fast-changing era. In recent years, with the introduction in the past decade alone of electronic main engines, ballast water treatment systems, scrubbers, and other new technologies, the training of seafarers has been of paramount importance. Significant amounts of training are a prerequisite for seafarers to operate this machinery efficiently and safely on a daily basis. In addition to technological innovation, seafarers are expected to monitor, log, and send increasing amounts of data to fulfil both charter party and emissions monitoring obligations. At Carras (Hellas) S.A., continuous training, whether ashore or onboard, in person or via e-modules, is a decisive factor in the safe and efficient operation of the vessels.

Innovation does pose a challenge due to the sheer amount of new technology, rules, and regulations to understand and comply with. There is no doubt that a structured training programme, starting as soon as possible after the adoption of new legislation or technology, is the most efficient way to stay up-to-date with the innovation that shipping demands.

❸ **What does the future hold for medium-sized companies amidst significant challenges on the environmental and technological fronts?**

Provided that a company stays ahead of the forthcoming environmental and technological regulations and innovations, which Carras (Hellas) S.A. has managed to do, one could argue that these changes present an opportunity rather than a threat. Our counterparties are looking to work with medium-sized companies whose modern, efficient, and well-managed fleets will not cause them operational problems and who are on top of the latest environmental regulations and technological advances. This simplifies their day-to-day operations.

In our experience, charterers are willing to discuss partnering and co-investing with select owners in order to implement upgraded paint schemes and install energy-saving devices. This is mutually beneficial, allowing them to save on fuel and reduce GHG emissions while increasing the efficiency of the vessels under our management.

❹ **What are your plans for the further development of Carras (Hellas) S.A.? Will you consider expanding to other types and sizes of vessels?**

Upon the completion of the current newbuilding programme, Carras (Hellas) S.A. will have a total of 15 modern, eco-bulk carriers in service under its management.

Carras (Hellas) S.A. would certainly like to expand into other areas and is willing to consider investing in other sectors, either as standalone projects or as joint ventures with partners. In addition, there is no doubt that the company enjoys an excellent and well-deserved reputation in dry bulk ship management, which we would like to leverage by potentially offering third-party management to other owners as well.

❺ **What, in your view, are the leadership skills required of a shipping company principal in today's world?**

The leadership skills required are certainly evolving as our industry changes. The core requirements of hard work, trust, and the ability to build relationships are a given, as in most industries. However, the current rapid pace of technological and regulatory change means that it is also crucial to remain agile, learn quickly, and show flexible leadership.

Leonidas Dimitriades-Eugenides advocates Generation Z's potential to revolutionise the maritime industry and calls for intergenerational collaboration to address environmental crises.

BLUE ECONOMY: A CATALYST FOR ELEVATING OUR CIVILISATION TO NEW HEIGHTS OF SUSTAINABLE PROSPERITY

by **Leonidas Dimitriades-Eugenides**,
President of the Eugenides Foundation and IMO Goodwill Maritime Ambassador

Generation Z comprises bright and passionate minds, representing the rising tides of change in the maritime world. In the present climate, ocean affairs call upon all generations, challenging them to collectively chart a new course into the future of the Blue Economy.

For the older generations who have spent decades in the maritime industry, the Blue Economy has long been understood as the vast economic frontier of opportunities across the ocean. From shipping, ports, fisheries, and tourism to energy and beyond, the seas hold an uncompromising promise as a sustainable engine of commerce, development, and job creation for humanity.

However, for Generation Z's techno-positive risk-takers and innovators, the Blue Economy represents something far greater; it stands as a defining challenge of our era, an all-encompassing call to meld economic ambition with ardent environmental stewardship and radical technological innovation. With the right approach, the Blue Economy can be the catalyst for elevating our civilisation to new heights of sustainable prosperity.

The urgency of this mission has been accelerated by the stark realities humanity is now confronted with. The existential threat of climate change and ocean degradation is no longer a hypothetical scenario but a clear and present danger. The Intergovernmental Panel on Climate Change (IPCC) has sounded the alarm on carbon emissions' devastating effects on marine ecosystems and biodiversity. Meanwhile, ocean plastics and chemical pollutants are defiling our once-clean waterways on a massive scale.

Addressing these compounding environmental crises is no longer an option; it is an intergenerational imperative. The maritime industries built by the previous generation now look to Generation Z to reinvent them with sustainable new operating models for the decades ahead. We can no longer afford to accept the status

While the seas we must now navigate are turbulent, Generation Z finds itself equipped with new stars to steer by, such as technologies that can bend the forces of climate change to our will and tools that can elevate our symbiosis with the marine environment to sustainable harmony.

quo of emissions, which creates economic burdens, resource depletion, and lax environmental governance. A profound technological and systems reset is required across the Blue Economy.

Fortunately, we do not entirely lack the tools to enact this transition. In this era of the Fourth Industrial Revolution, a full arsenal of exponential technologies is reaching cost-effective maturity, offering unprecedented opportunities to harmonise economic dynamism with environmental regeneration.

From cloud computing and the Internet of Maritime Things (IoMT) to digital twins, blockchain traceability, and additive manufacturing, we possess the ability to instil circularity and sustainability into every maritime operation and supply chain. Artificial intelligence and machine learning will be pivotal accelerants, optimising processes in real time for efficient resource usage and integrated decision-making.

But perhaps no other disruptive technology holds more promise than the continued breakthroughs we are witnessing in large language models and generative AI. With their capacity for multi-modal data processing, predictive analytics, and even coding autonomy, tools like ChatGPT and GPT-4 are already beginning to reimagine how we design ships, manage logistics, monitor terrestrial and marine environments, and empower humans with cognitive augmentation.

The applications extend into every Blue Economy domain, including smart ocean farming, autonomous offshore robotics, and fuel-optimising routing systems. What previously required decades to learn, these language models can expedite through foundational modelling and constitutional dissemination. They are true intelligence multipliers poised to rapidly advance our maritime technological renaissance.

Nevertheless, as powerful as these innovations may be, we must not succumb to the misguided vision of a “tech solutionism” devoid of human mastery. Tools like AI can never supplant the indispensable element of the newest generation’s inspired leadership. Rather, these tools must serve as enabling engines, helping to unleash the fullest extent of Generation Z’s creativity and daring.

Education remains the industry’s guiding force in realising this fusion of human and artificial intellect for a thriving Blue Economy. The Eugenides Foundation has radically re-envisioned maritime studies and vocational curricula to incorporate emerging tech directly into skills training. The Foundation’s AI for Oceans initiative is creating novel programmes blending multidisciplinary coursework in data science, machine learning, and environmental systems customised for tomorrow’s maritime leaders. Finally, we have established an AI Competency Centre to ensure that the next generation of Greek mariners will board vessels fully equipped with the digital literacies necessary for success.

So, while the seas we must now navigate are turbulent, Generation Z finds itself equipped with new stars to steer by, such as technologies that can bend the forces of climate change to our will and tools that can elevate our symbiosis with the marine environment to sustainable harmony. Generation Z, positioned as the rising leaders of the Blue Economy, must embrace their role as architects of the global ocean we envision, an ocean of opportunity, ecological rejuvenation, and enduring human prosperity.

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Historically, the voyage towards an environmentally sound shipping sector began approximately 50 years ago when the world recognised the need to protect our planet – the marine environment, in particular – from all sources of pollution.

MARPOL: CELEBRATING 50 YEARS OF A SUCCESS STORY

Speech by
Sir Efthymios E. Mitropoulos, KCMG
Knight Commander of the Order of St Michael and St George, Secretary-General Emeritus of the IMO and Charmain of the ''Maria Tsakos'' Foundation, during the conference organised by Isalos.net on the occasion of World Maritime Day 2023 with the theme "MARPOL at 50 – Our commitment goes on"

Accidents at sea, especially those with heavy loss of life and catastrophic pollution, always serve as a grim reminder of the perils of the sea and as a strong catalyst for action.

Of such accidents, the one that went down in the annals of contemporary maritime history involved the "Exxon Valdez" supertanker. The fully laden vessel was stranded off the coast of Alaska in March 1989. Its disastrous impact on that pristine sea area and coast prompted Congress to require ships and tankers to be built with double hulls.

The "Exxon Valdez" disaster had been preceded by those of the "Torrey Canyon" supertanker off the coast of Cornwall in March 1967 and the "Amoco Cadiz" crude carrier off the coast of Brittany in March 1978. Together, the three accidents resulted in the spillage of almost half a million tonnes of crude oil into the sea.

Allow me to make a brief remark since this conference was convened on the occasion of this year's celebration of World Maritime Day (WMD). On the very same day in March 1967, when the "Amoco Cadiz" ran aground off the northwest coast of France, the IMO and the entire maritime community were celebrating the first WMD since the IMO had decided to include such a day in its calendar. Some saw it as a bad omen. Adding to the unfortunate timing, one year later, in March 1979, the "Olympic Archer" tanker sank off Newfoundland's coast at the Gulf of St. Laurence's entrance, spilling its entire crude oil cargo. Following the concerns raised by the residents of the south bank of the River Thames, and upon realising that March in the northern hemisphere, especially in the North Atlantic, is full of nasty storms, it was decided to move the WMD celebration to the last Thursday of September. This time, the date was spot on.

Of the disasters that followed, the "Valdez" incident in Alaska was the most significant. From the volume-of-oil-escaping-into-the-sea point of view, significant were those involving the following tankers: the "Aegean Sea", which ran aground on the coast off La Coruna, in December 1992; the "Braer", which also ran aground off the Shetlands in January 1993; the "Sea Empress", a single hull tanker stranded off Milford Haven in February 1996; the "Erika", off the Western coast of France in December 1999; the "Prestige", which broke in two and sank off the coast of Galicia in November 2002, and the "Castor. The latter had become an outcast since the eve of 2021 when it suffered serious cracks on its deck while in heavy seas and fully laden condition. Fearing it would sink and cause pollution, the "Castor" was not allowed to sail into several Mediterranean sea ports for repairs and to discharge its cargo for almost ten days, eventually prompting the IMO to adopt guidelines on Places of Refuge. The aftermath of the "Prestige" accident also contributed to that decision.

There were other incidents, which, although catastrophic in terms of their deleterious impact on the marine environment, did not receive as much notoriety, especially those that had happened in the northern hemisphere.

The common thread between those disasters, and others of lesser significance, was the way the IMO and the industry responded to the weaknesses in the design, construction, equipment, crewing, and operation of ships – tankers in particular – which

were identified following an extensive and thorough investigation into their causes.

The outcome of the IMO's deliberations on those casualties took the form of successive amendments to the organisation's most crucial environmental convention, the International Convention for the Prevention of Pollution from Ships – the now well-known MARPOL Convention. The convention, whose 50th anniversary we are celebrating this year, was adopted at the end of an international conference convened by the IMO in 1973. In 1978, MARPOL was supplemented by a Protocol, which was deemed necessary in order to make the Convention more attractive for Governments to ratify and thus facilitate its entry into force. Beyond tackling operational and accidental pollution from oil, the MARPOL Convention addresses all other sources of marine pollution, including pollution caused by noxious liquid substances, harmful substances in packaged form, sewage, and garbage. The Convention dedicates one chapter to each of these five sources of pollution.

The MARPOL Convention was preceded by the International Convention for the Prevention of Pollution of the Sea by Oil—the OILPOL Convention. This Convention was adopted by an international conference convened in London in 1954 at the British Government's instigation. It was assigned depositary duties and responsibilities after a series of tanker casualties resulting in significant pollution of the seas in the early 1950s and because, at the time, the 1948 Convention establishing the IMO had not yet come into force. That happened in 1958, while its first major undertaking occurred two years later, in 1960, with the convening of an international conference to revise and update the 1932 International Convention for the Safety of Life at Sea (SOLAS). SOLAS, of course, has a fascinating history, with its first version having been adopted in 1914 as a result of the tragic loss of the "Titanic". Originally, the IMO entrusted the consideration of marine pollution matters to a mere sub-committee under the Maritime Safety Committee. That was until the organisation began producing legislation that could not be accommodated within the SOLAS Convention, which was not deemed suitable to tackle the matter efficiently. In response to a growing demand to intensify the efforts to curb pollution from ships, the sub-committee was upgraded to the status of a fully-fledged Committee, namely the Marine Environment Protection Committee (MEPC). Nowadays, eighty sessions later, the MEPC is given credit for a solid edifice of legislation addressing all possible sources of marine and atmospheric pollution.

On a more personal note, I think there cannot be a reference to the birth and evolution of the MARPOL Convention without mentioning Yoshio Sasamura, a Japanese naval architect, an IMO international civil servant, and the first Director of the Organisation's Marine Environment Division. Mr Sasamura's contribution to the development of MARPOL's structure and contents into the highly valued legal instrument it is today was instrumental. This is true for the entire extent of MARPOL, save for Chapter VI on Air Pollution from Ships, which was developed towards the end of Mr Sasamura's life. Paying tribute to his legacy on this solemn occasion is the least I can do as his grateful companion.

MARPOL is not the only IMO Convention that has pursued the noble objective of keeping the marine environment clean. Today, there is an extensive regulatory regime for protecting the seas and ensuring ships' safety throughout their lifecycle, including a set of legal instruments on civil liability and compensation for victims of pollution incidents. In their totality, technical and legal conventions have co-existed in harmony for the best part of three decades, contributing to a most welcome and substantial reduction of casualties at sea and marine environment pollution. This success underscores the effectiveness of the two major IMO Conventions (SOLAS and MARPOL), supported by more than thirty other relevant legal instruments. Nowadays, people talk about the all too frequent extreme weather conditions and their catastrophic consequences. One may then wonder what the impact of the work of IMO in general, and MARPOL in particular, is within the wider context of climate change. Although shipping is responsible for a relatively low percentage of CO_2 emissions (approximately 2,8% of the world total, within a total 27% of all modes of transport of all sources of CO_2 emissions) compared to civil aviation (3%) and road transport (21%), it has responded responsibly to the challenges posed by the anthropogenic climate change by taking a series of demonstrable initiatives. In doing so, it has shown due compassion for the environment and a determination to act timely and appropriately to reduce its footprint. That is notable, even though the 2015 Paris Agreement makes no mention of it and despite the flaws identified in the 1997 Kyoto Protocol as the first addition to the United Nations Framework Convention on Climate Change to the UN Framework Convention on Climate Change (developed after the UN Conference and Development, held in Rio de Janeiro in 1992).

It should be acknowledged that shipping was the first industry to adopt—via the IMO—and implement compulsory measures aimed at improving its energy efficiency record through technical and

MARPOL is not the only IMO Convention that has pursued the noble objective of keeping the marine environment clean. Today, there is an extensive regulatory regime for protecting the seas and ensuring ships' safety throughout their lifecycle, including a set of legal instruments on civil liability and compensation for victims of pollution incidents.

operational requirements while still elaborating on market-based measures. However, despite the strenuous efforts of both the IMO and the industry, we cannot claim to have reached the end of the road, as there is still much to be done. As we continue our quest for a clean environment, it is crucial to ensure that any new measures required are well thought of, reasonable, sensible, balanced, workable, and viable, and commensurate with the industry's share of responsibility in the world total of greenhouse gas emissions.

As recently as July 2023 and against all odds, the IMO successfully revised its Strategy for the Reduction of Greenhouse Gas Emissions from Ships. Thus, it has modified its roadmap, leading to the decarbonisation of the shipping industry by reducing its annual GHG emissions by at least 20%, striving for 30% by 2030, and by at least 70%, striving for 80% by 2040. These percentages were set against the prevailing situation in 2008, with the end goal of achieving the net zero carbon emissions target by 2050, as mandated by the UN for the entire world and established by COP27 in Sharm el-Sheikh, Egypt in November 2022 (COP28 is scheduled to take place in Dubai, UAE, at the end of November to 12 December 2024).

In the meantime, efforts towards a green energy era should continue unabated as per this meeting's theme: "Our commitment goes on". Such efforts include—among others—work on bunker fuel and related matters, such as slow steaming, industry consolidation and fleet optimisation, vessel design and economies of scale, shorter routes, automation, digitalisation, fuel switching, battery-powered vessels, and autonomous ships.

To celebrate MARPOL's 50th anniversary, we have gathered this evening in an iconic building, which, over the long time of its existence, has witnessed events of great historic importance and significance, including the IMO International Conference back in 1974, when the Athens Convention relating to the Carriage of Passengers and their Luggage by Sea was adopted, and is also where the opening ceremony of the "Year of the Seafarer" took place in 2009, in the presence of the late President of the Hellenic Republic Karolos Papoulias. Therefore, the President of the Eugenides Foundation and his associates are to be congratulated for a job well done!

The purpose of this Conference is to take stock of the achievements of the global maritime community, under the auspices of the IMO in its perennial efforts to safeguard maritime safety—the IMO's raison d'être—and to protect and preserve the environment—both marine and atmospheric—from the impact of shipping operations.

In recognising the beneficial impact of the IMO's work as a whole, it is also essential to acknowledge the broad and effective implementation by governments and the industry alike of the Organisation's two major conventions, namely SOLAS and MARPOL, in safeguarding life at sea (SOLAS), and keeping the marine environment—as well as the atmospheric environment as of late—clean (MARPOL), by reducing both operational and accidental pollution. SOLAS has made ships safer by enhancing their design, construction, and equipment standards alongside the education and training of seafarers in conjunction with the STCW Convention. MARPOL has significantly brought down operational pollution by addressing onboard activities to neutralise the impact of all sources of marine pollution on the environment.

In summary, fewer accidents equal fewer lives lost at sea, reduced onboard operational errors and weaknesses, and less marine environment pollution.

All of this leads to the fair recognition of the IMO's beneficial impact as the shipping industry's regulator, which is supplemented by the invaluable contribution of flag state governments, port and coastal states, shipowners and operators, seafarers, and everyone else (shipbuilders, class societies, equipment manufacturers, suppliers, and others) that bear the heavy responsibility of implementing IMO rules and regulations. In their totality, all these parties compose the impressive edifice of a well-regulated, well-managed, and orderly industry.

As we celebrate 50 years of MARPOL's undeniable success, it is crucial to acknowledge the paragons of that success, who have worked hard and continue to do so to ensure safer shipping and cleaner oceans.

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The President of Louis Dreyfus Armateurs S.A., Philippe Louis-Dreyfus, elaborates on the main challenges currently facing the shipping industry, from environmental regulations and technological uncertainties to concerns about the industry's public image.

EUROPEAN SHIPOWNERS TRYING TO CHART THE FUTURE OF SHIPPING

Philippe Louis-Dreyfus, President of Louis Dreyfus Armateurs S.A. and former President of ECSA & BIMCO

talks to
Giannis Theodoropoulos

1 In light of the current surge in environmental regulations in the shipping industry at a time when all available technological solutions have uncertain results, you have frequently advocated speed reduction to minimise shipping's carbon footprint. Why do you think such a proposal is not being heard by international legislators even though it can be implemented immediately and have definite results?

For many years now, I have been advocating speed limitation as an obvious solution for reducing maritime emissions. This idea is easy to understand - all car drivers are aware of it; speed limitation carries no substantial cost and is immediately efficient. Normally, it should also be easy to implement. However, as you have mentioned, it has faced criticism, if not outright opposition, much of which is irrelevant.

I have always emphasised that speed limitation should be applied to bulk transportation, leaving out ferries and liner services, for which speed is considered of high importance. In any case, bulk/tramp shipping alone accounts for over 70% of world shipping. Nevertheless, some shipowners in the ferry or liner business still felt worried and did not support the idea in the beginning.

Also, any such measure should not only apply to France or Europe but worldwide and must be decided and implemented by the IMO, which unfortunately could not garner a majority for such a decision. That really came as a surprise.

Lastly, I am not convinced that everyone in the maritime cluster favours such a measure. Clients and charterers, who often have a short-term perspective, see more problems than advantages in speed reduction. There is also a lot of profit to be made from discovering the most appropriate fuel and the most efficient engine or ship design, even though these are neither immediately efficient nor the most economical solutions.

All of this is deeply disappointing. However, the new regulations on shipping are stringent enough to make speed reduction the only possible solution until new technologies become available.

The EU shipping industry should be better promoted by our governments as this is essential to our sovereignty, independence, and autonomy. Shipping offers incredible career opportunities, fostering high technical competencies, as well as an openness to the world that is quite unique.

❷ You recently mentioned that one of the major risks for shipping is not effectively communicating its contribution to the global economy. In your opinion, what is causing this looming risk, and what steps can the shipping industry take to improve its public image?

As President of the ECSA and BIMCO, I was faced with the issue of the public image of shipping.

We are all well aware of our contribution to the world, the economy, and the people. But here is the risk: being too sure of our value can sometimes make us a little arrogant and not keen to explain! We do not understand that the good image we have of ourselves as an industry is not always shared by the public and, hence, politicians. In fact, our once positive or, at worst, neutral image seems to have deteriorated over the past decade. In a few words, we are currently facing four different issues.

To begin with, as far as the environment is concerned, we used to be seen as more of a solution than a problem. However, this has changed over the past years, and it is partially our fault; we have been dragging our feet a little too much when we should have been more proactive. This was one of my biggest fights when I was at the helm of ECSA and BIMCO.

Secondly, in terms of macroeconomics, the volatility of freight rates and their massive increase in the post-COVID years have led to us being perceived as responsible for inflation and the increase in the cost of goods. The large profits made by some shipping companies certainly have not helped! Moreover, as far as politics go, some European shipowners have, rightly or wrongly, faced criticism for not always adhering to the European decisions concerning the war in Ukraine.

Finally, in terms of work relations, a number of shipowners do not seem to be treating their crews with the respect and consideration they deserve. Social dumping is not only unacceptable but also a danger to our image.

All these reasons have contributed to the deteriorating image of our industry in the last few years. The public, the consumers, and the people reading newspapers see us more as profiteers than providers. That may very well have an impact on politicians, who will think twice before deciding to maintain the state aid guidelines and the tonnage tax, which are essential to our activity.

❸ What are the main challenges faced by the French shipping industry?

Similarly to our fellow European shipowners, our main challenges are, firstly, financing our decarbonisation targets, as our decarbonisation pace will be determined by the financial means available; therefore, directing ETS funding towards the decarbonisation of shipping is a must. The next challenge is preserving our social model. Social dumping is a threat that jeopardises the very nature of our industry, as well as its main preservation instrument, i.e., the EU state aid guidelines, which allow the EU shipping industry to maintain its competitiveness amongst world competitors. Consequently, as I have already mentioned, we need to ensure that our EU State Aid guidelines, and especially the tonnage tax, will be maintained. It is also imperative that we adapt our educational system to new shipping challenges, such as new fuels, shipping digitalisation, etc. Last but not least, there is a lot of complementarity between French and Greek shipping, not only in terms of shipping activities but also on a political level, particularly in Brussels, where we can make the voice of shipping heard.

❹ One of the most significant challenges shipping companies face when adopting and using new technologies and fuels is the lack of funding. How can this funding gap be filled? Have you detected any differences in shipping finance compared to previous years?

Shipping is clearly a capital-intensive activity. Raising funds for our ships has always been a challenge, for some more than others. Nevertheless, globally, it was never a real issue for the profession. Almost everybody could be financed at 90%, 70%, or 50%, with margins from 0.5% up to 3 % or 4%.

This is not true anymore. The quality of the borrower and the ship itself is still

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important, but the availability of funds for a certain type of activity has become decisive. In the last ten years, shipping finance has entered a completely new "ecosystem".

The credit crunch started after 2010, triggered by the 2007-2010 subprime crisis. Then came the new "Basel 4" regulations for banks, further reducing their interest in shipping and causing a rise in financing from Chinese banks.

Today, priority is given to green projects, posing challenges for shipowners who need finance, especially if they are handling "classic" cargoes in modern - but definitely not green—ships. In the meantime, the future of green shipping, green ships, and green fuels is ambiguous. When will they be available? What will their price and cost be? Both shipowners and banks are faced with difficult decisions and risks prior to making any investment.

It is certain, however, that the cost of transporting goods will rise and then be passed on to clients and, ultimately, consumers, which means it will be the end consumers who will have to pay the cost of decarbonisation. This fact is not being clearly stated!

Regarding the finance issue, we must fight hard to ensure that any funds raised from taxes paid by the shipping industry will be used to finance its fuel transition.

5 Your company is investing in innovative projects to reduce its fleet's environmental footprint. What do you believe to be the most viable solution for the future of shipping?

It is very hard to predict, as no one knows what the future will bring and at what pace it will happen. But there are some principles we can have in mind to prepare for our fuel transition in due course: e-fuels (or any other decarbonised fuel) will be much more expensive, even when massively produced, as economies of scale will never offset the price difference with standard diesel oil. And, again, it is the end customers who will pay for them. Therefore, the success of our decarbonisation will depend primarily on social acceptance and the willingness of customers to pay more for maritime transport. Also, besides being produced, decarbonised fuels must be made available worldwide, which will not happen overnight! Sail propulsion and every other innovation will be helpful, but it will never entirely replace fuel propulsion, given the need to carry 11 billion tonnes of cargo every year.

6 One of the major challenges in shipping's green and digital transition is the acquisition of the necessary skills not only by seafarers but also by onshore staff. How can the European shipping industry promote the reskilling and upskilling of its workforce while simultaneously attracting new professionals?

The EU shipping industry should be better promoted by our governments as this is essential to our sovereignty, independence, and autonomy. Shipping offers incredible career opportunities, fostering high technical competencies, as well as an openness to the world that is quite unique.

I believe that we, as shipowners, need to portray our businesses in a much brighter, more transparent, and appealing light. In my view, investing a lot more energy, time, and money is essential to restore our image and demonstrate our significance to the economy.

John Platsidakis with his extensive experience comments on the shipping industry’s current environmental regulations and how recent pirate attacks have affected the industry's public image. He also describes how Greek shipping's hands-on management has been its competitive advantage that has led to its significant growth.

GREEK SHIPPING HAS SHOWN REMARKABLE ADAPTABILITY TO MARKET CHANGES

John Platsidakis,
Honorary Chairman
of INTERCARGO,
talks to
Giannis Theodoropoulos

❶ **Given the recent surge in attacks against merchant shipping, do you think international regulators have overemphasised environmental regulations without achieving the expected results?**

Indeed, shipping regulations have been overemphasised on their own merits. The relatively low environmental footprint of shipping - 2.3% of total CO_2 emissions when compared with the work done - does not justify the unmanageable flow of shipping-related regulations and the valuable time spent on them by several tens, if not hundreds of thousands, of people engaged over millions of hours.

❷ **The recent surge in attacks against merchant shipping reflects the failure of institutions to ensure a safe environment for seafarers. Do these attacks jeopardise the public image of shipping?**

Well, yes, it does arouse a negative feeling among young people who may be considering a career as crew members on merchant ships, although we should keep in mind that there are more than 100,000 ocean-going ships in service. These attacks, which may be from pirates or otherwise, are indeed creating a problem for shipping; however, putting the direct blame on institutions may be unfair. It would be fairer to address this negative criticism towards official entities, i.e. governments, when they are reluctant to safeguard the smooth operations of shipping, e.g., ensuring the fair treatment of seafarers when they find themselves in ugly situations beyond their responsibility and control.

❸ **What is the most significant challenge when it comes to shipping's green transition?**

The major challenge is that shipping, i.e., ships, are asked to comply with regulations that have been adopted without consideration of whether the means to do so are available in the market and, if they are, whether they are economically viable. I will repeat myself, as I have been doing for the last eight or so years, by saying that

Education is a long-term process, and in the case of maritime education, it requires a holistic approach, including the analysis of past performance, the description of present status, and setting goals with specific timelines for implementation and progress evaluation.

shipping companies are not shipyards, engine manufacturers, or bunker producers. Shipping companies simply buy what is available on the shelf and what makes commercial sense. Why are car owners treated in a different way than shipowners? Owning a car or a ship should not make a difference as far as environmental regulations are concerned.

❹ **2024 has been declared the year of maritime education by the Ministry of Maritime Affairs and Insular Policy. On which areas should the social partners of the Greek shipping community focus in order to enhance the country's maritime education system?**

Facts make the difference in life. I would be delighted to celebrate when plans and visions are materialised. Education is a long-term process, and in the case of maritime education, it requires a holistic approach, including the analysis of past performance, the description of the present status, and setting goals with specific timelines for implementation and progress evaluation.

❺ **With your extensive experience in managerial positions within the shipping industry, what advice would you give to the manager of a modern shipping company today? What has changed compared to the past?**

There is a shortage of new shipowners who grew up either as seafarers or are familiar with the day-to-day operation of ships. Ships, being active assets operating at a significant distance from the management offices, need close monitoring and well-established follow-up procedures. They cannot be seen as just other assets. Greek shipping has been substantially enhanced over the decades thanks to close hands-on management. This will be a major challenge in the future.

❻ **In recent years, we have witnessed conglomerates without a specific strategy opportunistically entering shipping due to the strong performance of freight markets. Does this rapid penetration of conglomerates into shipping pose a challenge for Greek entrepreneurs?**

Greek shipping has shown remarkable adaptability to market changes, so this is not a concern for me. If external investors enthusiastically enter the shipowners' market due to robust freight markets, they may soon realise its volatility.

❼ **What is your view on the efforts to revive the Greek ship repair industry? What is the potential role of domestic shipyards in aligning the shipping industry with environmental regulations?**

I recall the ship repair industry in Piraeus in the 1980s and 1990s and how much it was supported and favoured by the Greek shipping companies. Regrettably, other people had different objectives and, by their actions, favoured the ship repair facilities of neighbouring countries. The ship repair industry's human resources have been reduced significantly over the years, so a very determined effort is needed to re-establish it. Ship repair facilities and shipyards certainly have a role to play and are very welcome.

In the following pages, Arkadiusz Marchewka, Deputy Minister of Infrastructure in Poland responsible for the Maritime Economy, Water Management, and Inland Navigation, reveals the priorities of the Polish government concerning maritime transport, highlighting the central role of ports in the country's economy. Additionally, Minister Marchewka discusses Poland's environmental agenda and the impact of geopolitical tensions on maritime traffic in its ports.

POLISH SEAPORTS HAVE BEEN INVOLVED IN HELPING UKRAINE

An interview with **Arkadiusz Marchewka**, Poland's Deputy Minister of Infrastructure

by Manos Charitos

1 What are the Ministry's current priorities in developing Poland's inland supply chain? Are there aspirations to expand Polish inland waterways and strengthen their role in Poland's economy?

In order to strengthen the role of inland navigation in Poland's transport system and, at the same time, the economy, we are focusing on improving and maintaining navigational conditions on the sections of the rivers Odra and Vistula used for regular transport operations. These plans are mainly related to the urgent revitalisation of hydrotechnical facilities and the removal of obstacles to navigation in the hinterland of the seaports in Gdańsk, Szczecin, and Świnoujscie. The development of digital services provided on inland waterways is one of Poland's priorities in terms of building a coherent country transport system, including inland waterway transport. We are developing the River Information System (RIS) and introducing it to subsequent sections of waterways. At the same time, we want to digitise the services of maritime market entities: we are working on introducing shipping administration e-services such as an electronic database of documents for crews and ships, the possibility of electronic applications for issuing documents, and the digital collection of fees for the use of waterways and hydrotechnical devices.

Polish seaports are also used by entities located in, among others, the Czech Republic and Slovakia. For this reason, it is in the European interest to ensure that they operate properly.

❷ What are the upcoming infrastructure projects for the ports of Gdynia, Gdansk, and Świnoujście-Szczecin?

Among the most critical investments included in the programme are the construction of the Deepwater Container Terminal in Świnoujście, the modernisation of the Świnoujście-Szczecin fairway to a depth of 12.5 m, and the terminal Floating Storage Regasification Unit FSRU.
The Deepwater Container Terminal in Świnoujście is a strategic task of the Ministry of Infrastructure, as it is one of the most ambitious projects implemented as part of the maritime economy. The localisation decision has just been issued by the voivodeship [province- Ed.] The terminal will be capable of handling up to 2 million TEU per year, simultaneously servicing two ships, one with a length of 400 m and one of 200 m. The investment can be implemented in two stages. The terminal will be equipped with low-emission equipment following the highest ecological 'green terminal' standards. The terminal in Świnoujście will constitute a dual-use infrastructure, i.e. a civilian infrastructure that can be used to handle military cargo.
In the case of the Port of Gdansk, the planned construction of a terminal to serve offshore wind projects deserves to be emphasised. An FSRU terminal will also be launched soon in the Gulf of Gdansk. As for the Port of Gdynia, its dredging is currently of pivotal importance. This investment will make Gdynia a deepwater port.

❸ Climate action has been highlighted as a priority for Poland. What infrastructure-related steps have been taken in that direction?

Due to the 2022 ecological disaster, the Oder River was highly polluted. The Ministry is also responsible for reacting to and preventing the pollution of Polish inland waters. For many years, maritime offices have been performing tasks related to the protection of the seashore against the risk of flooding from the sea.
This requires investments in protection measures such as breakwaters, strips, underwater thresholds, and groynes. For example, on the Hel Peninsula, the Maritime Office in Gdynia implemented a project worth approximately PLN 75 million, including PLN 63.8 million in EU funding, involving the construction of 144 groynes. Each year, approximately PLN 40 million is allocated from the state budget for these purposes. Also, under the European Funds for the Infrastructure, Climate and Environment programme, funds to the amount of PLN 150 million are allocated for the implementation of projects related to adaptation to climate change for maritime offices. In addition to investments in the construction of strips and breakwaters, activities are also carried out to supply sand to beaches that have suffered as a result of violent storms or severe erosion phenomena. This is a pressing problem, so the Ministry of Infrastructure is preparing a multi-annual programme dedicated to this issue.

❹ How do you see Poland's role in improving Europe's transport system?

Polish seaports of crucial importance to the national economy (i.e., Gdańsk, Gdynia, Szczecin and Świnoujście) are part of the TEN-T core network. Further measures are being taken to ensure the smooth flow of cargo within multimodal transport chains. Great emphasis is placed on the better integration of ports with their hinterland. It is worth noting that Polish seaports are also used by entities located in, among others, the Czech Republic and Slovakia. For this reason, it is in the European interest to ensure that they operate properly. This is closely linked to the construction of the Intermodal Terminal in Świnoujście and the construction of the C-E 59 railway line. C—E 59 is 492 km long and is a freight traffic branch from line E 59 Wrocław – Poznań – Szczecin, intended for passenger traffic.
Moreover, we have two major public shipowners in Poland: the first is Unity Line, which is one of the largest Baltic shipowners whose ferries connect Poland with Sweden. The company was established in May 1994 and is now part of the Polska Żegluga Morska capital group. The second, Polska Żegluga Bałtycka S.A., is one of the leading ferry operators in the Baltic Sea.

❺ Is there interest in the maritime professions among Poland's younger generation? Has the Ministry of Infrastructure implemented initiatives to attract and retain young people in careers associated with ports, shipyards, etc.?

The government, along with partners such as businesses and associations, is making efforts to better understand future skill needs and to identify solutions to be imple-

Port of Szczecin

mented. Both the maritime universities and the maritime secondary and high schools are involved in maritime education.

❻ Has the reduced maritime traffic in the Black Sea resulted in increased traffic in Polish ports? Is there a notable rise in demand for ship repair activities?

Since the beginning of the Russian Federation's armed aggression, Polish seaports have been involved in helping Ukraine. They handle Ukraine's foreign trade cargo (e.g., grain exported from Ukraine to various regions of the world, as well as steel products or iron ore). 2023 was a record-breaking year in terms of cargo handling in Polish seaports. Cargo turnover in Gdańsk, Gdynia, Szczecin, and Świnoujście amounted to over 145 million tonnes. In comparison, before the war in Ukraine, in 2021, the turnover was about 113 million tonnes. In part, this increase is due to the additional flows of Ukrainian cargo.

Also, two of the four key national ports recorded their respective all-time highs in cargo handling volumes, and the Port of Gdansk, our main port, joined the top ten European ports, being ranked 9th in the continent and 7th in the EU.

Looking ahead, we are excited, as investments in multimodal infrastructure and the new deepwater terminal in Szczecin will be opening further avenues of development for our maritime industry.

❼ Is Poland's voice heard sufficiently in the European maritime fora? In which areas do you see a common way of thinking with your Greek counterparts?

Poland has over 60 years of presence in the International Maritime Organisation, and we have been actively involved in the work of its Committees, Subcommittees, and various Working Groups.

We work together with Greece in the IMO technical meetings and fora, where we speak with one voice, that of the European Union. We cooperate with each other, seeking the best solutions and compromises to achieve our mutual goals, taking into account national and international conditions and interests, including the common issue of reducing GHG emissions from ships towards a sustainable and more environmentally friendly shipping sector.

During Posidonia 2024, you may find representatives of the Polish government, Polish ports, the Polish Register of Shipping, Bota Technik Sp. z o.o, Shipyard Nauta, Shipyard Gryfia, and Gospodarka Morska at the Polish Pavilion (stand 1.337 in Hall 1).

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ON THE SEAFRONT

GREEK PRIME MINISTER MITSOTAKIS COMMITS TO 21 INITIATIVES TO PROTECT THE SEAS

During this year's international conference "Our Ocean Conference", which was hosted in Athens from 15 to 17 April, Prime Minister Kyriakos Mitsotakis announced the establishment of a new special fund for the weaning of the Greek islands from fossil fuels and the development of renewable energy sources to cover their needs.

The Prime Minister said that the funds would come from the rights of the EU Emissions Trading Scheme and, depending on the fluctuations in the price of the auctioned allowances, it is estimated that they could reach €2 billion.

According to Kyriakos Mitsotakis, the funds will be allocated primarily to projects "connecting Greek islands to the mainland grid, energy storage, and renewable energy sources, including offshore wind energy and the construction of multi-purpose water reservoirs".

Government sources said the agreement to finance the new decarbonisation fund through the Emissions Trading Scheme was concluded recently after government negotiations with the European Commission and the European Investment Bank.

The same sources noted that the amount of €2 billion mentioned by Mr Mitsotakis is a moderate estimate of the funds Greece will have at its disposal, as the forecasts for a possible increase in the price of rights in the next two years or the additional investments that will be mobilised have not been taken into account. Therefore, it is likely that more money will flow into Greece.

According to the same sources, the implementation horizon of the projects that will be selected is 2032, while in the ranks of the government, there is a feeling that the new financial instrument will strengthen the GR-eco Islands Initiative so that it can expand with steady steps beyond the successful pilot projects in Halki and Astypalaia. It is worth noting that Poros is the third island that has joined the Green Islands initiative.

The 21 Ocean commitments

In the framework of this year's 9th "Our Ocean Conference", Greece, this year's organiser, made 21 commitments amounting to €780 million to protect and sustainably use the oceans and seas.

The first commitment foresees the creation of two more large marine national parks, one in the Aegean and one in the Ionian, with an emphasis on protecting marine mammals, wild birds, and sea turtles. As Kyriakos Mitsotakis said, in this way, "Greece will increase the area of its marine protected areas by 80%, covering about 1/3 of Greece's territorial marine waters".

The Greek Prime Minister added, "By 2026, we will have created a state-of-the-art surveillance system by employing drones, satellites, and artificial intelligence to effectively patrol the areas".

Greece also committed to a ban on trawling, which is considered particularly harmful to marine ecosystems. The ban will take effect in national marine parks as of 2026 and in all marine protected areas by 2030. Moreover, the country also pledged to reduce plastic waste in the sea by 50% and microplastics by 30% by 2030, compared to 2019.

THE LEADING MARITIME CENTRES IN THE WORLD AND THE POSITION OF ATHENS

According to DNV and Menon Economics' "The Leading Maritime Cities of the World" report for 2024, Singapore has maintained first place among the world's most important maritime centres, followed by Rotterdam and London.

Shanghai and Oslo completed the top five maritime centres. As in its previous editions, the report examines five pillars: Shipping Centres, Maritime Finance and Law, Maritime Technology, Ports and Logistics, and Attractiveness and Competitiveness. Singapore continues to feature at the top, taking first place in 'Shipping Activities', 'Ports and Logistics' and 'Attractiveness and Competitiveness'.

According to the report, while Athens is not among the top five shipping centres, it ranks second in the 'Shipping Activities' pillar. Despite being ranked below Singapore, Athens is the leading centre in ship management, which highlights that from 2022, both shipownership and ship man-

621 tankers will be delivered up to the third quarter of 2028.

agement have grown by around 10% in terms of tonnage.
The reason Athens is not at the top lies in the general perception that it primarily serves shipping companies of Greek interest rather than international shipping entities. Consequently, the report notes that the interest of foreign interest companies is shifting to other emerging centres such as Singapore and Dubai.

MAPPING THE GLOBAL TANKER FLEET

The tanker market has recently been the focus of interest not only of the maritime press but also maritime researchers and analysts due to the geopolitical developments taking place in the Middle East.
According to an analysis of the world's tanker fleet by Braemar shipbroking company, the fleet numbers 5,880 vessels, of which 871 are Handysizes, 1,854 MRs, 447 Panamaxes/LR1, 1,147 Aframaxes/LR2, 659 Suezmaxes/LR3 and 902 VLCCs.
Of these, only 98 are dual-fuel ships, while 1,259 are equipped with scrubbers. It is worth mentioning that out of the 902 VLCCs, 435 are fitted with scrubbers.
Regarding the orderbook, it ranges from 5% to 15% of the fleet, with the highest percentages recorded in MRs, Aframaxes, and Suezmaxes (13%, 14%, and 15%, respectively). On the other hand, the rates for Handysizes, Panamaxes, and VLCCs are 5%, 8%, and 6%, respectively.
The orderbook's current picture and the ship delivery schedule indicate that 621 ships will be delivered up to the third quarter of 2028.

CAPESIZE SALE AND PURCHASE TRANSACTIONS ACCELERATING

Capesize sale and purchase transactions have been moving at an unprecedented rate in the first quarter, continuing a trend that began in the fourth quarter of 2023.
According to data provided by Intermodal, 78 Capesizes changed hands within the six months leading up to April. Chinese shipowners made up the lion's share of these transactions, followed by the Greeks; the two countries' combined participation rate in the Capesizes markets was 65%.

THE WTO PREDICTS WORLD TRADE GROWTH AHEAD

The estimates for the growth of world trade in the coming years are positive, causing optimism for the world economy.
According to the World Trade Organisation, the world trade growth rate will be 2.6% in 2024 and 3.3% in 2025. It is noted that in 2023, world trade had slowed down by 1.2%.
In any case, the WTO has underlined that countries' geopolitics and economic policies are factors of uncertainty, which may reverse the current trend.

THE HOUTHIS, SOMALIA, AND IRAN POSE A SIGNIFICANT THREAT TO INTERNATIONAL SHIPPING

Houthi attacks on ships, the re-emergence of piracy in Somalia, and the seizure of ships by the Islamic Revolutionary Guards have created a fluid and, at the same time, explosive environment for maritime trade.
In this context, there has been an increase in demand for companies that offer maritime security services on vessels as shipowners try to keep their crews, vessels, and cargoes safe.
BIMCO's head of security, Jakob Larsen, speaking to the Financial Times, said that "the worsening situation in the Red Sea and Gulf of Aden is leading to an increased demand for armed guards on ships passing through the region".
The renewed interest in such services reflects a turnaround in the industry, which had been in decline for the past ten years due to the significant drop in piracy attacks in Somalia.
Jon Gahagan, President of US-based Sedna Global, noted that shipowners will need different safeguards against modern risks. Armed guards, he argued, cannot provide protection against Houthi missile attacks on ships.

NEW REPORT HIGHLIGHTS CONTINUED SOMALI PIRACY THREAT

The ICC International Maritime Bureau (IMB) raises concern about the continued acts of maritime piracy off the coast of Somalia in its first quarter report for 2024.
A total of 33 incidents of piracy and armed robbery against ships were recorded in the first three months of 2024, an increase from 27 incidents for the same period in 2023.
Of the 33 incidents reported, 24 vessels were boarded, six suffered attempted attacks, two were hijacked, and one was fired upon. Violence towards crews continues, with 35 crew members taken hostage, nine kidnapped, and one threatened.

Worrying rise in Somali pirate activity

The Q1 report highlights the continued threat of Somali piracy incidents with two reported hijackings. In addition, one vessel each was fired upon, boarded, and reported an attempted approach. These incidents were attributed to Somali pirates who demonstrate mounting capabilities, targeting ships at great distances from the Somali coast.
A Bangladesh-flagged bulk carrier was hijacked on 12 March, and its 23 crew were taken hostage by over 20 Somali pirates. The vessel was underway approximately 550 nautical miles (nm) from Mogadishu while en route from Mozambique to the United Arab Emirates.

The IMB is aware of several reported hijacked dhows and fishing vessels, which are ideal mother ships to launch attacks at distances from the Somali coastline.

ICC Secretary General John W.H. Denton said: “The resurgence of Somali pirate activity is worrying, and now more than ever, it is crucial to protect trade, safeguard routes, and the safety of seafarers who keep commerce moving. All measures to ensure the uninterrupted, free flow of goods throughout international supply chains must be taken”.

IMB has commended the timely and positive actions taken by authorities to ensure the release and safety of the crew.

A 40-hour operation by the Indian navy in the Indian Ocean on 15 March 2024 culminated in the capture of 35 Somali pirates and the release of a previously highjacked vessel and its 17 crew.

A bulk carrier boarded by pirates on 4 January over 450 nm off the east coast of Somalia was rendered safe along with its 21 crew members by an Indian naval vessel.

In late January, the Seychelles coast guard intervened to safeguard a hijacked fishing vessel and its six crew. Three suspected Somali pirates were apprehended in this operation.

IMB Director Michael Howlett said: “We reiterate our ongoing concern on the Somali piracy incidents and urge vessel owners and Masters to follow all recommended guidelines in the latest version of the Best Management Practices (BMP 5). We also commend the actions of the Indian navy and Seychelles coast guard for intercepting hijacked vessels, safeguarding crews, and capturing pirates”.

Incidents within the Gulf of Guinea waters continue to be at a reduced level. Six incidents were reported in Q1 2024 compared to five in the same period of 2023. The IMB urges continued caution as nine crew were kidnapped from a product tanker on 1 January 2024 around 45nm south of Bioko Island, Equatorial Guinea.

“While we welcome the reduction of incidents, piracy and armed robbery in the Gulf of Guinea remains a threat. A continued and robust regional and international naval presence to respond to these incidents and safeguard life at sea is crucial”, Mr Howlett said.

There has been a noticeable increase in reported low-level opportunistic crimes in Bangladeshi waters in 2024, with seven reported incidents received – six from vessels at anchorage in Chattogram – compared to one report for the whole of 2023.

The Singapore Straits recorded five incidents against four large bulk carriers and a general cargo vessel, which were considered low-level opportunistic incidents. But the threat to crew safety remains high as five crew were taken hostage in three separate incidents in January.

WHY THE STRAITS OF HORMUZ SHOULD NOT CLOSE

As the months-long conflict in the Middle East continues, Iran recently launched its first attack against Israel. Although, at the moment, diplomatic channels seem a promising solution, the scenario of an expansion of the war with the involvement of other countries cannot be excluded. Due to the looming threats by Iran, shipping’s eyes are turned towards the Straits of Hormuz.

Iran has indirectly threatened that it is in a position to close the Straits of Hormuz to shipping. This threat has caused grave concerns as 30% of the world’s oil trade passes through these straits, according to a Bloomberg article.

The Straits of Hormuz waterway connects the Gulf of Oman with the Arabian Gulf. Therefore, dozens of tankers sailing to and from the ports of important maritime trade countries, such as the United Arab Emirates, Kuwait, Qatar, Iraq, and Iran, pass through it.

Iraq, the UAE, and Kuwait are among the top ten countries in terms of oil exports, while Iran and Qatar are in the top twenty. In addition, Qatar is one of the three leading countries in terms of LNG exports, which demonstrates that the disruption of shipping through the Straits of Hormuz would affect the tanker market as well.

The impact on shipping and global energy trade would be catastrophic. Oil prices would skyrocket, driving major economies to protect themselves by consuming part of their strategic reserves.

At the same time, developments in the Straits of Hormuz regarding the dark fleet tankers will be of particular interest. Even if Iran were to close the Strait of Hormuz, it would logically allow ships to pass through if they were headed to Iran to load its own oil.

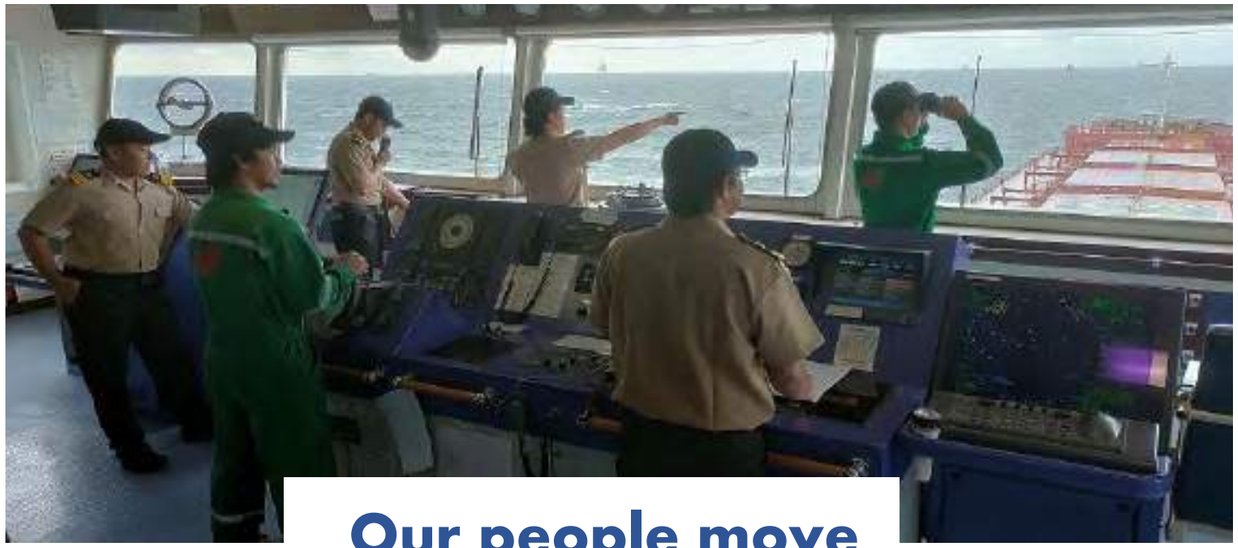
In addition, rising oil prices would allow Moscow to sell its crude at even higher prices while remaining attractive to Chinese and Indian importers. Dreams of capping Russian oil to limit Russia’s energy profits would remain just pipe dreams.

In any case, the headache of marine insurance will continue, if not worsen, creating a new challenge to maritime safety and increasing the risk of environmental accidents.

EU NET-ZERO INDUSTRY ACT: EUROPEAN SHIPOWNERS WELCOME 40% PRODUCTION BENCHMARK FOR CLEAN SHIPPING FUELS IN EUROPE

During the last plenary of its five-year term on Thursday, 25 April, the European Parliament in Strasbourg adopted a new law which aims to scale up industrial capacity for green technologies in Europe.

European shipowners strongly welcomed the inclusion of clean fuels for shipping, including advanced



biofuels and e-fuels, in the list of net-zero technologies adopted today under the Net-Zero Industry Act.

The new law introduces a benchmark for the Commission and the EU Member States to match 40% of the deployment needs for clean fuels for shipping with production capacity.

This is a vital step to ensure that clean fuels for shipping are made available in the market at an affordable price as a prerequisite for shipping to meet its target under the Fuel EU Maritime Regulation. Scaling up the production and uptake of clean fuels for shipping is a top priority for European shipping.

"European shipowners have consistently requested a mandate for European fuel suppliers to scale up and make clean, affordable, and safe fuels available in the market. Matching European fuel industrial capacity with the EU targets under the FuelEU Maritime is essential. We welcome the 40% benchmark for the production of clean fuels such as advanced biofuels and e-fuels as a stepping stone towards an international scale-up of alternative sustainable fuels for shipping. We will work closely with the Commission to ensure that the 40% benchmark is translated into immediate action," said Sotiris Raptis, ECSA's Secretary General.

EUROPEAN SEAPORTS' PRIORITIES FOR 2024-2029

In view of the upcoming EU elections, the European Sea Ports Organisation (ESPO) has set its priorities for the next five years.

The world is in transition, and ports are in transition. More than ever, ports are strategic entities and enablers of Europe's ambitions and its sustainable, digital, competitive, strong and social future. Ports want to be part of the solution and are taking on new responsibilities on top of their traditional role as multimodal hubs in the supply chain.

Entitled "a net-zero, smart, resilient and competitive Europe: Europe's ports are part of the solution", ESPO's memorandum outlines nine priorities:

1. Focus on implementation: Europe's ports ask policymakers to provide clarity and support to ports to ensure the effective implementation of existing regulations.
2. Give ports the space to take up their role as facilitators of renewable energy. The energy transition will require space in ports; permitting barriers should be removed.
3. Reducing emissions and pollution is an important KPI for ports: Ports in Europe want an agreement on a well-defined global maritime GHG emission pricing mechanism; ports should be allowed to prioritise green investments where it makes the most sense in terms of emission reduction.
4. The level playing field both within the internal market and vis-à-vis Europe's neighbours must be safeguarded.
5. Ports are pivotal in strengthening Europe's resilience: They are an essential pillar of Europe's supply chain sovereignty; ports are also in favour of a more harmonised approach to address foreign influence in ports.
6. Ports are partners in striving for a smart but safe and secure cyber environment: Digitalisation and smart technologies are crucial tools in making Europe's ports more efficient, safe, and sustainable.
7. Europe's ports require 80 billion in investment needs for the next ten years: Ports more than ever need access to a robust funding support instrument, with dedicated port envelopes, to invest in projects with high societal value but an often slow, low, and risky return on investment; European funding should be simple.
8. The EU institutional structure should be adapted to the new reality: A more integrated approach is needed when developing new policies, as transport, and in particular ports, cannot be discussed in isolation.
9. Ports are a resource for the city: Their new roles can open doors for attracting new businesses and talents to the port and port cities; effective cooperation between all stakeholders is needed to attract people to the port since ports cannot do the job without the right people.

IRON ORE SHIPMENTS UP BY 3.8% DESPITE WEAK CHINESE DEMAND

During the start of the year, Brazilian iron ore shipments typically slow down due to mining disruptions caused by heavy rainfall. However, this year, conditions were better and Vale, a leading miner, increased output by 6% y/y, boosting shipments from Brazil.

In China, expectations for more robust steel production following the Chinese New Year led to strong iron ore prices. However, despite these expectations, steel production weakened by 3.1% y/y while both iron ore shipments and domestic mining rose. Consequently, iron ore inventories in Chinese ports increased and have now reached the highest levels since April 2022.

73.9% of the world's seaborne iron ore shipments are bound for China as the country relies greatly on ore imports to produce steel.

"The Capesize segment greatly benefited from this increase in shipments, both due to the higher volume and the above-average sailing distances between Brazil and China. This helped the Baltic Exchange's Capesize 5TC index to average USD 24,286 per day, up 165.6% y/y," says Filipe Gouveia, Shipping Analyst at BIMCO.

For iron ore shipments to continue growing, Chinese steel production must recover, supported by either more robust domestic demand or higher exports.

The crisis in the domestic Chinese property sector has, during the past years, been a drag on both steel demand and economic growth. Unfortunately, leading indicators point to even weaker demand during the rest of 2024. In the first quarter of 2024, property investment fell by 15% year-on-year, and the area of new property starts fell by 28.3% year-on-year. Steel demand from manufacturing and infrastructure could continue to grow, but overall domestic demand is expected to remain stagnant. Abroad, increasing demand for steel could provide an outlet for Chinese steel products. During the first quarter of 2024, exports increased by 30.7% y/y.

"While iron ore shipments could slow down, we still expect them to grow 1-2% in 2024, benefiting from a 1.7% increase in global steel demand as forecast by the World Steel Association. This may keep the Capesize segment strong as the fleet is only expected to grow 1.4% in 2024. Any further increase in Brazilian mining would lead to longer distances and an even tighter market," says Gouveia.

1-2%
iron ore
shipment
growth is
expected in
2024.

SOUTH KOREAN SHIPBUILDING MILESTONE: 500 LNG CARRIERS IN 30 YEARS

South Korea's competitiveness in the international shipbuilding industry is based on its technologically advanced ships. In this context, the naming ceremony of "Orion Spirit" is an important milestone, as it is the 500th LNG carrier built in South Korea since 1994.

Minister of Trade, Industry and Energy, Dukgeun Ahn, attended the ceremony held on 18 April at Samsung Heavy Industries' Geoje Shipyard. The ship will be delivered to J.P. Morgan.

There are currently 680 LNG carriers worldwide, 75% of which have been built in South Korea. The Asian country secured all orders placed for LNG carriers and ammonia carriers in the first quarter of 2024, while the value of all orders placed at South Korean shipyards in the same period amounted to approximately $13.6 billion.

THE UK PROVIDES AN £8 MILLION FUNDING BOOST FOR AI TO MAKE BOATS SMARTER

Maritime Minister Lord Davies recently announced an £8 million funding boost to put the UK at the forefront of cutting-edge maritime technology. From self-driving boats to streamlined port operations, the use of artificial intelligence (AI) and other innovations will boost the economy and support coastal communities.

The Smart Shipping Acceleration Fund will kickstart feasibility studies to develop smart shipping technologies such as AI, robotics, and autonomous vessels. The winning projects will also require match funding – leveraging further investment from the private sector.

Successful ports will be able to use AI to detect safety hazards, optimise port activities and reduce their environmental footprint – making UK waters safer, operations smoother and air cleaner.

Maritime Minister Lord Davies said: ''Using AI and cutting-edge technology to make boats smarter and transform port operations is part of our plan to decarbonise shipping, enhance safety for our seafarers and help grow the economy. AI has the potential to revolutionise the sector, create jobs, and support the economy''.

AI innovations are already transforming how we tackle and diagnose diseases like cancer, improving our public services and ramping up productivity. It is the defining technology of our generation. We have invested over £3.5 billion in the technology in the last ten years and are currently more than doubling the 'Incubator for AI' team, recruiting the best of British talent to drive AI integration across the public sector.

CONTAINER SHIP DELIVERIES HIT NEW YTD RECORD OF 1M TEU

"In 2023, 2.3 million TEU of container ship capacity was delivered, beating the former all-time high by 37%. Year-to-date another record has been set as more than 1 million TEU has already been delivered during the first four months of the year, an increase of nearly 80% compared to the previous record," says Niels Rasmussen, Chief Shipping Analyst at BIMCO. As ship recycling has so far only retired 19 smaller ships, the fleet has expanded by nearly 1 million TEU, a 3.5% increase compared to the beginning of the year, adding to last year's fleet growth of 8.2%.

"Due to record deliveries the orderbook has declined. However, as 1.8 million TEU has been contracted during 2023 and 2024, it has only declined by 1 million TEU and now stands at 6.1 million TEU, 21% of the current fleet size. As a result, the orderbook's share of the fleet is more than twice the size than it was before the COVID pandemic and liner operators' contracting spree began," says Rasmussen.

The orderbook contains 2 million TEU for delivery in 2024 and delivery volumes for the year is on target to exceed 3 million TEU, 30% higher than last year's record. In 2025, deliveries should end just below 2 million TEU, the third highest deliveries in one year only exceeded in 2023 and 2024.

Despite this, deliveries are still some way off the record when seen in relation to the size of the fleet. In 2024, we expect deliveries to reach 11% of fleet capacity at the beginning of the year. That record was most recently beaten in 2008 when deliveries made up 14% of the fleet.

The record high ship deliveries were expected to create significant oversupply in the market and, while this did impact the market in 2023, it appears that deliveries this year instead contribute to keeping global container trade moving.

Due to the rerouting of ships via the Cape of Good Hope following attacks in the Red Sea by Houthis, about 10% more capacity is needed to manage global container trades. Capacity needed to manage any market growth should be added to those 10%.

"When ships start increasing sailings via the Red Sea and the Suez Canal, we will most likely see significant oversupply. Between 2019 and 2023, the fleet grew 21% while container volumes only grew 4%. Between 2023 and 2025, the fleet is expected to grow another 15%," says Rasmussen.

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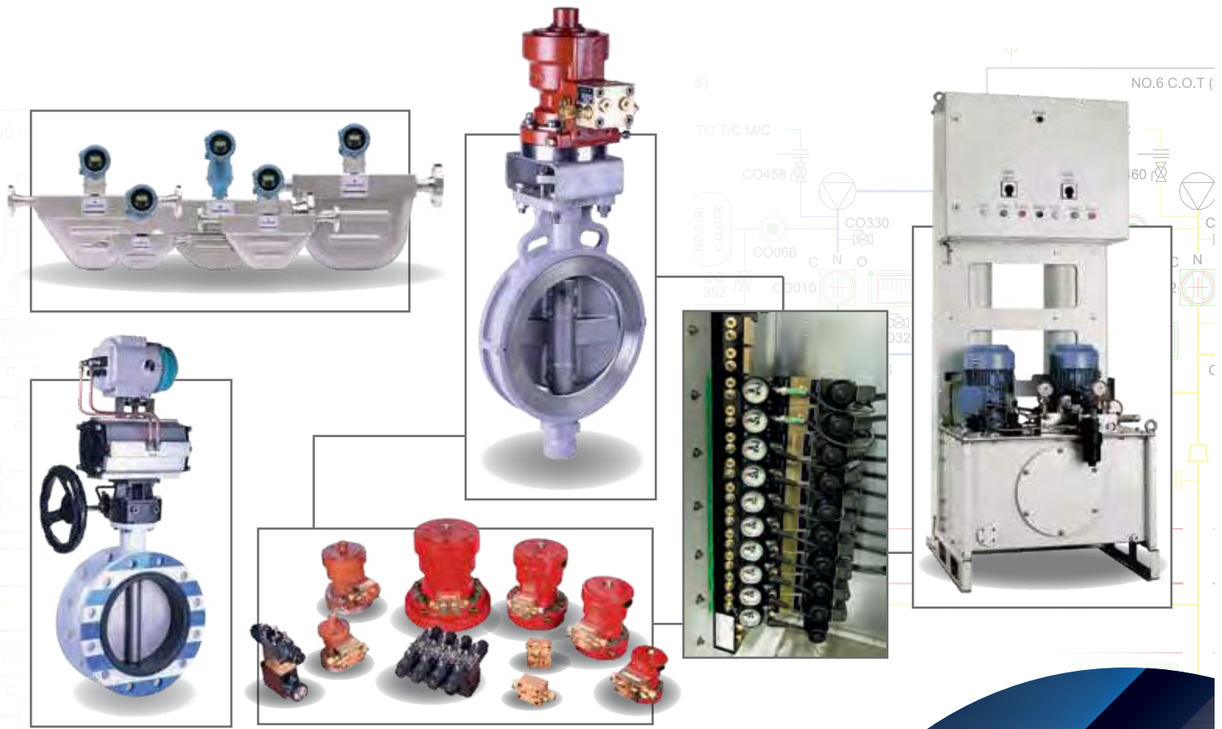

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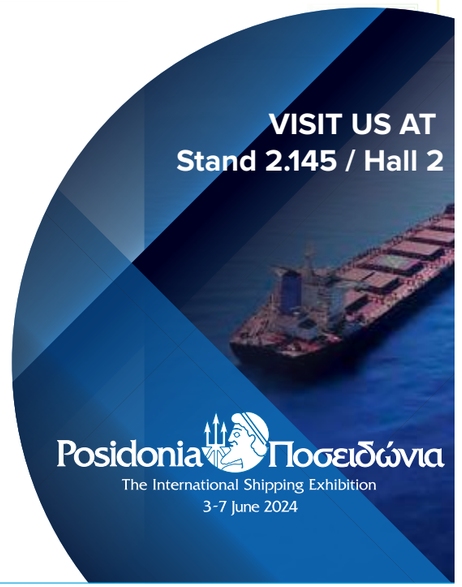

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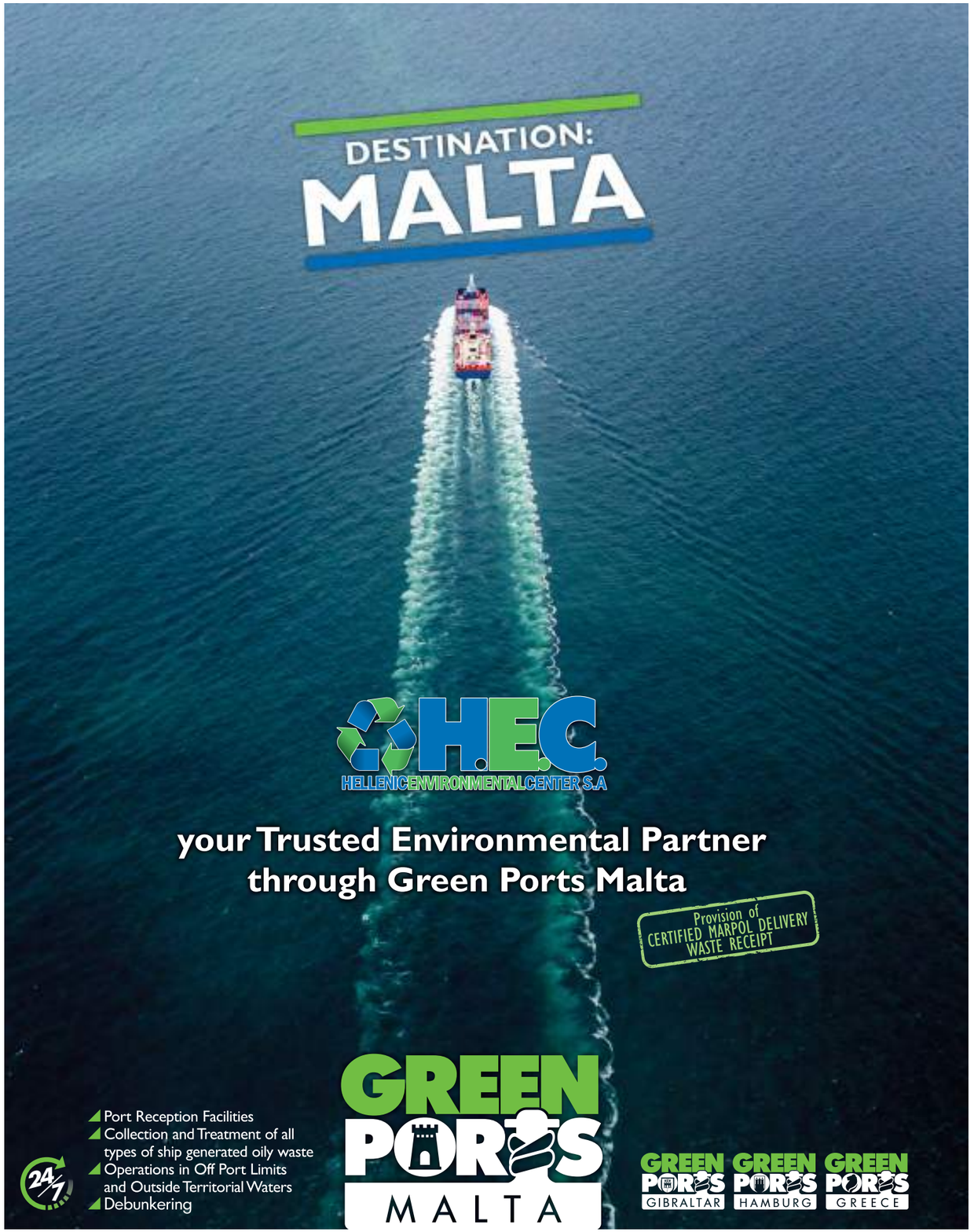

News from the seas of the world

INTERNATIONAL WATERS

Edited by:
Giannis Theodoropoulos
& Manos Charitos

SHIPPING ENTREPRENEURSHIP DEVELOPMENTS

STAR BULK COMPLETES MERGER WITH EAGLE BULK

Star Bulk Carriers Corp. announced on Tuesday, 9 April, that it has completed its merger with Eagle Bulk Shipping Inc.

Under the terms of the merger agreement, each Eagle shareholder received 2.6211 shares of Star Bulk common stock for each share of Eagle common stock owned. Eagle common stock has ceased trading and will no longer be listed on the New York Stock Exchange.

Petros Pappas, Chief Executive Officer of Star Bulk, said: "This is an exciting day for Star Bulk as we bring together our companies and create a global leader in dry bulk shipping. We are moving forward with greater scale, a stronger financial profile and unique technical and commercial capabilities to grow our business, better serve our customers and deliver sustainable value for our shareholders".

EURONAV AND ANGLO-EASTERN JOIN FORCES

Euronav NV and Anglo-Eastern Univan Group announced a Heads of Agreement for the sale and purchase of Euronav Ship Management Hellas (ESMH), Euronav's ship management arm.

Euronav and Anglo-Eastern intend to join forces through this sale, with the latter assuming ownership of ship management responsibilities for the vessels currently under ESMH on an "as is" basis. This transaction will provide Anglo-Eastern with a solid local presence in the Greek market while also greatly enhancing its footprint in large crude oil tankers.

Post-integration, ESMH will become part of Anglo-Eastern's vast global network, offering the combined entity a wide range of growth opportunities in different regions and ship types.

Bjorn Hojgaard, CEO of Anglo-Eastern, emphasised the mutually beneficial nature of this agreement, which "will enable both companies to focus on what they do best and reflects Euronav's utmost confidence in Anglo-Eastern's ability to deliver as a ship manager wider initiatives related to safety, quality, digitalisation, crew training and decarbonisation".

Alexander Saverys, CEO, stated, "We are very happy to join forces with Anglo-Eastern. We already have a strong collaboration with Anglo-Eastern, and this combination will further enhance our business relations, offering plenty of new opportunities for our company and our people".

HEIDMAR INC. ANNOUNCES ADDITION OF LANDBRIDGE SHIP MANAGEMENT (LBSM)

Heidmar Inc. announced the expansion of its service offering to include technical ship management with the addition of Landbridge Ship Management, Hong Kong Ltd (LBSM) to the Heidmar group.

The Huwell Group, an owner of five modern VLCCs, decided that Heidmar, a company focused on marine services, is best situated to further develop and grow LBSM. This strategic initiative for both parties is the outcome of a strong relationship and collaboration developed over the last three years. LBSM has built an enviable reputation operating a modern VLCC fleet with a very strong relationship with oil majors and a strong track record in securing long-term time charters with first-class charterers. Heidmar's goal is to build on this solid foundation and grow the fleet in the tanker sector and other shipping markets.

CEO of Heidmar Inc, Pankaj Khanna, stated: "The introduction of Technical Management represents a significant milestone for Heidmar Inc. We are excited to leverage our extensive industry experience and deep-rooted relationships to deliver unparalleled technical support to our clients. As a former seafarer myself, I recognise the invaluable contribution of seafarers to the global economy. We remain resolutely committed to the men and women who serve onboard vessels worldwide. Your safety, well-being, professional development, and success are the key pillars of our success".

HAFNIA SUCCESSFULLY COMPLETES ADDITIONAL LISTING ON THE NEW YORK STOCK EXCHANGE

Hafnia announced the successful completion of its listing on the New York Stock Exchange, marking a significant milestone in its growth trajectory.

As of 9 April 2024, Hafnia's common shares commenced trading on the NYSE under the ticker "HAFN" while continuing to be listed on the Oslo Stock Exchange under the ticker "HAFNI". This dual listing offers enhanced access to global inves-

tors and strengthens Hafnia's position in the international market. The decision to pursue a dual listing in the United States demonstrates Hafnia's commitment to expanding its investor base and fostering greater transparency and liquidity in its shares. By listing on NYSE, Hafnia aims to tap into a broader pool of investors, including institutional investors and retail traders, who are seeking exposure to the dynamic maritime industry.
"We are proud to announce the successful completion of our dual listing on the New York Stock Exchange," said Mikael Skov, CEO of Hafnia. "This milestone reflects our active management approach and dedication to creating long-term value for our shareholders and enhancing our global presence. The US listing provides Hafnia with access to a diverse investor base and increased visibility in the world's largest capital market".

HMM'S AMBITIOUS EXPANSION PLAN

The plan to sell HMM may be on hold for now, but that doesn't stop its ambitious plans to develop its fleet further.
South Korean news media have reported that HMM plans to increase its cargo capacity to 150 twenty-foot equivalent units (TEU) from the current 92 TEU. This expansion would be equal to the combined load capacity of 130 container ships, up from today's 84. In addition, its growth plan does not stop at liner shipping as the company plans to nearly double its cargo capacity to 12.28 million deadweight tonnage (DWT) by 2030, equivalent to 110 vessels, compared to the current 6.3 million DWT and 36 ships.

CMA CGM INVESTS IN ELECTRIC VANS

The CMA CGM Group has joined Flexis SAS, founded on 22 March 2024 by Renault Group and Volvo Group for the next generation of electric vans. CMA CGM, through PULSE, its energy fund, acquired a 10% stake in Flexis SAS and has confirmed its interest in a strategic investment of up to €120 million by 2026.
The Volvo Group and Renault Group, each holding a 45% stake in Flexis SAS, plan to invest respectively €300 million over the next three years.
New expectations for electrified vans are emerging as professional customers are facing increasing pressure from climate change and CO_2 regulations while e-commerce and logistics are booming. The European market for electrified vans is expected to grow by 40% per year until 2030.
To address this market, Volvo Group, Renault Group, and CMA CGM Group are creating Flexis SAS to lead the decarbonisation of transport and logistics sectors. A coalition of three leading companies with an agile start-up approach, Flexis combines the industrial expertise of world-class automotive manufacturers and the know-how of the number one company for automotive logistics.
The vehicles will be built on a new fully electric LCV skateboard platform that will offer high modularity for different body types at a competitive cost and breakthrough on safety requirements.
By adopting the new connected electronic platform, the vehicle will onboard unprecedented capabilities to monitor users' delivery activity and business performance, reducing global usage costs for logistics players by up to 30%.
The connected services will enable customers to benefit from up-to-date vehicles during their whole lifecycle. The van itself will offer outstanding compacity for urban mobility and high polyvalence for tailor-made solutions with different battery capacities, as well as the first 800V architecture on the market for vehicles in this category.
The vehicles will be produced in Renault Group's Sandouville plant, an expert in LCV manufacturing, which will recruit 550 people over the next four years.

HD HYUNDAI EXPRESSES INTEREST IN AN EQUITY STAKE IN HANWHA OCEAN

The South Korean shipbuilding industry is highly consolidated, as it mainly consists of three major players: HD KSOE, Hanwha Ocean, and Samsung Heavy Industries. Thus, the news that HD Hyundai, HD KSOE's parent company, is interested in acquiring an equity stake in Hanwha Ocean (Daewoo Shipbuilding & Marine Engineering - DSME) has sparked particular interest.
In particular, South Korean news media have cited a statement by a Hyundai official to Reuters, according to which Hyundai Heavy Industries - the HD Hyundai Group's shipyard - has contacted Daewoo regarding the acquisition of an equity stake.
State-funded Korea Development Bank (KDB), which owns a majority stake (55.7%) in Hanwha Ocean worth approximately $1.6 billion, has announced it intends to sell the stake and consolidate the country's three biggest shipbuilders - which include Samsung Heavy Industries Co Ltd. - into two.

END OF AN ERA FOR A HISTORIC BRITISH SHIPYARD

British shipbuilding and repair company A&P has confirmed it is closing its Teesside shipyard in northeast England but is offering jobs to its workers at another nearby shipyard.
The £100m turnover business, which specialises in repairs and retrofits of, among others, Royal Navy ships, has announced it is consolidating its northeast operations with its South Tyneside shipyard.

The volume of investments in the blue economy sector reached more than €13 billion between 2018 and 2023.

BLUE ECONOMY

INVESTMENTS IN THE BLUE ECONOMY ARE ON THE INCREASE

The BlueInvest Investor Report 2024, published by the EU, shows a remarkable increase in blue economy investments in recent years.

Findings show that an investment ecosystem to support blue economy innovation is taking shape, and the BlueInvest initiative has been a driving force behind this change.

Five key insights on the blue economy investments landscape in the EU:

- The volume of disclosed investments in the blue economy has significantly increased. It is three times larger than it was ten years ago, reaching more than €13 billion between 2018 and 2023.
- Since 2018, the number of deals in the blue economy has increased. About 270 deals have been closed every year in the blue economy, at least 30 private equity/venture capital funds are focused on blue economy deals, and the number is growing. This trend indicates a positive outlook and a strong growth pattern for the sector.
- 3. 75% of European blue economy deals occur within the EU, with half of the investors coming from non-EU countries. That shows how EU companies create substantial business opportunities that attract investors from other regions.
- In terms of the number of deals, mergers and acquisitions represent about 38%, followed by early-stage equity investments (34%), ahead of growth-equity investments (11%), and grants (7%), suggesting a limited average level of maturity of the blue economy sector overall, particularly given the relatively modest amounts being invested into growth-stage companies.
- The three most dynamic sectors are blue renewable energy, blue tech and ocean observation, and aquaculture. At the other end of the spectrum, sustainable coastal and maritime tourism, as well as environmental protection and regeneration, have closed fewer deals.

SETTING SAIL TO BUILD 10,000 SUSTAINABLE AND DIGITALISED VESSELS IN EUROPE BY 2035

SEA Europe, the association representing the European maritime technology industry, comprising shipyards and maritime equipment manufacturers, has issued a resounding call to action to European policymakers. SEA Europe is urging them to formulate a comprehensive European Maritime Industrial Strategy.

The maritime technology industry is pivotal for Europe's strategic independence. It builds, equips, and maintains vessels and platforms crucial for transporting goods, people, and energy, connecting maritime regions, and bolstering the Blue Economy. Furthermore, it provides naval capabilities essential for Europe's defence and security.

Despite its strategic role, the European maritime technology industry has faced considerable challenges over the past years, mainly due to longstanding competition distortions from Asia. Consequently, Europe has experienced a significant erosion in its merchant and offshore shipbuilding. This decline has not only jeopardised the industrial capacity of European shipyards but also undermined the entire supply chain ecosystem encompassing equipment, systems, and technologies and harmed naval shipbuilding capabilities. Because of substantial price differentials of 30% to 40%, combined with advantageous financial incentives – especially offered by Chinese banks – European shipowners have increasingly opted for Asian shipbuilders. As a result, European shipyards have seen a significant decline in orders. This trend not only poses a substantial economic risk but also undermines Europe's strategic autonomy, particularly amidst current geopolitical tensions.

Christophe Tytgat, Secretary-General of SEA Europe, underscored the urgency of the situation: "It is imperative to regain Europe's shipbuilding capacity by securing orders from shipowners, including European shipowners. The transition towards sustainability and digitalisation within waterborne transport and the Blue Economy is a promising opportunity for Europe to surpass global competitors in quality, efficiency, and safety. Our ambition is clear: by 2035, we aim to supply 10,000 sustainable and digitalised vessels to strategic sectors of the European Blue Economy".

Christophe Tytgat emphasised the critical need for EU policymakers to enact a Maritime Industrial Strategy as a matter of priority for Europe's strategic autonomy: "We call upon EU policymakers to urgently put in place a Maritime Industrial Strategy to support the business cases of the European maritime technology industry.

This strategy should bolster technological leadership, facilitate investments, and nurture a skilled workforce. By strengthening its shipbuilding capacity amidst a challenging global landscape, Europe will enhance its economic security and strategic autonomy in the maritime domain, which is much needed in a context of geopolitical tensions".

NORTH PACIFIC GREEN CORRIDOR CONSORTIUM AIMS TO DECARBONISE TRANSPORTATION CORRIDOR BETWEEN CANADA, JAPAN, AND SOUTH KOREA

Global industry leaders from North America, Asia, and Europe announced the formation of the North Pacific Green Corridor Consortium (NPGCC), whose members and partners will work together to decarbonise the value chain for commodities between North America and Asia.

The NPGCC will apply its collective expertise to develop a corridor for the decarbonised transportation of multiple commodities, including agricultural products, metal concentrates, and steelmaking coal. The members of the NPGCC are committed to establishing the consortium as a catalyst for decarbonisation efforts, exploring new markets for low-carbon fuels in North America and Asia, exploring propulsion options, and showcasing how carbon reduction initiatives can strengthen commercial partnerships.

The NPGCC brings together diverse sections of the value chain, including bulk commodity producers, railway and intermodal transportation providers, marine vessel owners and operators, port facilities and port authorities, and clean technology providers. The nine founding members are Canadian National Railway Company (CN), Mitsubishi Canada Ltd., Mitsubishi Heavy Industries, NYK Bulk & Projects Carriers, Oldendorff Carriers, Prince Rupert Port Authority, Teck Resources Limited (Teck), Trigon Pacific Terminals, and Vancouver Fraser Port Authority. The NPGCC is open to additional members and partners, in particular end-use customers, to contribute to the development and implementation of the green trade corridor.

The NPGCC's activities will focus on pathways to optimise energy efficiency with the specific goal of advancing projects and infrastructure required to achieve meaningful emissions reductions in the near term. Consideration will be given to the potential production, storage and bunkering of lower-carbon fuels and propulsion options for NPGCC members and other parties. The NPGCC will also engage in research, knowledge-sharing, advocacy, member coordination and recruitment to accelerate members' progress towards their decarbonisation objectives.

AN INNOVATION HUB IN THE HEART OF THE ANTWERP PORT

Power to Hydrogen and the Port of Antwerp-Bruges announced the largest installation of an AEM electrolyser stack in the world in a relevant commercial environment.

Power to Hydrogen will be one of the first concessionaires signed for NextGen Demo, the innovation hub that is part of NextGen District in the heart of the Antwerp port. Power to Hydrogen and TripleW have chosen to use the port environment to test their innovative projects in energy transition and circularity.

The demo projects of both pioneers align perfectly with the ambitions of Port of Antwerp-Bruges and will make a significant contribution to the transition to a climate-neutral society.

Port of Antwerp-Bruges has cleared an area with a total surface of 88 hectares for NextGen District with the ambition to establish a hotspot for the circular economy.

NextGen Demo is a zone of about 2 hectares within this cluster in the heart of the Antwerp industry, where demonstrators (start-ups and scale-ups, spin-off companies, and pilot projects) can test new technologies and circular demo projects that have outgrown the lab on a larger scale and in an industrial environment before moving to commercialisation.

GEOPOLITICS

NEW AMERICAN AND BRITISH SANCTIONS ON IRAN

On Thursday, 18 April, the United States and Britain imposed sanctions on Iran, targeting "Teheran's drone programme, steel industry, and auto industry" following the country's recent attacks on Israel.

The US Treasury Department said in a statement that Washington's sanctions target "16 individuals and two entities involved in the production of Iranian drones, including the Shahed that enabled the 13 April attack".

They also involve three subsidiaries of the Iranian automaker Bahman Group and the Iranian Ministry of Defense.

US President Joe Biden said the United States will continue to hold Iran accountable with the new sanctions and export controls against it.

These latest sanctions are intended to "restrain Iran's destabilising military programmes, according to the White House statement.

As for London's sanctions, they target "numerous Iranian military organisations, individuals and entities involved in Iran's drone and ballistic missile industries," the finance ministry said.

Iran launched more than 350 drones and missiles against Israel on the night of Saturday, 18 to Sunday, 19 April, almost all of which were intercepted in flight.

Tehran portrayed the attack as a retaliation for a deadly strike targeting the Iranian consulate in Damascus in early April, attributed to Israel.

SHIPYARDS: A PERMANENT SOURCE OF CONFLICT BETWEEN THE US AND CHINA

The dispute between the US and China over the maritime supply chain is deepening, with Beijing strongly opposing Washington's investigation into the Chinese shipbuilding industry, calling the move a "mistake on top of a mistake".

In an official statement late on Wednesday, 17 April, China's Ministry of Commerce said the US provides hundreds of billions of dollars in subsidies to its domestic industries, "yet it accuses China of adopting so-called unfair practices".

The Chinese ministry also emphasised that "In fact, the development of China's industries is the result of companies' technological innovation and active participation in competition".

Earlier, Washington had initiated a new investigation into China's logistics and shipyards, accusing the Asian country of unfair and illicit practices in order to dominate the market.

KENYA ASSUMES PEACEMAKING ROLE IN THE HORN OF AFRICA

A top Kenyan official recently said that Kenya had proposed a regional maritime treaty to de-escalate tensions between Ethiopia and Somalia over a deal allowing Ethiopia to set up a naval base and giving it port access to Somalia's breakaway region of Somaliland.

Landlocked Ethiopia agreed on 1 January to lease 20 kilometres (12 miles) of coastline in Somaliland, a part of Somalia that claims independence and has effectively had autonomy since 1991, offering possible recognition of Somaliland in return.

The deal prompted a defiant response from Somalia and fuelled concerns it could further destabilise the Horn of Africa region.

The treaty proposed by Kenya in consultation with Djibouti and the regional bloc IGAD would govern the way landlocked states in the region would be able to access a port on commercial terms, a Kenyan official told Reuters, adding that IGAD is able to formulate a treaty for the sharing of marine resources.

On Thursday, 11 April, Somali President Hassan Sheikh Mohamud met with his Kenyan counterpart William Ruto in the Kenyan capital in the hope of finding a diplomatic solution to the dispute.

EU TO BECOME AN OBSERVER OF THE DJIBOUTI CODE OF CONDUCT/ JEDDAH AMENDMENT

The EU will soon become a 'Friend' of the Djibouti Code of Conduct/Jeddah Amendment, a regional cooperation framework to tackle piracy, armed robbery, human trafficking, and other illegal maritime activities in the North-Western Indian Ocean, including the Gulf of Aden and the Red Sea.

The Council formally decided to accept the invitation from the Secretariat of the Djibouti Code of Conduct/Jeddah Amendment. By becoming a 'Friend' of the Djibouti Code of Conduct/Jeddah Amendment, the EU signals its strong support for an effective regional maritime security architecture while strengthening its presence and engagement as a global maritime security provider in the fight against illegal activities at sea.

The North-Western Indian Ocean is one of the most dynamic centres of economic growth in the world. With 80% of the world's trade passing through the Indian Ocean, it is crucial to ensure freedom of navigation and protect the EU's and its partners' security and interests.

80% of the world's trade passes through the Indian Ocean.

UK AND AUSTRALIA CELEBRATE CLOSER TIES WITH AUKUS

UK and Australia ties are stronger than ever following a successful defence and foreign policy summit in Canberra, attended by the Defence Secretary and Foreign Secretary.

Over two days of meetings and engagements with their counterparts, which are dubbed AUKMIN and take place annually, David Cameron and Grant Shapps discussed shared priorities, challenges, and cooperation on issues including Ukraine, the Middle East, and the Indo-Pacific.

Meeting in Canberra on Thursday 18th March, Defence Secretary Grant Shapps and Australia Deputy Prime Minister and Defence Minister Richard Marles set out closer collaboration, including science and technology, information exchange and working together to maintain an open and stable Indo-Pacific.

The agreement will also make it easier for their forces to operate in each other's nations, facilitating current activity like Operation Interflex and future deployments, including the Navy's Carrier Strike Group in 2025 and the RAF's Exercise Pitch Black this summer.

During a day of meetings on shared priorities and challenges, the UK and Australia's continued commitment to Ukraine was on the agenda, with UK and Australian troops working together to train over 35,000 Ukrainian recruits in the UK to date. Grant Shapps welcomed Australia's £25 million contribution to the UK-administered International Fund for Ukraine, which seeks to provide Ukraine with the capabilities it needs, directly procuring from industry. He also announced a new package of multipurpose drones and air defence capability that will be delivered to Ukraine in the coming months through the fund.

The £60 million package will be rapidly procured in the coming months to further boost the Armed Forces of Ukraine. £40 million will be spent on more than 150 surveillance drones, and a further £20 million will be spent on additional air defence systems, including radars to detect incoming missiles and drones targeted at Ukraine's cities and military positions, as well as mobile workshops to help quickly repair equipment near the frontline.

The package will be procured from industry using supply chains already providing capability for Ukraine, including from leading manufacturers such as British company Malloy Aeronautics and Tekever, and demonstrates the continued commitment from nations around the world – including the UK and Australia – to support Ukraine.

© Stena Line

PASSENGER SHIPPING

STENA LINE TO EXPAND OUTSIDE OF EUROPE

Stena Line has entered an agreement to acquire 49 per cent of the shares of Morocco-based ferry company Africa Morocco Link (AML).

AML is headquartered in Tangier and operates a ferry route between Tanger Med and Algeciras. This summer, the company will also launch a new highspeed route between Tangier Ville and Tarifa. The first route is open for freight and travel customers. The second one will be a route for passengers and cars.

"We are always looking to secure new business opportunities that will make us last and be resilient in the long run. The strait of Gibraltar is a strategic location for passengers travelling between Africa and Europe as well as for global trade, and freight volumes in the area are expected to grow in the upcoming years due to the positive industrial growth and international trade in Morocco," says Niclas Mårtensson, CEO at Stena Line.

He continues: "These routes, their ports, and the surrounding industries are under development and expected to drive a healthy freight market growth in the coming ten years. It's a very exciting area to be able to operate in".

The agreement is subject to approval by the Moroccan authorities.

THE CRUISE INDUSTRY CONTINUES TO BE ONE OF THE FASTEST-GROWING AND MOST RESILIENT PARTS OF THE TOURISM SECTOR

The Cruise Lines International Association (CLIA) has released its annual State of the Cruise Industry report and a new publication, An Ocean of Opportunities workforce skills report.

The annual state of the industry report includes the release of 2023 passenger volume, which reached 31.7 million—surpassing 2019 by 7%. The report also shows continued demand for cruise holidays, noting intent to cruise at 82%. The forecast for cruise capacity shows an increase of 10% from 2024 through 2028 as cruise lines make ongoing, concrete progress in pursuit of net-zero emissions by 2050.

"Cruise continues to be one of the fastest-growing and most resilient sectors of tourism— rebounding faster than international tourist arrivals—and a strong contributor to local and national economies. In 2022, cruise tourism generated 90% of economic impact compared to 2019, despite passenger volumes that year being at 70% of 2019 levels. Over the past 50 years, cruise tourism has demonstrated its leadership in managed tourism and is an industry that has plenty of room for continued responsible growth given cruise travel comprises just 2% of overall travel and tourism," said Kelly Craighead, president and CEO of CLIA. "The industry also continues to lead the way in environmental sustainability and destination stewardship, with cruise lines making advancements in technology, infrastructure and operations, and in green skills training for crew".

Highlights from CLIA's 2024 State of the Industry report include:

- Cruise tourism reached 107% of 2019 levels in 2023, with 31.7 million passengers sailing – almost two million more than in 2019.
- 2024 is forecast to see 35.7 million cruise passengers sailing.
- Intent to cruise is 6% higher than in 2019, with Millennials being the most enthusiastic cruise travellers of the future.
- Global cruise capacity is forecast to grow from 677K lower berths in 2024 to 745K lower berths in 2028.
- Each year, the fleet becomes more efficient as cruise lines invest in propulsion technologies with conversion capabilities for future alternative fuels and utilise a range of technologies and innovations to advance their sustainability initiatives.

Trends in the cruise market:

- The number of new-to-cruise is increasing – 27% of cruisers over the past two years are new-to-cruise, an increase of 12% over the past year.
- Cruises are a top choice for multi-generational travel – with more than 30% of families travelling by cruise with at least two generations and 28% of cruise travellers travelling with three to five generations.
- Expedition and exploration are the fastest-growing sectors of cruise tourism, with a 71% increase in passengers travelling on expedition itineraries from 2019 to 2023.
- Accessible tour excursions are on the rise—with 45% of cruise passengers booking an accessible tour for their most recent cruise.
- 73% of cruise travellers say that travel advisors have a meaningful influence on their decision to cruise.

THE WORLD'S TWO LARGEST HYDROGEN-FUELLED SHIPS TO BE BUILT IN NORWAY

A shipyard contract has been recently signed for the construction of the world's two largest hydrogen ships. These ships have been designed and developed in collaboration with Torghatten Nord and will be built at Myklebust shipyard in Norway. The project "hydrogen ferry to Vestfjorden" began back in 2019 with preparations for a tender that was announced in 2021. In 2022, Torghatten Nord signed a contract with the Norwegian Public Roads Administration, and an extensive development process has been underway since then, including Hazid, preliminary approvals, safety analyses, and model tests. After working on this prestigious project for such a long time, it is exciting to finally start building the ferries.

Each of the two 117m long ferries will have a capacity of 120 cars and 599 passengers. As the ferries will operate in the outer Vestfjorden in Lofoten, one of the longest and most challenging ferry routes in Norway, they are designed with closed car decks and a special hull design for operating in exposed waters. The vessels incorporate new technology, ensuring safety and comfort for passengers and crew without compromising. Hydrogen-fueled passenger transportation over such a long and demanding route has not been conducted anywhere else in the world. The design and technical solutions used meet all safety aspects for ferries navigating in highly exposed waters. The ferries will be the world's largest hydrogen-powered vessels and will feature the largest hydrogen installation ever installed on a ship. Each vessel will have 6400 kW of fuel cells with associated auxiliary systems. The onboard hydrogen is stored in compressed form.

The ferries are designed for 100% zero-emission and feature a multi-hybrid propulsion system with hydrogen-electric as the primary mode and diesel-electric as the secondary mode.

© Torghatten Nord

JAPAN'S FIRST HYDROGEN AND BIO FUEL HYBRID PASSENGER SHIP

Mitsui O.S.K. Lines, Ltd. announced in mid-April that the hybrid passenger ship 'Hanaria', which uses hydrogen and biodiesel as fuels, started service in Kitakyushu. The vessel was built at the Hongawara Ship Yard Co., Ltd. for MOL Group company MOTENA-Sea, Ltd., backed by investments from MOL Techno-Trade, Ltd.

This is the first passenger ship in Japan that can select propulsion energy from hydrogen fuel cells, lithium-ion batteries, and biodiesel fuel, achieving a greenhouse gas (GHG) reduction rate of 53%-100% compared to conventional fossil-fueled vessels of the same class.

The ship's first-floor passenger cabin features a large 98-inch monitor and projector in the front, opening up a wide range of applications beyond transportation, such as events, environmental education, and venues for international conferences. In addition, the second-floor passenger cabins are designed so passengers can enjoy cruising while feeling the breeze from the ship's deck.

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THE PANAMA MARITIME AUTHORITY IS CONTINUOUSLY STRIVING TO MEET THE EVOLVING NEEDS OF THE MARITIME INDUSTRY

** We wish to thank the Ambassador and General Consul of Panama in Greece, H.E. Mrs Julie Lymberopulos, for her valuable assistance in coordinating our magazine's interview with the Panama Maritime Authority headquarters.*

In recent years, geopolitical crises have resulted in the increasing imposition of sanctions on ships. How does Panama's registry ensure compliance with these sanctions?

Flag registries, in general, play a crucial role in ensuring compliance with sanctions imposed on ships due to geopolitical crises. The Panama Maritime Authority (AMP) ensures its compliance through several practices, such as:

- Monitoring and Screening: The Panama Flag Registry maintains various tools and platforms with which it monitors the vessels making up its fleet. In addition, it has generated mechanisms and communication to verify that vessels wishing to join its fleet are not related to international sanctions issues; it continually monitors the vessels flying its flag to ensure that they are not involved in activities against national interests and the global maritime industry.
- The due diligence performed upon receipt of a flag request is not only applied to the vessel but also extends to its owners, economic groups, and operators, among others.
- Documentation and Verification: The Panama Flag Registry requires comprehensive documentation from shipowners and operators, including details of ownership, management, and operations. The registry verifies the authenticity of these documents and ensures that vessels are not being used to circumvent sanctions by changing ownership or flag.
- Inspections and Audits: The Panama Flag Registry conducts regular inspections and audits of vessels to verify compliance with international regulations and sanctions. These inspections may be scheduled or unscheduled and can occur at ports or during transit.
- Cooperation with International Bodies: The Panama Flag Registry cooperates closely with international bodies, such as the International Maritime Organisation (IMO), the United Nations Security Council, and regional organisations to stay updated on sanctions and enforcement measures; it also shares information and coordinates actions to ensure the effective implementation of sanctions.
- Penalties and Enforcement: The Panamanian Flag Registry has the authority to impose penalties on vessels or owners that violate the prescribed regulations. These penalties can include fines, detention of vessels, or even revocation of registration. Enforcement actions send a strong message to the shipping industry and deter non-compliance.
- Technological Solutions: The Panama Flag Registry leverages technological solutions such as satellite tracking, electronic documentation systems, and data analytics to enhance monitoring and enforcement capabilities. These technologies enable real-time tracking of vessels and the detection of suspicious activities.
- Training and Education: The Panama Flag Registry provides capacity and education to shipowners, operators, and maritime personnel to raise awareness about sanctions compliance requirements, helping to foster a culture of compliance within the maritime industry.

Overall, the Panama Maritime Authority (AMP) plays a vital role in ensuring that vessels flying the Panamanian flag adhere to international regulations, contributing to global efforts to promote peace and security.

How does the Panamanian Registry plan to improve the services it provides in the short to medium term?

The Panama Maritime Authority (AMP) is steadily focused on continuously striving to improve its services to meet the evolving needs of the maritime industry and enhance its competitiveness in the global market. Here are some of the strategies that the Panama Ship Registry applies to continue competing internationally:

- Enhanced Digitalisation: The Registry has invested in digital platforms and systems that streamline the processes of registration, document submission, and stakeholder communication. That includes implementing electronic documentation, online portals for registration and inquiries, and digital signatures to expedite transactions.
- Efficient Regulatory Compliance: The Panama Flag Registry is focused on ensuring that vessels under its flag comply with international regulations and standards and provides additional guidance, training, and support to shipowners and operators to facilitate compliance with regulatory requirements, including environmental, safety, and security standards.
- Improved Customer Service: The Panama Flag Registry prioritises providing excellent customer services to shipowners, operators, and other stakeholders. This involves enhancing communication channels, responsiveness to inquiries, and providing personalised support to address concerns or issues promptly.
- Strategic Partnerships: The Registry works hand in hand with other organisations, such as classification societies, technology providers, legal firms, and industry associations, to provide a better customer experience.
- Investment in Training and Development: The Panama Flag Registry invests in training and development programmes for its staff to enhance their skills and knowledge in areas such as regulatory compliance, maritime law, technology, and customer service, thus ensuring it can deliver high-quality services and support to clients effectively.
- Continuous Improvement and Feedback Mechanisms: The Panama Flag Registry has established mechanisms to gather feedback from clients and stakeholders to identify areas for improvement and address any issues or concerns proactively. It uses this feedback

Photo
© Panama Canal Authority

to implement continuous improvement initiatives and refine its service delivery processes.

By implementing these strategies, The Panamanian Flag Registry can enhance its services, strengthen its reputation, and maintain its position as a trusted provider of flagging services in the global maritime industry.

Attracting young people to the maritime professions is proving to be a great challenge for the shipping industry. What initiatives is the Panama Maritime Authority undertaking to attract young Panamanians to the maritime industry?

The Maritime Authority of Panama (AMP) recognises the importance of attracting young Panamanians to the maritime industry to ensure a sustainable workforce and promote national participation in this vital sector. To address this challenge, AMP supports young people's engagement and attraction to maritime professions in various ways, such as:

- Education and Awareness Programmes: The AMP collaborates with educational institutions, schools, and vocational training centres to raise awareness about career opportunities in the maritime industry. That includes organising career fairs, seminars, and workshops to introduce young people to various maritime professions and pathways.
- Internship and Apprenticeship Opportunities: The AMP facilitates internship and apprenticeship programmes with maritime companies, shipowners, and operators, even inside their offices, to provide practical experience and exposure to the industry. These programmes allow young people to gain valuable insights, skills, and industry connections while exploring potential career paths.
- Promoting Maritime Culture and Heritage: The AMP promotes maritime culture and heritage through educational initiatives, cultural events, and outreach programmes. By highlighting Panama's rich maritime history and traditions, the AMP aims to instil pride and interest in the maritime profession among young Panamanians.
- Industry Collaboration and Partnerships: The AMP collaborates with maritime industry stakeholders, professional associations, and international organisations to develop initiatives aimed at attracting and retaining young talent in the maritime sector, which include joint initiatives to address skills gaps, promote diversity, and create career development opportunities for young professionals.
- Digitalisation and Innovation: The AMP embraces digitalisation and innovation to make the maritime industry more attractive to young people. This includes leveraging technology, such as virtual reality simulations and e-learning platforms, to enhance training and education experiences and showcase the dynamic and evolving nature of maritime careers.
- Career Advancement and Support Services: The AMP provides career counselling, mentorship, and support services to help young Panamanians navigate career pathways in the maritime industry. This includes guidance on certifications, licensing requirements, and opportunities for professional development and advancement.
- Every year, the AMP provides significant financial support to Panama Maritime University, a leading state school in the education of young people who aspire to enter the maritime sector, in order to support its operation.

By implementing these initiatives, the Panama Maritime Authority aims to inspire and empower young Panamanians to pursue rewarding and fulfilling careers in the maritime industry, contributing to the sector's long-term growth and sustainability.

DISPELLING MYTHS ABOUT PANAMA CANAL OPERATIONS

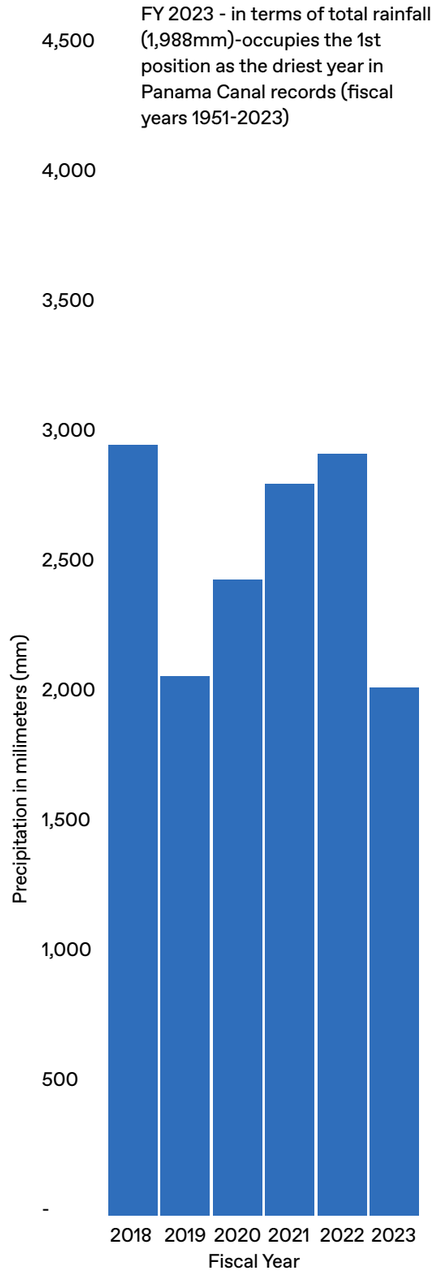
Nearing the end of the dry season, the Panama Canal is adapting to climate conditions. Based on the present and projected water level of Gatun Lake and due to the Operational Water Strategy (OWS) that the Panama Canal has implemented, additional slots announced this month will be available as of May and June, bringing the total number of transits offered up to 32 per day. Recent precipitation and progress secured by the Canal's ongoing water-saving efforts are turning the tide.

Nonetheless, misconceptions continue to linger about the recent drought's impact on the Canal's operations and global trade. To alleviate concerns, please see a breakdown of common misconceptions together with clarifying information below, which will help to shed light on the waterway's evolving operations.

Myth	Truth
There is a long queue of ships waiting to transit outside of the Panama Canal, causing a bottleneck.	The number of vessels outside the Panama Canal (approximately 50) is on par with the amount expected under the current conditions.
There is no end in sight to the drought-related transit restrictions in the Panama Canal.	Current forecasts indicate that steady rainfall is expected in late April and will continue for a few months. If this remains the case, the Canal plans to gradually ease transit restrictions, allowing conditions to fully normalise by 2025.
Ships are waiting for prolonged periods before they can transit the waterway.	More than three-quarters of vessels outside the Panama Canal today have reservations and, therefore, will transit the Panama Canal on a predetermined date with minimal to no waiting time.
The drought and transit restrictions have caused unreliability and a growing bottleneck at the Panama Canal.	Transits remain reliable so long as they are booked in advance, so the Canal urges its customers to make reservations ahead of time.
The cost of transiting the Panama Canal is significantly more expensive than normal.	Last year, mainly during the months of October and November, there was a surge in auction prices related to a market-driven congestion premium, though this is no longer the case.
Competing alternative routes may start to impact the use of the Panama Canal route.	While we are constantly monitoring potential projects that could compete with our route, we remain confident in our service and are making investments to ensure we remain the most efficient, reliable, and trusted partner for global trade.
The quality of water is less important than the quantity of water conserved by the Panama Canal.	This is simply not true. The Panama Canal has a constitutional mandate to manage lake water quality and quantity, with water for human consumption a top priority. Maintaining salinity levels within reference values and preventing any associated risks is part of that responsibility, so the quality of water in Gatun Lake is regularly monitored.
Panama is one of the world's wettest countries. With frequent rain, the Panama Canal should have plenty of water.	While Panama may receive precipitation, rainfall has not occurred as consistently within the Panama Canal Watershed due to changes in weather patterns, exacerbated by the impacts of climate change.
Solutions for strengthening water management at the Panama Canal are unclear.	While no simple answer or single project will immediately solve the challenge of water, the Canal is advancing a series of short-term and long-term solutions.

Precipitation by fiscal year
in the Panama Canal Watershed

FY 2023 - in terms of total rainfall (1,988mm)-occupies the 1st position as the driest year in Panama Canal records (fiscal years 1951-2023)



THE MARITIME INDUSTRY'S VISION FOR A ZERO-HARM FUTURE

In this interview, RightShip's Head of Commercial, Andy Symonds, talks about the pivotal role of data in propelling the shipping industry towards a zero-harm future. Mr Symonds also shares his insights on the upcoming environmental regulations and the future of decarbonisation and delves into the challenges and opportunities that lie ahead.

Andy Symonds,
Head of Commercial at RightShip,
talks to Giannis Theodoropoulos

1 Do you believe data sharing among shipping industry stakeholders will be a driving force in shipping's decarbonisation? What is the role of RightShip in promoting data sharing?

I believe that data sharing can lead to the shipping industry developing new perspectives. In many instances, the power of data to produce insights comes through volume. The more data, the more evidence to support an insight, understanding, or pattern.

Most businesses recognise the value of the data they possess but often don't have the ability to unleash its full potential in assessing, analysing, and delivering meaningful insights. The shipping industry is particularly susceptible to letting quality data languish without delivering value or advancing sustainability. This is due to a lack of neutral stakeholders with the capabilities, reach, position, resources, or intention to unlock such value for the common good. RightShip can extract value from large data sets by bringing together a host of experienced marine experts with data scientists, data engineers, software developers, and technology engineers using the latest technology available.

Driven by our zero-harm vision for the maritime industry, RightShip strives to use data-driven insights to their maximum potential. RightShip uses data sources that span all vessel sectors, combining and overlaying data sets to provide unique and powerful understandings that impact many aspects of shipping. While we live in an increasingly interconnected world, the shipping industry is quite conservative and cautious of change, but data-driven insights can help it rise with the tide.

2 What are the first conclusions you have drawn from the implementation of the Carbon Intensity Indicator (CII)? Does RightShip plan to utilise the CII data in the vetting process?

RightShip takes no position on the merits or otherwise of the CII, which is seen largely as a reflection of an owner's unique business and how their vessels have been trading globally. The benefits or impact of a CII rating on the vetting process are not clearly evident. While charterers, as far as I have heard, have shown no inclination towards using the rating in the vetting process at this early discovery stage of the CII, it is up to them to decide which terms they choose to vet on.

Many people are holding back until a convincing case is made for using the CII and the CII methodology is finalised and stable. In future, RightShip will display the CII on its platform with the annual compliance certificates, provided they are largely available.

3 Have there been any changes in the way shipping companies deal with the safety and security of their crews in light of the recent geopolitical developments?

The relentless barrage of geopolitical events over the past several years has had a profound impact on the shipping industry.

A shipping company's approach to crew safety and security varies, depending on the company's risk appetite. Regarding the situation in the Red Sea, many container liners are being diverted via the Cape of Good Hope, which is the safest route. But I've heard that some trading companies in other sectors haven't hesitated to continue sending their chartered or owned vessels through the Red Sea. They often argue that trade is untenable by any other route. They hire armed guards and take other precautions, sometimes paying crews' risk bonuses and leaving the insurance company to cover the war risk. These are age-old practices for those willing to gamble with a dangerous trade route.

In these situations, the crew's voice usually goes unheard outside of internal crew discussions, while the only thing that is heard is their acceptance of a risk bonus. Hearing the crew's voice in these and similar circumstances is a high-priority task for RightShip. Charterers often ask for tangible data-driven insights about the crew. RightShip's Crew Welfare Self-Assessment will be improved in the next few months to provide a better insight and understanding of a vessel's crew. Expect more in this area in due course.

4 Considering that incidents have a higher impact on the Safety Score than PSC deficiencies, will RightShip review the incidents' weightage, and is there a plan to share more details on the categorisation of incidents with the market?

The weightings of the various Safety Score components, including incidents, are not currently under review. However, we are actively considering new data points that may lead to potential adjustments in the future. Detailed incident categorisation information can be viewed on the RightShip Platform and our public website.

5 Can RightShip offer more training and expertise than Class Society surveyors and technical and oversight departments?

Crew training is not currently in RightShip's purview, but we are being increasingly asked about this. There have been ongoing discussions as to what RightShip could offer or who RightShip could work with in this area beyond what is currently in the market.

There needs to be accountability and a sense of responsibility toward decarbonisation. The tools and technologies required to make informed decisions about emissions are available. The key solution lies in digitalisation, as it holds the potential to break down the existing data barriers.

RightShip does not want to duplicate the work currently being carried out by Class Societies. Instead, we are looking to add value by using the unique insights gained from our extensive data on inspections and interactions in the global market. This data puts RightShip in a position to identify problem areas. Moreover, our subject matter experts, in conjunction with the market, are adept at developing and presenting best practices or highlighting areas of concern.
RightShip's e-commerce platform, RightSTORE, offers many of these insights free of charge. These insights help improve training and experience, but we are always looking for more ways to achieve our vision of a zero-harm maritime industry.

❻ **Is there a plan for RightShip to fully align with the IMO environmental rating, and if not, why has RightShip chosen to introduce a different system from the one established by the IMO?**

RightShip's new GHG Rating, launched in early December, aligned our flagship environmental rating with the IMO's methodology. Without going into the full details of the rating change, the scale of the measure has changed from a seven-point A to G scale to a five-point A to E scale to allow easy comparison with the IMO's CII rating, which is also on a five-point A to E scale. Our rating methodology has also incorporated the IMO's Energy Efficiency Existing Ships Index (EEXI) values.
The previous RightShip GHG rating has been a market staple for many years, serving the needs of charterers and stakeholders across the supply chain. As environmental concerns heighten, it is acknowledged that we should all share a common understanding and sing from the same hymn sheet, so to speak. The shipping industry has many nuances within its sectors, but this is an area of commonality where it makes sense to be aligned with the IMO.

❼ **Is the shipping industry ready to navigate the wave of environmental regulations? To what extent does the uncertainty shrouding the future of maritime fuels affect a shipping company's ability to align its operations to the standards dictated by the regulatory authorities?**

The complexity of upcoming environmental regulations will demand new skill sets from the industry. Risk positions will become more complicated, providing opportunities for some in the market, but most will be satisfied just to zero out risks. More rudimentary systems may struggle - if they don't fail completely - and there seems to be a plethora of new startups ready and willing to provide answers on the issue of commercial risks.
On the technical aspects of running vessels, the industry is ready to monitor operational emissions. There are good tools readily available for this, but what is missing is a solution for monitoring a port's operational management and applicable regulations. These factors can result in emissions beyond the control of the vessel manager, which can then lead to significant emissions even if the ship is highly efficient. For instance, long-term anchorages due to port congestion and slow operations at berth can contribute to emissions.
Regarding alternative fuels, viable options exist on paper, yet the lack of bunkering infrastructure limits the ability to procure and deploy vessels on most routes. Existing infrastructure can help services that run between dedicated ports, but it poses a significant challenge for tramping and spot charterers who depend on a port's readiness for such bunkering.
There needs to be accountability and a sense of responsibility toward decarbonisation. The tools and technologies required to make informed decisions about emissions are available. The key solution lies in digitalisation, as it holds the potential to break down the existing data barriers. Also, as an industry, we must work together to achieve better connectivity for tracking a ship's emissions. Lastly, the "it's not our concern" attitude will be very much akin to navigating against these changing tides.

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Recent geopolitical developments have radically changed the fundamentals of seaborne trade as the sanctions imposed place restrictions on the movement of commodities, changing the map of global trade. Russia's war in Ukraine has triggered a round of sanctions by the EU, UK, and US, aimed at limiting the Russian state's revenue from the transportation of energy goods. Meanwhile, the United States has reimposed sanctions on Venezuela's oil sector in response to the Maduro government's failure to allow "an inclusive and competitive election". The Biden administration had partially lifted sanctions on Venezuela in October 2023, ahead of presidential elections in the South American country this year. Additionally, the crisis in the Middle East has led to the imposition of new Western sanctions targeting Iran. Amidst this volatile geopolitical climate for the global economy, representatives from P&I Clubs highlight the impact on maritime trade and shipping.

Edited by: Giannis Theodoropoulos

WEATHERING THE STORM OF SHIPPING SANCTIONS

Economic sanctions are certainly not novel. On the contrary, they date back to roughly 432 BC when Athens issued the Megarian Decree banning all trade between Megara and the Athenian empire.

CURRENT DEVELOPMENTS ON THE SHIPPING SANCTIONS FRONT[1]

by **Daniel A. Tadros**,
Chief Operating Officer at Shipowners Claims Bureau, Inc., managers of the American Steamshipowners Mutual Protection & Indemnity Association, Inc.

Much has changed geopolitically since ancient times, but the general concept of sanctions remains rather similar in today's day and age, where they continue to have a profound impact on shipping and international trade.

Shipping sanctions wield significant influence by shaping the movement of goods and commodities across the world's oceans. Against a backdrop of geopolitical tensions and evolving regulatory frameworks, the shipping industry finds itself under intense scrutiny and in the process of adaptation. As governments implement measures to enforce sanctions regimes and combat illicit activities, recent developments on the shipping sanctions front have attracted attention and sparked renewed debate.

Unfortunately, governments' policies are not entirely in sync with public opinion, or rather, with public opinion shaped by misinformed media. Sanctions have unintentionally resulted in shipping being put under the microscope, not only by governments but also by the media, which, for the most part, are not as familiar with the nuances of international shipping. For their part, governments have turned targeted sanctions against specific vessels and companies into broader diplomatic negotiations impacting maritime trade routes, ultimately resulting in the continuous transformation of the shipping sanction landscape. One major transformation currently shaping the maritime industry is the implementation of the Russian oil price cap.

The Russian oil price cap was introduced in late 2022 by the Price Cap Coalition, comprising the G7, the European Union, and Australia, as a response to the Russia-Ukraine war. The publicly declared objective of the oil price cap is to limit Russia's revenues from oil trade while ensuring a stable global oil supply and protecting energy security. The Coalition initially set the price cap on Russian crude oil at $60 a barrel. However, by early 2023, the price cap was renewed to permit the trading of refined Russian petroleum products, such as diesel and kerosene, which trade at a premium to crude, to be sold for $100 per barrel. It also permitted Russian petroleum products, such as fuel oils, which typically trade at a discount to crude, to be sold for $45 per barrel.

At first, the price cap showed signs of success. According to the US Department of Treasury, Russia's oil tax revenue dropped over 40% in the first nine months of 2023 compared to the corresponding period in 2022. In fact, Russian oil began trading at a lower price than Brent, the global benchmark for crude oil prices. Unfortunately, the emergence of the "shadow" or "dark fleet"[2] allowed Russian oil to be traded above the price cap. The carriage of oil is a complex process, and the costs associated with such carriage make it quite challenging for financial services to know with any degree of certainty whether a shipment of oil has actually been sold below the price cap. In addition to oil being traded through the shadow fleet, excessive ancillary costs are being reported in many instances despite the lack of documentary evidence.

As a result of the efforts to evade the price cap policy, in late 2023, the Coalition launched the second phase of the price cap in the hope of accomplishing two goals: tightening compliance and enforcement to restrict the evasion of the price cap policy by malicious market participants and increasing Russia's cost of selling its oil via the "shadow fleet". Since the implementation of the second phase of the price cap, the US Department of Treasury's Office of Foreign Assets Control (OFAC) has imposed sanctions and designated vessels and their owners, shipping companies, and oil traders that used Coalition services to trade Russian oil above the cap. In one instance, OFAC, along with the US Department of State, designated a tanker owner in the United Arab Emirates and another one in Turkey to carry Russian-origin oil at prices exceeding the price cap (i.e., $75 and $80, respectively). OFAC also designated a United Arab Emirates-based shipping company, along with its 18 vessels. As a result of these designations, all property and interests owned by the blocked persons within the United States or under the possession or control of the United States are now frozen and must be reported to OFAC.

Moreover, OFAC, in coordination with the Coalition, updated its "Guidance on Implementation of the Price Cap Policy for Crude Oil and Petroleum Products of Russian Federation Origin" to strengthen the attestation and record-keeping processes. Similarly, the European Union has sanctioned over 2,000 individuals and entities since the invasion of Ukraine. The United Kingdom's Office of Financial Sanctions Implementation (OFSI) has also designated hundreds of individuals and entities.

Since the launch of the second phase of the price cap, the discount on Russian-origin oil has increased from "a low of $12 to $13 a barrel of crude oil to about $19 per barrel", according to OFAC. The implementation of the price cap regulations has, for once, led to a unified enforcement front, with the US, UK, and the EU all engaging in designations of bad actors and their vessels. Nevertheless, whether these actions will result in limiting Russia's revenue and ultimately forcing them to cease hostilities in Ukraine is anyone's guess.

The landscape of shipping sanctions continues to evolve amidst geopolitical tensions, regulatory changes, and technological advancements. Recent developments emphasise the importance of robust enforcement processes, international cooperation, and innovative solutions to effectively address challenges in the maritime sphere. As governments seek to uphold sanctions regimes, combat illicit activities, and promote maritime security, stakeholders in the shipping industry must remain vigilant and adaptable to navigate the dynamic regulatory environment. The need for enhanced due diligence and compliance deep dives has never been as critical as in today's shipping arena. Gone are the days when an owner or charterer accepted a fixture simply because it made economic sense without investigating the background of the parties involved. From owners to charterers, managers to suppliers, sustained efforts in monitoring, compliance, and dialogue are essential to promoting a more transparent, secure, and sustainable shipping industry in the face of evolving geopolitical and economic realities.

1. A special thanks to my colleague, Jasmine Roberts, for her invaluable assistance and insight.
2. Much debate exists around an accurate definition of the "dark fleet". For the purposes of this article only, the "dark fleet" can be characterised as vessels (mostly older ones) not carrying Western insurance that are anonymously owned and/or have opaque corporate structures, solely employed to trade sanctioned oil, and engage in deceptive shipping practices.

Since 1 July 2010, when the US Comprehensive Iran Sanctions Accountability and Divestment Act (CISADA) entered into force, sanctions have been the foreign policy tool of choice.

THE RUSSIAN OIL PRICE CAP SCHEME – WHAT NEXT?

by **Mike Salthouse**,
Head of External Affairs at NorthStandard

On that date, for the first time, a sanctions programme sought to not just prohibit the primary trade - in that case, the carriage of Refined Petroleum Products into Iran - but also target the service providers such as the banks, flag states, classification societies, and insurers that provided services to the sanction breaking trade.

Subsequently, programmes targeting trade from the DPRK, Iran, Syria, Venezuela, and now Russia have been rolled out with monotonous regularity, creating a degree of legal and factual complexity that is challenging for even the most determined professional to master. The most recent programme targeting Russia is unprecedented in terms of scale. At the heart of the Russian sanctions, enacted since February 2022, is the Russian Oil Price Cap Scheme (the "Scheme"), the objective of which is not to prevent trade but to control the price of one of the world's most widely traded commodities, Russian oil.

As the Scheme was being designed throughout the summer and autumn of 2022, there was an understanding within the EU and the G7 Price Cap Coalition (the "Coalition") that the Scheme would only work if the Coalition engaged with the industry to better understand shipping markets and the level of knowledge held by the various parties involved in the sale and export of oil. The industry welcomed this engagement, and the Coalition, for their part, accepted that shipowners and their financial and technical providers did not have access to information regarding the price paid for an oil cargo and should, therefore, be considered Tier III actors. As such, provided a shipowner and their service providers obtained an attestation from their contractual counterparty that the cargo was shipped below the price cap and conducted customary due diligence on the parties involved in the shipment, they could avoid prosecution or other sanctions if it subsequently transpired that the oil carried had in fact been sold above the price cap.

Even when the reported sale price started to trade above the crude oil price cap of $60, the Coalition States publically maintained the position that possession of an ostensibly valid attestation and the performance of customary due diligence was all that was required to access the so-called safe harbour from prosecution. This position has been restated by Coalition representatives during London International Shipping Week and at subsequent events.

In reality, the entire operation of the Scheme is built around this position. In circumstances in which a shipowner does not know and cannot find out the actual price of the cargo, reliance on an ostensibly valid attestation becomes sacrosanct. If a party's ability to rely on that attestation were undermined, shipowners, insurers, classification societies, Flag Registries, and banks would have no choice but to stop performing price cap trades.

Is it working?

So, twelve months on, is the Scheme working?

Certainly, Coalition representatives' public statements suggest they continue to view the Scheme as a success. Since its introduction on 5 December 2022, Russian crude oil has consistently been priced at a discount of approximately 20-25% compared to Brent crude. On 18 May 2023, OFAC published a Russian Oil Progress Report, listing the Scheme's success in reducing revenues generated by Russia from its oil sales despite increasing the volume of its exports, thus achieving its twin goals of maintaining world oil supply whilst at the same time preventing Russia from manipulating oil markets to finance its war in Ukraine.

Nevertheless, recent comments suggest that a different view may be forming within the Coalition. During a visit to London at the end of 2023, the Deputy Secretary of the Treasury, Wally Adeyemo, addressed the Royal United Services Institute and acknowledged what had been obvious for some time, namely, that as soon as a sanctions programme is introduced, those targeted by sanctions will seek to find ways to circumvent their effects.

In May 2023, OFAC issued an alert concerning the deceptive use of AIS off Russia's eastern seaboard and subsequently made the first price cap designations for price cap infractions in October. The use of secondary sanctions was based on non-Coalition entities engaging US service providers whilst carrying crude oil sold at a price above the cap. The move was interesting because, in the early days of the Scheme, US officials had publicly stated that whilst secondary sanctions were not "off the table", there was no apparent need for them at that time. Something must have happened to change that view.

In February, the UK's OFSI got in on the act, designating both vessels and management companies engaged in Scheme breaches. More significantly, all the Coalition members updated their guidance and specifically the form attestation required, which must now confer a right on its beneficiary to receive detailed price information on demand.

This change of approach seems to be based on several factors. Firstly, the growth of the so-called Shadow or Parallel Fleet has been an entirely predictable consequence of the Russian sanctions programme yet seems to have caught the Coa-

lition by surprise. The Parallel Fleet is comprised of vessels that are flagged, insured, classed, and financed in jurisdictions that are not subject to Coalition sanctions. Nobody really knows its size, but some estimates suggest that, as of today, up to 70% of Russian oil cargoes are being carried by vessels whose owners and service providers are domiciled in jurisdictions not subject to the laws of the Coalition States.

Moreover, some States have expressed concern about the regulation of tankers comprising the Parallel Fleet. One such vessel, the Pablo, suffered a catastrophic explosion on 1 May 2023, killing one person. It remains unclear how the vessel's flag state and insurers responded to the casualty and the resulting claims.

Finally, several influential commentators, including the US Treasury Secretary Janet Yellen, have publicly observed that the price cap is no longer working as planned. A World Bank Commodity report, published in October 2023, observed a narrowing of the gap between Brent and Urals trading prices and further commented:

"The price cap on Russian crude oil introduced in late 2022 appears increasingly unenforceable .... The cap has not created significant supply disruptions, with the volume of Russian oil production and exports remaining relatively constant, in part reflecting the redirection of Russian exports from EU and G7 countries to China, India, and Türkiye.... It seems that by putting together a "shadow fleet", Russia has been able to trade outside of the cap; the official Urals benchmark recently breached the cap for more than three months, averaging $80 per barrel in August".

What next?

None of this should come as a surprise. The International Group repeatedly highlighted that shipowners and their Tier III financial and service providers have no means of accessing the actual price paid for a cargo. As a result, they are entirely reliant on the attestation provided to them, with no means of verifying its accuracy.

So, what should the Coalition do next?

What it shouldn't do is ramp up enforcement efforts against shipowners, flag states, class, and insurers currently engaging in good faith in price cap trades.

Why focus enforcement on the section of shipping trying to make the unworkable work whilst ignoring the 70% or so of cargoes shipped on the Parallel Fleet?

By and large, Coalition shipowners are doing their best to comply with the requirements of the Scheme. However, even with the changes made to the text of the attestation, they have little means of verifying the price information contained in it. Many have now withdrawn from Scheme participation altogether, understandably concerned about the credibility of the attestation, which the Scheme expects them to accept at face value. Consequently, unless the Coalition wishes to stop the participation of Coalition ships, it is difficult to reach any other conclusion that those involved are doing their best within the design imperfections of the Scheme.

Instead, enforcement should focus on those actively trading and transporting cargoes above the $60 cap. There are a few choices available; firstly, the Coalition could simply ban vessels and service providers subject to its jurisdiction from carrying Russian oil. The growth of the Parallel Fleet may now mean that there is sufficient capacity to ensure a continued supply of Russian oil to world markets. Yet, such action would risk allowing Russia to charge more for its oil and potentially influence those markets by controlling the amount of oil it supplies.

If the Scheme is to be maintained, then enforcement action should be targeted at those responsible for misrepresenting the true price of the cargo, specifically the seller, shipper, and buyer. This would require new legislation expanding the scope of the sanctions to apply to parties not subject to the jurisdiction of the Coalition. Public designations of parties involved in such shipments would help Coalition ships, and service providers avoid parties known to be in breach.

Finally, OFAC and OFSI should be encouraged to adopt a less confrontational and more collaborative approach to shipowners and service providers within their jurisdictions, the vast majority of which are simply trying to do the right thing. Coalition shipowners have no interest in seeing lucrative business going to competitors who do not necessarily go to the expense of maintaining their vessels to the standard required of them by their oil-major customers. Indeed, if the parallel fleet is allowed to grow unchecked, much of the last fifty years of work by the IMO to improve safety risks will be undermined.

During its first year of operation, the Price Cap Scheme enjoyed some success but now needs to adapt if it is to remain an effective mechanism to prevent Russia from profiting from its war of aggression in Ukraine. Enforcement action should be targeted at those who misstate or hide the true price of Russian oil rather than those who have been misled by such statements. Finally, states should be encouraged to ensure that vessels trading to their shores or flying their flag comply fully with the statutory requirements of the applicable IMO conventions.

Before Russia invaded Ukraine in 2022, the shipping industry had, for a long time, been aware of sanctions on countries such as Iran, North Korea and Venezuela. Indeed, international sanctions had been imposed on Russia since their annexation of Crimea in 2014.

CHALLENGES POSED PRESENT OPPORTUNITIES FOR INNOVATION

by **Oliver Hutton**
Claims Manager, FD&D and P&I, Solicitor
The Swedish Club Greece

& **Lucie Ryan**,
Senior Claims Executive, P&I and FD&D
The Swedish Club Greece

Shipping has become reasonably familiar with restrictions, and, for the most part, the implementation of these sanctions had been effective. Russia's invasion of Ukraine, however, was met with a massive wave of sanctions against Russia, drastically challenging the shipping industry. Indeed, an entirely new test awaited owners, charterers, insurers, and other service providers trying to get a clearer picture of the latest and ever-changing sanctions landscape.

As the number of sanctioned entities, designated persons, and prohibited cargoes has grown, so have the demands and difficulties. To mitigate the heightened risk of sanction breaches, industry stakeholders have boosted their efforts to enhance compliance measures and due diligence practices. Trade associations and regulatory bodies have been providing ever more guidance to ensure that shipping companies remain compliant, and nowadays, companies and firms have dedicated Sanctions Departments.

EU

To coincide with the second anniversary of Russia's invasion of Ukraine on 24 February 2022, the EU adopted a 13th package of sanctions against Russia. With this unprecedented package of 194 individual designations, including 106 individuals and 88 entities, the number of individual listings has surpassed 2,000. By targeting Russia's military and defence sector, continuing to deny Russia access to revenue sources and essential goods and technology, and focusing on enforcement and circumvention, the EU remains committed to undermining Russia's war effort. At the time of writing, a 14th sanctions package targeting Russia's LNG sector is being discussed.

Per-Voyage Attestations

Since the beginning of 2024, the most notable development has occurred within the oil and petroleum sector. In particular, starting as of 19 February 2024, it is required that service providers receive attestations each time they lift or load Russian oil ("per voyage") and that itemised price information for ancillary costs is provided upon request.

Actors in the supply chain are categorised into three tiers: those with access to price information (Tier 1), those who are sometimes able to request and receive price information (Tier 2), and those who do not have direct access to price information (Tiers 3A & 3B). Tier 3A actors, consisting non-exhaustively of shipowners, ship management companies, insurers, insurance brokers, and P&I Clubs, must obtain attestations within 30 days of each lifting or loading of Russian oil or Russian petroleum products, and itemised ancillary cost information should be provided to them within 30 days of their request. Additionally, if a ship-to-ship (STS) transfer occurs, it is deemed a new voyage and requires a separate attestation.

Crime and Punishment

Last month, in another move to tackle circumvention, the European Council approved the introduction of EU-wide criminal offences and minimum penalties for EU sanctions violations. Member states must ensure that violations are punishable by effective and proportionate criminal penalties, including fines and disqualifications from business or economic activities.

Additionally, intentional violation of sanctions must result in a prison sentence as the maximum penalty.

US

Venezuela

On 18 October 2023, following President Nicolás Maduro's promise to hold free and fair elections, the Biden administration issued General License 44. This license temporarily authorised all transactions related to Venezuela's oil and gas sector, including transactions involving Petróleos de Venezuela S.A. and related entities, until 18 April 2024. However, subsequent actions by the Maduro government have diminished the prospects of legitimate elections, prompting the Office of Foreign Assets

Control (OFAC) not to renew General License 44. Instead, OFAC has replaced it with General License 44A, which allows a wind-down period for transactions authorised by General License 44 until 31 May 2024.

Metals
In April 2024, the OFAC published new determinations concerning certain Russian-origin metals, adding to the long list of sanctioned metals already containing certain iron and steel products. As of 13 April 2024, it is prohibited to import aluminium, copper, and nickel from the Russian Federation into the US and to export, re-export, sell, or supply these metals to any person located in the Russian Federation, except those produced prior to 13 April 2024.

Iran
On 20 April 2024, the US House of Representatives passed the 21st Century Peace through Strength Act, the fourth pillar of a foreign aid package assisting Israel, Ukraine, and the Indo-Pacific, containing new sanctions that target Iran's oil sector. Sanctions against Iran have been broadened to include foreign ports, vessels, and refineries that knowingly process or ship Iranian oil or petroleum products in violation of existing US sanctions. Secondary sanctions have also been expanded to cover all transactions between Chinese financial institutions and sanctioned Iranian banks used for the purchase of petroleum and oil-derived products.

UK
Directly related to the above OFAC determinations, in April 2024, the UK government announced a joint action with the US to "clamp down harder on prohibited Russian metal exports", confirming that the London Metal Exchange and the Chicago Mercantile Exchange will no longer trade new aluminium, copper, and nickel produced by Russia. This builds on the existing prohibition, where a trade licence allowed the acquisition of a warrant relating to Russian metals located in a third country on a global metal exchange. Now, the licence to acquire a warrant applies only to Russian metals produced before 13 April 2024.

Reporting Requirements
In December 2023, the UK government introduced new reporting requirements under 'The Russia (Sanctions) (EU Exit) Regulations 2019' to strengthen transparency in relation to frozen assets and to monitor compliance with and detect evasion of financial sanctions. The Office of Financial Sanctions Implementation (OFSI) has published new and updated guidance. Relevant companies must now notify OFSI about any funds or economic assets they hold for the Central Bank of Russia, the Russian Ministry of Finance, or the Russian National Wealth Fund. Furthermore, individuals designated on or after 26 December 2023 must proactively disclose details of their assets in the UK, or their global assets if they are UK nationals, to OFSI within ten weeks of their date of designation.
Looking ahead, it is likely that the trend of increased sanctions activity in the shipping industry will continue, driven by geopolitical tensions and evolving regulatory frameworks. In response, the shipping industry must remain vigilant and proactive in its approach to compliance; keep well informed; invest in technology and expertise to bolster risk management capabilities; and foster a culture of compliance throughout.

While the challenges posed by shipping sanctions are formidable, they also present opportunities for innovation and adaptation. By embracing best practices in compliance and leveraging emerging technologies, the shipping industry can navigate the choppy waters of sanctions with confidence and resilience.

Economic sanctions have a very long history, and have been used frequently by governments and international institutions, as an alternative to military action, to put pressure on State and non-State entities to comply with perceived acceptable standards of behavior.

SANCTIONS AFFECTING SHIPPING: RECENT DEVELOPMENTS

by **Mira Milouseva**,
Fleet Manager at Britannia P&I Club

There has been a gradual increase in the imposition of sanctions over the last century, and particularly since the 1980s. This has culminated in the sanctions imposed by various countries against Russia following its invasion of Ukraine in 2022. Taken together, current US, EU and UK sanctions on Russia probably represent the largest package of economic sanctions that have ever been imposed on one country.

A wide range of sanctions are currently in place targeting numerous countries, groups and individuals. The following summary focuses on some of the most recent developments in sanctions relevant to the maritime industry and, in particular, P&I insurance relating to Russia, Venezuela and Iran.

Russia

While the wide-ranging sanctions restricting the transportation of many Russian dry cargoes, such as steel and coal, have remained relatively unchanged in recent months, there have been significant developments relating to oil and oil products. By way of reminder, in December 2022 the so-called Price Cap Coalition (comprising the G7 group of countries, the EU and Australia) imposed a cap (Oil Price Cap or OPC) limiting the price of Russian origin crude oil that vessels can lawfully carry. The price cap was extended to all Russian oil products in February 2023. Significant amendments to the OPC regulations were introduced in February 2024 which are relevant to shipowners' P&I cover.

The two key changes are:

- The tightening up of requirements for attestations from shipowners confirming that the Russian oil or oil products their ship is carrying comply with the OPC. Previously, an annual attestation of compliance with the OPC was considered acceptable. Since February 2024, shipowners are required to provide an attestation to their P&I insurer for every voyage on which their ship carries Russian oil or oil products within 30 days of loading the cargo, with no time extensions permitted. If a cargo is loaded via a ship-to-ship operation, this will be considered to be a new voyage and will, therefore, require a new attestation.
- Shipowners must ensure that, if requested to do so by their P&I insurer, they are able to provide, within 30 days of the request, itemised price information for the ancillary costs of shipping the cargo, e.g. freight, insurance costs, export licences, port dues, fees for customs clearance etc. There is no definitive list of what ancillary costs are, and they will differ depending on whether the cargo has been sold on a CIF or FOB basis. To ensure they can satisfy this new requirement, shipowners should include terms in charterparties and contracts of carriage requiring their counterparties to provide itemised price information within a period that enables them to meet the 30 days' deadline.

To reflect the tightening of the OPC regulations, BIMCO has recently published a revised version of its Russian Oil Price Cap Scheme Clause. Shipowners should be aware, however, that the clause is only applicable to the transportation of oil or oil product cargoes and not bunkers.

The price cap regulations are intended to allow traders, shipowners, charterers and service providers to engage lawfully in the sale, purchase and carriage of Russian oil and oil products by sea. However, in reality, they have imposed a heavy burden on the shipping sector and insurers, as they are challenging to implement, control and enforce. The OPC regulations have also led to an exodus of about 800 tankers from the twelve International Group P&I Clubs into other P&I insurers who are unable to match the level of cover and reliability that IG Clubs can provide (the so-called 'parallel fleet'). Furthermore, the regulations have driven the export of Russian oil cargoes away from Europe and into China, India and Turkey in particular. To reflect this, it is notable that in the last few weeks the US has imposed sanctions on several companies in China and Hong Kong for their alleged support of the Russian conflict with Ukraine.

It remains to be seen how sanctions against Russia will be further developed. However, given that in early May the EU discussed the introduction of sanctions against Russia's Liquefied Natural Gas (LNG) industry, which to date has been largely unaffected, it seems that unless Russia withdraws or scales back its invasion, yet more sanctions are likely to be imposed.

Venezuela

For several years, to put pressure on the Venezuelan government, the US has prohibited the carriage of exported or imported products relating to the Venezuelan oil and gas sectors, including trade with the Venezuelan state oil company (PdVSA) and its affiliates. However, in October 2023, the US Office of Financial Control (OFAC) issued General Licence 44 (GL 44), which permitted transactions relating to the Venezuelan oil and gas sectors until 18 April 2024. This relaxation of sanctions has proved to be short-lived as OFAC has subsequently issued GL 44A, which requires any transactions that were previously permitted under GL 44 to be wound down by 31 May 2024.

The US will, no doubt continue to assess its sanctions policy against Venezuela depending on local political developments, with Venezuelan elections scheduled for late July 2024. In the meantime, shipowners have been advised by IG P&I Clubs to conclude all voyages involving the carriage of Venezuelan oil cargoes by the 31 May 2024 wind down date.

Iran

Iran has been subject to a variety of sanctions for many years. While EU and UK sanctions have been more limited in recent years, US sanctions remain very extensive, including prohibiting the carriage of any Iranian oil or oil products. The US sanctions do not only apply to US entities but have extra-territorial effect. As a consequence, ships entered with IG P&I Clubs avoid carrying Iranian oil and oil products and such trade is only undertaken by ships operating outside the IG.

Following Iran's attack on Israel in April 2024, several Iranian individuals and entities have been sanctioned by both the US and UK. There have also been discussions within the US and EU about whether further sanctions should be imposed on Iran. This suggests that there could be a further tightening of Iranian sanctions in the foreseeable future.

As the above summary indicates, sanctions remain a fast developing area, with the potential to affect large parts of the shipping sector. It also seems certain that governments and international organisations will continue to use sanctions widely as a means of economic warfare. Due to the potential negative impact of breaching sanctions, shipowners are always advised to conduct thorough due diligence checks on the entire trade chain before they engage in any trade which has a potential sanctions risk.

The above summary update on sanctions is for general guidance only and is not to be construed as a legal advice. For more detailed information and/or analysis of any current sanctions issue, please contact your P&I Club and/or lawyer.

The US will, no doubt continue to assess its sanctions policy against Venezuela depending on local political developments, with Venezuelan elections scheduled for late July 2024. In the meantime, shipowners have been advised by IG P&I Clubs to conclude all voyages involving the carriage of Venezuelan oil cargoes by the 31 May 2024 wind down date.

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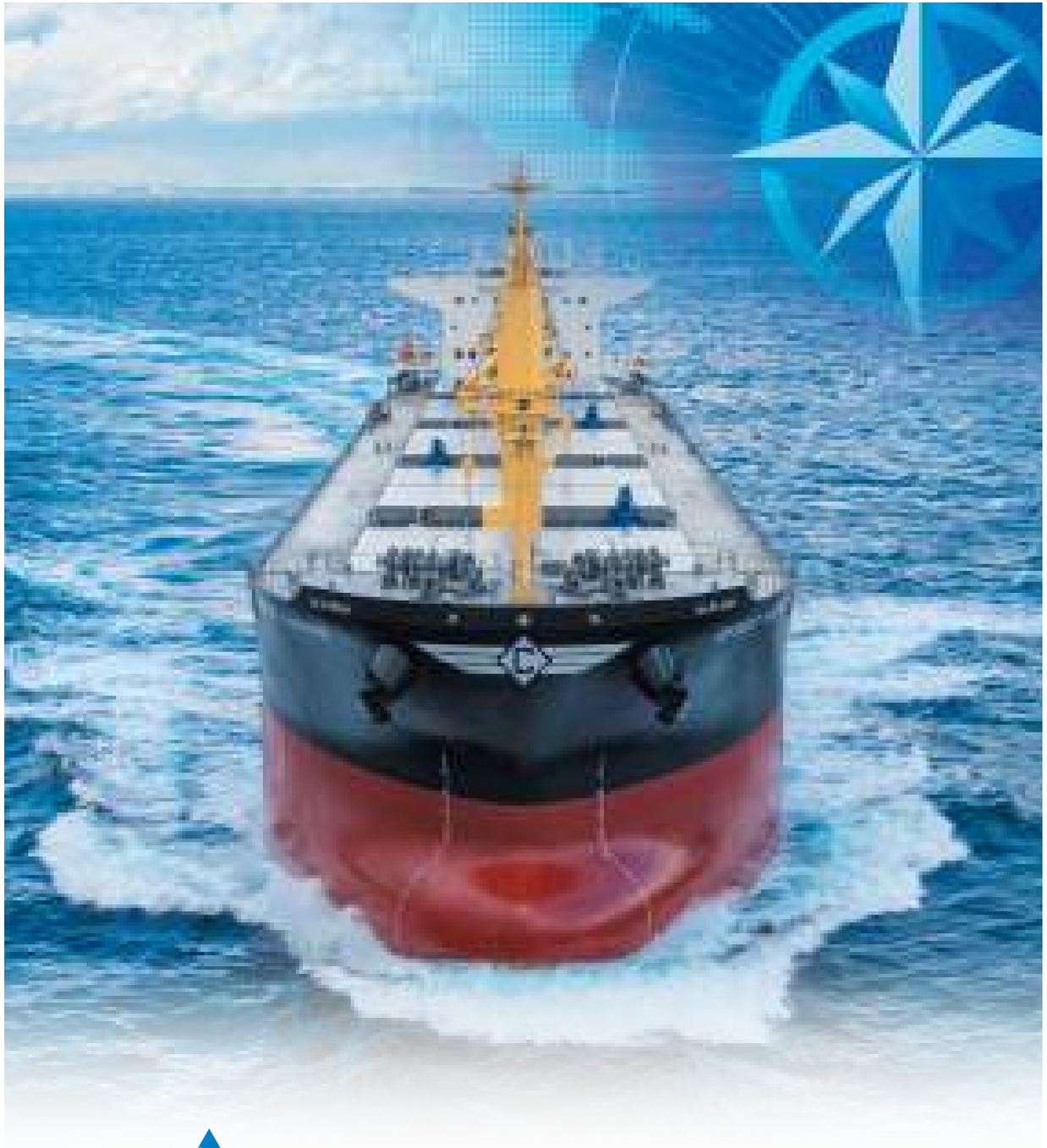
The Alba - Thenamaris Executive Certificate in Shipping Management was addressed to 50 executives, that have grown into a learning community. The Organisation, in collaboration with Alba, recently offered the group a Refresher Course in Energy Transitions in Shipping.

In the post-pandemic years, companies operating in the shipping industry, are increasingly interested in leadership focused programmes. Alba Executive Development has co-designed two Leadership Development Programmes in collaboration with the Human Resources department of Euronav, while during the last year, ERMA FIRST has been collaborating with Alba in the design of its Leadership Excellence Academy.

On top of companies, several networks and collective initiatives related to Shipping, are equally interested in training and education. Alba Executive Development collaborates with organisations like HEMEXPO (Hellenic Marine Equipment Manufacturers & Exporters) and WISTA Hellas (Women's International Shipping and Trading Association) to offer programmes exclusively for their members. Having a mutual learning mentality in its core, Alba Executive Development (EXED) celebrates and encompasses the "lessons" learned by its cooperation with the shipping industry: a community with high-quality standards, a group of executives showcasing resilience in their demanding work, agility to constant changes in their work environment, and above all great dedication and commitment to their industry.



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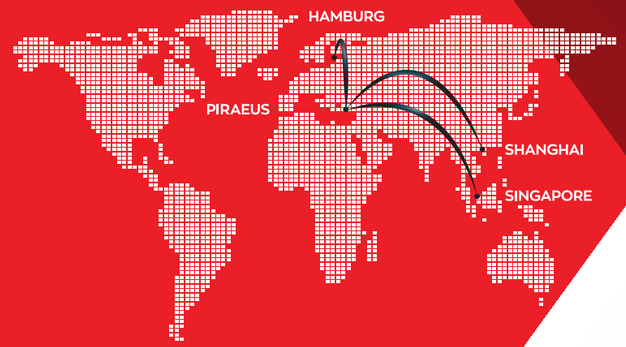

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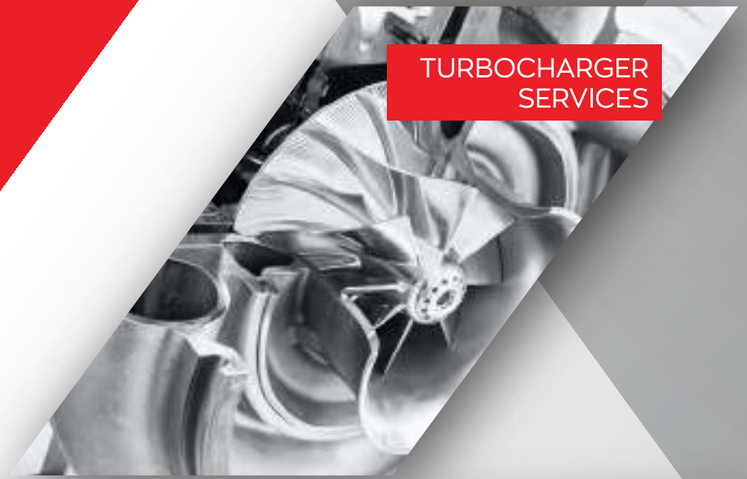

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HORIZON FROM THE BRIDGE

Through a seafarer's eyes

by Capt. George Georgoulis

SHIPPING INDUSTRY CALLS FOR UN HELP AFTER IRAN'S REVOLUTIONARY GUARDS SEIZE MSC ARIES AT THE STRAITS OF HORMUZ

Iran's Revolutionary Guards seized the container vessel MSC Aries in the Strait of Hormuz days after Tehran vowed to retaliate for a suspected Israeli strike on its consulate in Damascus on 1 April. Iran had said it could close the crucial shipping route. The 25 crew members of the MSC Aries, which was seized by Iran on 13 April, are being gradually released.

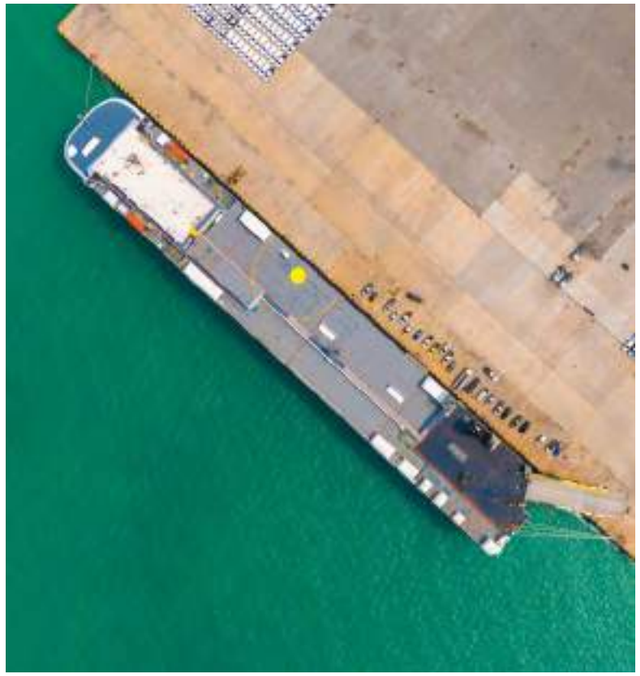
The International Transport Workers' Federation (ITF), the leading seafarers' union, said that their priority was the welfare and safety of the seafarers onboard.

Portugal's foreign ministry summoned Iran's ambassador to condemn the attack on Israel by Tehran and to demand the immediate release of the Portuguese-flagged ship.

The global shipping industry, reacting to the seizure of the MSC Aries, has sent an urgent joint letter to the Secretary-General of the United Nations, Antonio Guterres, urging the UN to do more to protect maritime security and innocent seafarers. The open letter, co-signed by 16 maritime industry associations and social partners, calls for assistance and for all member states to be reminded of their responsibilities under international law. In detail, the undersigning bodies stated:

"The maritime industry, represented by the organisations behind this letter, are grateful for the recognition that the UN Security Council and you personally have placed on the shipping industry and the importance of the free movement as set out in international law. We also thank and applaud IMO Secretary-General Arsenio Dominguez for all the hard work raising the profile of shipping and our seafarers. However, the seizure of the MSC Aries by Iranian forces at 50 nautical miles north-east of Fujairah, United Arab Emirates, at 06.37 UTC on Saturday, 13 April, has once again highlighted the intolerable situation where shipping has become a target. This is unacceptable. We have seen a worrying increase in the attacks on shipping. Shipping is not a target with no victims. Innocent seafarers have been killed, and seafarers are being held hostage. This would be unacceptable on land, and it is unacceptable at sea. The world would be outraged if four airliners were seized and held hostage with innocent souls onboard. Regrettably, there does not seem to be the same response or concern for the four commercial vessels and their crews being held hostage. Seafarers kept the world fed and warm during the pandemic with vital medicine, food, and fuel delivered, irrespective of politics. Seafarers and the maritime sector are neutral and must not be politicised. Protecting seafarers is a moral duty. Shipping is a resilient industry; throughout history, it has delivered trade in the face of the most overwhelming threats and circumstances. Given the continually evolving and severe threat profile within the area, we call on you for enhanced coordinated military presence, missions, and patrols in the region to protect our seafarers against any further possible aggression. The industry associations ask that all member states be formally reminded of their responsibilities under international law. And we ask that all efforts possible are brought to bear to release the seafarers and protect the safe transit of ships".

According to the open letter from the shipping industry, two main demands are presented. The first is the immediate release of the ship and its crew through the mediation of the United Nations, and the second is the support of shipping with an increase in military forces in such an important maritime area so as to discourage merchant ship seizure incidents and consequently the security of maritime trade.



COMMON GUIDANCE ON THE PRESENTATION AND LOADING OF VEHICLES

The Vehicle Carrier Safety Forum (VCSF) published its first industry good practice guidelines entitled 'Common Guidance on the loading and presentation of vehicles'. The guidance and supporting checklists are intended to reduce the risks associated with the shipment of unaccompanied vehicles, including electric and hybrid ones, and to promote the safety of terminal and vessel personnel and the protection of property, including the vessels themselves.

The Vehicle Carrier Safety Forum is a consortium of vessel operators, insurers, and other industry experts whose role is to promote safety on vessels designed to carry vehicles. The guidance is supported by industry bodies such as the International Group of P&I Clubs, the International Chamber of Shipping, and the TT Club.

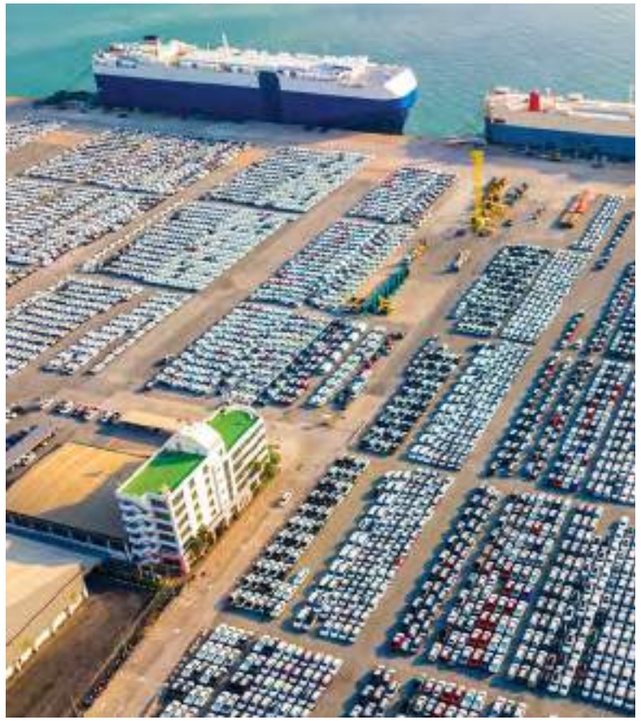
The guidelines and checklist define the information that should be provided and the checks to be carried out at:

- the time of the booking,
- when the vehicles arrive at the terminal,
- during loading and stowing, and
- throughout the voyage.

The guidelines are intended to be used in conjunction with specific procedures outlined by individual vehicle manufacturers, shippers, terminals, or carriers with respect to information such as vehicle separation on board the vessel or emergency response. They are applicable to the transport of unaccompanied vehicles on board vessels engaged in international voyages. For the purposes of these guidelines, a vehicle is defined as a wheeled or tracked unit capable of being driven or towed.

To ensure that the loading of the vessel is planned properly, accurate vehicle information must be provided, which will include a description of the unit, whether it is new or used, its condition, its dimensions, volume and weight, the type of propulsion system fitted, whether the vehicle has low ground clearance, and details of its lashing points. Should any unit require special handling or have controls that may make handling more difficult, then specific instructions should be provided at this time. These should also be affixed to the unit, and stevedores at load and discharge ports should be advised. As for hazards, As vehicle safety inspection criteria and stowage requirements associated with different vehicle propulsion types can vary, the propulsion type must be specified at the time of booking. Consideration should be given to the effect on vessel stability and deck loading as a result of the increased weight of electric vehicles. Load planning should consider whether it is preferable to stow similar models and types of vehicles together in block stows and the challenges this may present with regard to safe access and emergency response. Any specific stow requirements will require cooperation between the vessel and the terminal to ensure these can be achieved efficiently.

Each EV or hybrid manufacturer produces a vehicle and model-specific first responders or emergency guide, which describes the design and configuration of the vehicle's battery pack and high voltage system and includes procedures to be followed in an emergency or system failure. It may also contain guidance on activating transport mode if applicable. This guide should be provided during the booking and made available to all parties involved in handling the vehicles. Confirm requirements regarding activation of transport mode, where applicable, and define the party responsible for activating it. The process for notifying the responsible party should also be confirmed. The responsible party must confirm with others in the transport chain that the transport mode has been activated and engage with the OEM Original Equipment Manufacturer (OEM) to determine the safest charge level for transportation, taking into account energy density and the effect this will have should thermal runaway (a phenomenon in which the lithium-ion



cell enters an uncontrollable, self-heating state) occur.
A percentage of 30-40% is considered to be the best balance between ensuring the vehicle has sufficient power for manoeuvring during transportation and safety. Some OEMs typically require higher states of charge to protect the vehicle's systems. In the event of thermal runaway, batteries with a lower state of charge may release significant quantities of highly toxic, flammable, potentially explosive, and corrosive gases. Batteries with a high state of charge can produce flame jets, in addition to the gases, in the event of thermal runaway. When the battery of an electric vehicle is in thermal runaway, the gases will vent with loud popping or screaming noises followed by black and white clouds of what appears to be smoke.

Presentation at the Terminal
On arrival at the terminal, all vehicles should undergo a safety inspection to ensure that they do not pose any undue risk to personnel, other vehicles, the carrying vessel, or the environment. The safety inspection will confirm that the vehicles can be safely loaded, that fire risks are minimised, and that the vehicles can be safely and effectively stowed and secured on board.

When being prepared for loading, all vehicles will undergo another physical safety inspection to ensure that they can be safely driven and do not present a fire risk. Maintaining a fire watch at all times, particularly if fire detection systems have been disabled during loading, is critical to ensure potential issues are identified at an early stage. In the event of any of these signs being apparent, emergency actions, as specified in individual procedures, should be taken. Fire/smoke detection systems and ventilation systems should be operated in accordance with individual company procedures. A pre-loading meeting should be held between all relevant parties to confirm arrangements and discuss the loading plan. Once in the final stowage position, all vehicles must have the ignition system turned off, keys removed, parking brake set, and transmission placed in park or for manual vehicles left in gear. Hybrid and electric vehicles should undergo an additional check to confirm that the ignition is off.
It is recommended that vehicles should undergo temperature monitoring during loading and once in the final stowage position. Used light Internal Combustion Engine (ICE) vehicles should have their battery disconnected and isolated, and this should be documented. Once stowed, high or heavy units will have the battery kill/isolation switch activated. Any vehicles or equipment with moving parts should be confirmed as locked down and be suitably secured for sea conditions. All vehicles must be secured in accordance with the vessel's CSM and lashing plan.

During the Voyage
All vehicles should be regularly inspected throughout the course of the voyage to ensure that all lashings are secure, that monitoring equipment is available, that no vehicle is showing any increased temperature, and that no fluid leaks have developed. Where leaks are noted, these should be contained and cleaned up promptly. On electric and hybrid vehicles, these leaks may be electrolytes from the battery packs, which are highly toxic and should only be cleaned up with appropriate PPE. Fire/smoke detection systems for vehicle decks should be fully operational throughout the voyage. All but essential work should be avoided. Essential work should only be conducted after the activity has been risk-assessed. Any situation that potentially increases the risk of an incident should be reported to the owners and operators as a matter of urgency in accordance with individual company procedures.

SHIPPING COMPANIES' DRUG AND ALCOHOL POLICIES

The Oil Companies International Marine Forum (OCIMF) and the entire maritime industry recognise the risks and potentially serious impacts associated with the use of drugs and alcohol, as their misuse can put the safety of maritime operations at risk. There can also be legal requirements and consequences in relation to drugs and alcohol in the maritime industry. The reasons for substance use can be complex. The OCIMF has urged shipping companies, through its guidelines for the control of drugs and alcohol in the maritime industry, to adopt a clear drug and alcohol policy that includes preventive and supportive measures as well as a testing programme and disciplinary measures. Creating an environment where individuals feel supported and able to ask for help is an essential aspect of managing the risk of substance abuse.

For the purpose of the guidelines mentioned above, drug and alcohol use is defined as the use of prescribed and over-the-counter medication, self-medication, recreational drug or alcohol use, drug or alcohol dependency, and accidental exposure to drugs or alcohol.

When designing a policy and procedures in relation to the control of drugs and alcohol use, legal and other medical professional advice should be sought on the specific circumstances, including a review of the legal authority in the country or jurisdiction where workplace drug or alcohol testing may take place.

Effective drug and alcohol use management is best focused on prevention. This should extend to creating a culture where people feel able to come forward with a problem and ask for help rather than one that solely relies on disciplinary action. How leaders respond will greatly influence future behaviours and reduce the associated stigma or barriers to seeking help. People are more likely to come forward if they know they will be treated fairly, compassionately, and with respect. It is essential to recognise the complexities around the use of drugs and alcohol.

Drug and alcohol use can occur in a range of different circumstances and can affect all kinds of people who may not show obvious signs. Indeed, some signs may be caused by other factors altogether, such as anxiety, stress, or other mental or physical health problems. Shipping companies should raise awareness and understanding of these health and wellbeing issues to avoid assumptions and biases, including unconscious biases, and promote a psychologically safe environment. The success of implementing a holistic drug and alcohol policy is directly related to leadership's commitment to wellbeing, how it is communicated, and how it is experienced across a shipping company.

A clear and explicit drug and alcohol policy can benefit all entities involved in the industry. This policy may be part of an overall health and safety policy, which could be linked to a company's health and wellbeing offering, thus ensuring a consistent risk-based approach by combining a preventive and supportive approach to help seafarers while also addressing operational risks through appropriate barriers and disciplinary action when needed.

At a minimum, organisations should implement a policy that addresses prohibited behaviours or actions, if required. A company's policy on drug and alcohol abuse should be formulated in consultation with employees and include prevention, education and awareness, leadership behaviours and culture, treatment, and rehabilitation, as well as details about drug and alcohol sampling and testing procedures.

Companies should put barriers or mechanisms in place concerning 'impaired cognitive function' so that they can recognise the impairment, whether it is caused by the effects of drugs, alcohol, or other factors, before individuals get to the next stage, i.e., 'impaired capability'. Therefore, a company's drug and alcohol policy must be aligned with its health and safety policy and should set out clear and consistent expectations regarding conditions of employment, employee behaviour, and the consequences of not meeting these expectations. The OCIMF guidelines recommend that companies set out in their policy a clear and consistent, legally compliant stand-down procedure for those cases where the drug or alcohol test is confirmed positive. Employees are expected to follow stand-down orders. Depending on the company, role, and situation, this could mean standing down from all duties or standing down from safety-critical duties only. The policy should also highlight and describe those situations or behaviours where disciplinary or other action will be taken, up to and including termination of employment.

CHINA TAKES ACTION TO PREVENT ELECTROMECHANICAL EQUIPMENT FAILURES ON SHIPS

On 3 April 2024, the Maritime Safety Administration (MSA) of the People's Republic of China issued a notice on the special action to prevent mechanical and electrical equipment failures on ships.

In recent years, Chinese maritime authorities have paid particular attention to the major risks to ship safety caused by mechanical and electrical equipment failures. Shanghai MSA has issued the "Announcement of Shanghai Maritime Safety Administration on Strengthening the Safety Management of Ships with Machinery Failure" and the "Notice on Further Strengthening the Safety Self-inspection of Ships Planning to Enter the Yangtze Estuary Deepwater Channel". Through the formulation and implementation of these specific administrative regulations, the safety management of ships entering and leaving Shanghai

port has been further strengthened, effectively reducing such risks and preventing and containing the occurrence of water traffic accidents.

The MSA's special action was launched on 7 April 2024 and will end on 31 October 2024. Its aim is to prevent ship mechanical and electrical equipment failures on ships entering Chinese ports (including seaports and river ports).

The MSA will conduct detailed inspections at all levels of ship mechanical and electrical equipment in combination with their routine safety inspections. If it is discovered through various channels that a ship has experienced mechanical and electrical equipment failures, a special inspection will be performed. For vessels that have experienced two or more mechanical and electrical equipment failures in the past 12 months, the MSA will invite their shipping companies and ship inspection institutions to jointly carry out inspections and require that the ships submit accident analysis reports and preventive measures for mechanical and electrical equipment failures.

Additionally, ships experiencing mechanical or electrical equipment failures should proactively report to the local maritime administration agency and accept special safety inspections, as required. Those who fail to do so will face more stringent and severe penalties in accordance with the law once discovered.

This special action is similar to the "Concentrated Inspection Campaign" scheme, organised by the major PSC MoU around the world. During this special action, the Chinese MSA will inspect the mechanical and electrical equipment of ships entering Chinese ports. In combination with the ship's "Pre-departure inspection checklist", the ship will have to conduct detailed technical inspections and tests on the main propulsion device and its auxiliary equipment, boilers, main power supply, emergency power supply, steering device, etc., to ensure that its mechanical and electrical equipment are in reliable working status and well prepared for the forthcoming inspection.

The shipping company must also assign sufficient and competent crew members onboard to meet various safety operation and emergency response requirements and ensure that the ship safety management system (SMS), especially the parts related to the routine operations, maintenance, testing, emergency management, and accident/near miss reporting are effectively implemented. Crew members should be able to operate and test various mechanical and electrical equipment properly and effectively, in compliance with the corresponding procedures or instructions, report mechanical and electrical equipment failures related to accidents or near misses, and rectify the deficiencies identified therefrom.

The SMS should contain a drill and training plan that is relevant to mechanical and electrical equipment failures so that the ship can conduct drill or on-scene training in accordance with the plan, improve the operation and emergency response capabilities of the crew, and familiarise the crew with the emergency response measures and their respective emergency responsibilities in the event of accidents caused by mechanical and electrical failure. The emergency drills/training scenarios related to mechanical and electrical equipment failures may include but are not limited to main engine (M/E) failure, M/E emergency local control, blackout, emergency steering, operation, testing procedures for emergency generators, etc. If an accident due to mechanical or electrical equipment failure occurs, appropriate actions and measures should be taken immediately to minimise or eliminate the adverse effects of the accident. The ship should also proactively report to the local MSA and cooperate with and accept special safety inspections by the local MSA.

China's maritime authorities have updated its ports' risk assessment following the M/V DALI incident in order to prevent the probability of a ship's main engine and power systems failures. Especially after the consequences of the M/V DALI incident on the Port of Baltimore, additional measures must be taken to minimise the possibility of a recurrence. Finally, even in the extreme case of a recurrence, a ship must be ready in all respects to limit the consequences by effectively responding to the incident.

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MARITIME KEY WORKERS DESERVE BETTER

Livia Spera,
General Secretary of ETF

talks to Giannis Theodoropoulos

The General Secretary of the European Transport Workers' Federation (ETF), Livia Spera, sheds light on the pressing issues surrounding labour shortages in the shipping industry and the imperative to enhance the appeal of a seafaring career. Delving into the complexities of the shipping industry, Mrs Spera addresses the current challenges faced by seafarers, identifies key areas for improvement in their working conditions, and emphasises the critical role of legislation enforcement and compulsory measures in effecting meaningful change.

❶ Shipping is facing a shortage of seafarers, which is a significant challenge for the industry's future. What strategies can the shipping industry implement, and what initiatives can it undertake to increase the attractiveness of the seafaring profession?

Looking at shipping, we observe a shortage of seafarers, an ageing workforce, and a high attrition rate. Although the profession has always faced particular challenges, it has now become evident that something has to be done regarding labour shortages, as many seafarers choose to give up their careers in merchant shipping not only because of the physically demanding nature of the work but also because of its specificities, like being away from home for months. The high number of active seafarers abandoning their careers highlights the need to make the profession more attractive.

When discussing the issues of seafarer shortages and attrition, as well as the sector's attractiveness, we should start by looking for ways to improve the working conditions, well-being, and career prospects of seafarers. Although the role of stakeholders and social partners is vital, governments and EU institutions also play a crucial role, so it is high time they assumed their responsibilities. Guidelines, Best Practices, and Recommendations implemented voluntarily are not enough. In reality, the industry needs effective enforcement of existing legislation and compulsory measures. If the rules are not working, we must change them.

Recently, the ETF announced its horizontal Manifesto for European Elections 2024: "A New Deal for Fair Transport" and the Seafarers and Dockers Manifesto for a fair Maritime Sector. These documents and the other sectoral ETF Manifestos are not just a set of demands but a roadmap towards fairness, safety, and respect for all transport workers.

Europe is still far from ensuring a socially sustainable shipping and port sector, fair competition in the EU maritime cluster, and a just transition for maritime workers. The aim is for the European and UK Dockers and Seafarers to enjoy the benefits of a fair maritime industry.

❷ On this last note, what measures can be taken to increase job satisfaction within seafaring? What feedback do you receive from seafarers about improving conditions on board?

The realities of seafaring must be improved to make it easier to convince young people to embark on seafaring careers and tackle the challenges of recruiting and retaining skilled personnel.

The enforcement of existing legislation and legally binding legislative initiatives is vital for addressing urgent areas within the industry, such as mandatory due diligence, which will push companies to ensure their supply chains are free of exploitation and abuse, tackling fatigue at sea, the falsification of the work/rest hours records, and seafarer criminalisation when something goes wrong at sea, particularly if it relates to unintentional marine pollution. Other areas include tackling the gaps in the social protection and pension regimes of seafarers, combatting bullying and harassment, meaningfully preventing EU-controlled ships from changing to Flags of Convenience, and creating quality EU jobs and training opportunities for EU seafarers. The latter can happen by revising the Maritime Transport State Aid Guidelines - shipowners receiving state support should have more substantial obligations to EU citizens and seafarers. Finally, it must be ensured that cases like the P&O's dismissal of shipping staff are not repeated in the future.

We can also consider other essential areas, such as promoting a culture of respect for diversity, ensuring access to quality healthcare services both onboard and onshore, offering reliable, free-of-charge internet connectivity, and improving recreational and sanitary facilities.

These are some of the main demands and concerns of seafarers. Tackling them could make the profession more attractive to new workers, particularly women, who are significantly underrepresented in our industry.

❸ During the COVID-19 pandemic, the global community acknowledged the pivotal role of seafarers employed on merchant ships. After that extremely challenging period, what actions have been taken to improve seafarers' work-life balance and combat fatigue at sea?

The pandemic exposed the fragility and vulnerability of the global supply chain, with seafarers being pushed to their limits. As countries entered lockdowns to stop the spread of the virus, hundreds of thousands of seafarers were left stranded at sea, denied repatriation and, in many cases, access to shoreside medical support.

Despite their critical role in securing global supply chains, seafarers were neglected during the pandemic and received supportive words

The realities of seafaring must be improved to make it easier to convince young people to embark on seafaring careers and tackle the challenges of recruiting and retaining skilled personnel.

and messages only after it was over. Maritime key workers deserve better. Our union members feel that their work was not adequately recognised in practice and that the pandemic accelerated the industry's existing problems, with some employers taking advantage of the prevailing uncertainty.

We believe that the maritime industry is at a crossroads. Most unresolved issues predating the pandemic continue today and still cause great concern for the future. The pandemic has exposed a systemic failure in the regulation of shipping that must be addressed to avoid similar disruptive events in the future.

As for the issue of fatigue at sea, it is worth mentioning that working beyond 48 hours per week has proven to have detrimental effects on workers' safety, health, and work-family relationships. However, under the current legislative standards, seafarers are still legally allowed to work for 14 hours during any 24-hour period or 72 hours in any seven-day period.

Moreover, despite the incredibly long hours still permitted by international regulations, the recording of rest hours is becoming a mere 'paper exercise', with seafarers regularly required to work beyond the maximum limits. The adjustment of rest and work hours records, along with the systematic verification of these records to ensure their accuracy, is a pressing need.

❹ **In recent years, many industries have increasingly begun to consider the mental health of employees. In your experience, has the European shipping industry taken any active steps towards promoting mental health support and combating bullying and harassment in the shipping industry?**

Today, seafarers face intense pressure and grapple daily with issues that have a massive impact on their mental and physical health and quality of life onboard a ship. Seafarers are among the occupational groups with the highest stress risk. During the pandemic, many seafarers' calls to helplines were about burnout and suicide attempts.

The shipping industry's social partners did a lot of work through joint projects, such as WESS and Skillsea, as well as joint initiatives. Nevertheless, the existence of some best practices and recommendations is not enough. We need binding legislation to address those issues.

Seafarers are often praised for their resilience, but when it is tested too often and for too long, mental health issues arise. The deterioration of mental well-being can lead to burnout and, consequently, a desire to seek alternative careers offering better work-life balance.

Unfortunately, seafarers continue to face numerous risks associated with their profession. Instances of piracy and accidents at sea pose genuine concerns for their well-being. Fear for personal safety, coupled with a lack of proper support systems, can influence their decision to give up the seafaring profession.

The post-pandemic war in Ukraine exacerbated the crew change crisis and increased the risks for seafarers working onboard ships sailing in the Black Sea. At present, we are witnessing the Red Sea crisis together with a closely related increase in opportunistic attacks by Somali pirates. This feeling of sailing into the unknown can lead to anxiety and exhaustion even amongst the most experienced seafarers, further impacting their already deteriorating mental health and the quality of their lives on board.

❺ **During the previous months, the ETF campaigned for the introduction of a Manifesto for "A New Deal for Fair Transport". What has been the reaction of the European community towards your efforts ahead of the 2024 European Elections?**

Leading up to the EU elections in June, we are organising a series of interventions, events, panel debates, webinars, and workplace visits. Our goal is to offer politicians, union members, and transport workers the opportunity to discuss and brainstorm solutions to pressing issues. Additionally, we aim to give politicians an inside view of the daily operations and challenges of seafarers and to allow transport workers to interact directly with politicians.

We are being well-received by political groups at the EU Parliament and national political parties that are now starting their campaign efforts for the EU elections. We are calling on candidates, political parties, and citizens to join us in making transport workers a central focus of EU policies. We are not merely advocating for change; we are actively engaging with policymakers, candidates, and the public to ensure our voices are heard and to bring transport and its workers to the forefront of the debate not only during the elections but for the years to come.

6 **How can the shipping industry better prepare for the mounting tensions on the global geopolitical landscape? In view of the ongoing Russia-Ukraine conflict and the recent developments in the Red Sea, has the industry shown progress and adaptability in ensuring the safety of seafarers?**

The ETF, in a joint statement with our social partner, the European Community Shipowners' Association (ECSA), has expressed deep concerns over the ongoing attacks on commercial vessels in the Red Sea and the Gulf of Aden.

Even though the industry has demonstrated some progress and adaptability, and major shipping companies have diverted their ships through the Cape of Good Hope, many vessels are still transiting the area. The situation continues to escalate, and the absence of any lives lost or serious injuries so far is a mere coincidence and only a matter of luck.

Shipping companies must continue to reroute their ships until it is safe to travel the Red Sea. However, it is essential to acknowledge that this rerouting translates into additional days onboard on an already long journey for seafarers.

The primary concern of many people in the industry revolves around supply chain disruptions, skyrocketing shipping prices and insurance coverage, and the impact of all this on the economy. Of course, these are all severe consequences, but they are only secondary commercial considerations compared to the considerable risk posed to the safety of seafarers.

Seafarers are the beating heart of the shipping industry, and their ability to perform their duties without fear for their safety is essential. The ETF calls on all National and International Authorities to assume their responsibilities and take a stand on the rights and protection of seafarers in the Red Sea.

It was of fundamental importance that the IBF Warlike Operations Area Committee redefined the list of all the relevant warlike and high-risk areas, granting seafarers the right to decline an assignment in a warlike operation area without risking losing their employment or suffering any other detrimental effects, to refuse to proceed through the Red Sea, and be entitled to repatriation at the company's cost.

While establishing a separate EU military operation to protect shipping in the area is a positive step towards addressing the security challenges, military operations are not expected to stop the Houthis from launching attacks in the short term. Addressing the emerging crisis requires a holistic approach to security in the region, providing a solution that guarantees the safety of shipping in the area in the long term. More concerted efforts are necessary to address the root causes of the crisis, including coordinated efforts and diplomatic initiatives that will contribute to maintaining the freedom of navigation.

THE VALUE OF HUMAN PERFORMANCE DATA

LINKING PSYCHOLOGICAL SAFETY WITH VETTING PERFORMANCE

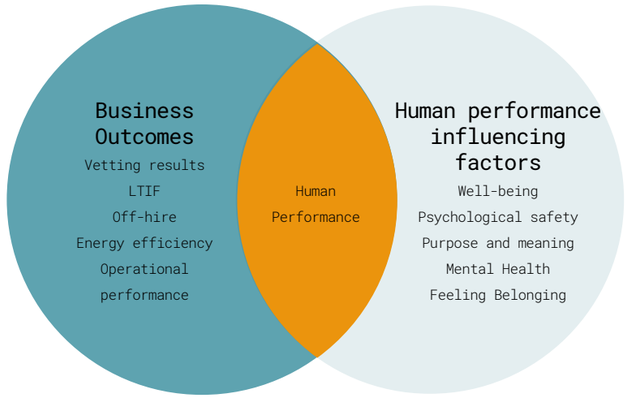
by **Erik Green,**
Managing Director and Partner
at Green-Jakobsen A/S

Research shows that several factors, including leadership, knowledge-sharing, employee well-being and other, have an impact on human performance during work. Among others, Ramlall (2008) found positive relationships among typical measures of positive psychology, positive organisational behaviour, and employee performance. The practical application of such insights has a great value in organisational level.

By collecting and analysing human performance-related data, organisations can gain valuable insights into tracking human performance outcomes and understanding their underlying drivers, expanding their evaluation beyond mere employee productivity, and fostering authentic and realistic human performance evaluations.

This ensures an optimal partnership between business outcomes and human performance influencing factors.

Business outcomes define the quality, value, or result of work, and how it creates value for the organisation, whereas human performance influencing factors determine the degree to which an humans will perform effectively and the likelihood of error.



Psychological safety influences vetting performance

To better understand how human performance data can be used in practice, let's put the focus on psychological safety—one of the key performance influencing factors.

Psychological safety is a shared belief within a team that every member is free to express ideas, voice concerns, ask questions, and report, as well as admit mistakes without fear of facing negative consequences. Psychological safety simply describes the level of open and trusting work atmosphere.

There are multiple benefits to creating a high level of psychological safety among the crew onboard:

1. It fosters crew's engagement and motivation, as the crew feel their contributions are valued and they speak up without fear of retribution.
2. Psychological safety can enhance decision-making by encouraging the crew to voice their opinions and concerns, resulting in a more diverse range of perspectives being considered.
3. Psychological safety can cultivate a culture of continuous learning and improvement, as the crew feel comfortable sharing their mistakes and learning from them.

Utilising Green-Jakobsen's Safety Delta performance data bank, which contains over 50.000 crew responses representing the seafarer population of 13 tanker and dry bulk shipping companies managing over 360 vessels, shows that there is a correlation between psychological safety and operational performance, particularly evident in vetting outcomes.

Taking the example of one tanker company with 47 vessels, an analysis of its 2022 data showed that having low levels of psychological safety can lead to poorer vetting performance.

After evaluating the level of psychological safety among the fleet of this tanker company, it was found that almost all vessels exhibited relatively high levels of psychological safety, with little variation among them. Only four vessels were lagging behind. Interestingly, these four vessels also demonstrated the worst vetting performance during the same time period (with 10 to 8 deficiencies each).

Seen from a psychological safety standpoint, crew members who feel less safe to express themselves, speak up, and intervene, can have a significant impact on vetting performance in several ways. Here are a few of them:

- **Poor risk management**
  They are less likely to identify and address potential risks proactively, increasing the likelihood of deficiencies during vetting, and setting themselves and the vessel at risk during vessel operations.
- **Communication breakdown**
  They may withhold vital information or hesitate to communicate concerns even if they notice potential issues or have valuable insights to contribute; this results to failing to address potential issues or implement necessary changes before vetting inspections and prior vessel operations.
- **Resistance to learning and improvement**
  They may be resistant to feedback or suggestions for improvement, fearing criticism or punishment. This resistance can impede the crew's ability to learn from past experiences or incorporate lessons learned into their day-to-day jobs on board.

In conclusion, crew members who feel psychologically safe are more likely to communicate openly, collaborate effectively, and perform better, ultimately contributing to better vetting performance; consequently to safer work practice during vessel operations.

As demonstrated in this article, human performance data mined within an organisation is a treasure trove of insights waiting to be discovered. By analysing patterns and trends in this data, valuable insights can be picked up to drive improvements and enhance overall performance at a company level.

If you want to hear more about how data on human performance can help in taking better decisions, visit us on 5 June at the Posidonia International Exhibition, Athens (Seminar Room 2A). Reserve your seat at: m.progoulaki@green-jakobsen.com.

References:
Ramlall, S. (2008). Enhancing employee performance through positive organisational behavior. Journal of Applied Social Psychology. 38(6): 1580-1600.

On the occasion of the recent launch of the Golden Safety Rules, Dr Henderson emphasises the significance of developing a robust safety culture within shipping, which can act as a pillar of sustainability.

THE TRIPPLE WIN: SAFETY, DECARBONISATION, AND SUSTAINABILITY

by **Dr Grahaeme Won OBE FREng**,
Chair of Together in Safety

Leading and managing a shipping company is becoming increasingly complex and is subjected to closer scrutiny from all quarters. Conferences and gatherings such as Posidonia, as well as the media, are currently paying a lot of attention to decarbonisation and sustainability. As a result, the enormous significance of safety in our industry is often either overlooked or pushed down in the industry's agenda due to several factors. One key reason for this is that the pivotal role of safety in a company's daily operations and its close correlation to people, who are central to everything we do, is not fully appreciated.

With Together in Safety as their Virtual Safety Partner, which provides proven best practices and the recently launched Golden Safety Rules, companies can easily access ready-made programmes that will improve safety and overall business performance.

Showing commitment to safety will not only motivate and inspire employees but also benefit the decarbonisation and sustainability processes. Safety is therefore essential to the "Triple Win".

Implementing the proper safety programme is fundamental to the future success of any shipping company. An excellent safety performance attracts high-quality talent and develops a mindset of learning from each other to deliver solutions to the numerous challenges we face. The successful decarbonisation of shipping will be impossible without a relentless focus on safety.

Moreover, a strong safety performance also energises and motivates staff to perform well and increases trust from the very top of the company to the seafarers on the ship while building an impactful reputation for the company and encouraging a positive approach to everyday work.

The Together in Safety Coalition is a unique non-regulatory consortium with representation from across the entire shipping industry working as one united team, which includes shipowners and operators, industry organisations, and many supporting entities, from P&I insurance companies and classification societies to service providers. From the largest to the smallest, all these groups have a significant role to play in Together in Safety.

The Golden Safety Rules were developed following a detailed root-cause analysis of incidents that resulted in serious or fatal seafarer injuries, large-scale asset damage, and extensive environmental pollution. These rules build on earlier work by Together in Safety that identified the key strategic drivers of Leadership, Incident Prevention, and Wellbeing & Care.

Regarding Incident Prevention, the majority of serious incidents in shipping are caused by just 14 major incident types, including, among others, collisions, groundings, engine room fires, mooring operations, enclosed space entry, containers lost overboard, and working in heavy weather. It is important to note that such incidents are not accidents but rather repeat events that could and should have been avoided. If we can address these incidents effectively, a dramatic improvement will be made in safety performance.

Together in Safety already provides the shipping industry with best practices for each of the 14 major incident types. Shipping companies do not need to employ expensive consultants or develop costly learning material, as these are all freely available for everyone to use on the Together in Safety website.

A straightforward 'Safer in 3 Steps' guide is also available to facilitate the development and implementation of any shipping company's safety programme. The steps involve assessing the situation, taking action by using the Together in Safety resources, and, finally, measuring progress. In essence, Together in Safety is the one-stop shop 'Virtual Safety Partner' for every shipping company.

Together in Safety, complemented by the Golden Safety Rules, offers the

global shipping industry everything it needs to make a remarkable improvement in safety performance. The Golden Safety Rules target specific behaviours and risk factors that contribute to common incident types. If implemented, these rules can significantly impact safety outcomes. The thinking behind the Golden Safety Rules can be traced to the oil and gas industry and the equivalent Life-Saving Rules by the International Association of Oil & Gas Producers (IOGP), which have had a major impact on the industry, underscoring the effectiveness of such initiatives.

Together in Safety has gone to great lengths to ensure the Golden Safety Rules are clear, concise, accessible, and practical without causing excessive bureaucracy or additional workload for seafarers. They are designed to be applied alongside existing management systems and procedures and are applicable to everyone on a ship.

However, the Golden Safety Rules are only as good as their implementation. Posters and websites showing the Rules are helpful, but further steps must be taken to achieve understanding and ensure their application. They must be introduced from the very top of the company (i.e., the owner or CEO) and be consistently put into practice by everyone in the organisation if they are to prevent injuries and save lives. Execution is everything.

By informing everyone in shipping about the Golden Safety Rules and making them aware of their benefits, it is hoped that all shipping industry segments will welcome them and embrace them with open arms. After all, no one wants a major shipping incident that results in fatalities and injuries, high costs, delays, and reputational damage for all parties involved. In addition, safety is increasingly being factored into business decisions, and companies prefer to work with organisations that have a strong safety record, as it benefits their overall operational performance and results.

A strong safety performance does not translate into increased costs or higher expenses; in fact, the opposite is true. Crucial to ensuring that an empowering safety culture prevails is that senior management demonstrates visible leadership, thus setting the right tone for everyone else. That entails initiating conversations focused on safety and leaders connecting with those doing the day-to-day work in order to understand their realities and challenges and build trust. Although difficult and time-consuming, it is vital for everyone to feel comfortable enough to speak up and to use incidents as learning opportunities.

Improving safety performance will benefit every aspect of shipping, and, in particular, it will help deliver the decarbonisation and sustainability agendas. Safety is a vital component of the ‘Triple Win’!

WATERBORNE PASSENGER TRANSPORT IS AT THE CORE OF THE TRANSPORT RESEARCH ARENA 2024

by **Jaap Gebraad**,
Secretary General at Waterborne TP

The Transport Research Arena (TRA) is the largest European research and technology conference, covering all transport modes and aspects of mobility. TRA is organised by the European Commission Services, i.e. DG RTD and DG MOVE, and the hosting country every two years. European Technology Platforms, like the Waterborne Technology Platform (TP), play a crucial role in the event's organisation. Specifically, the Waterborne TP is a member of the TRA's Management, Programme, and Organisational Committees.

The Waterborne TP is the European research and innovation platform for the waterborne industries, providing policy guidance to the European institutions regarding research, development, and innovation, along with their deployment. Furthermore, the Waterborne TP coordinates the private side of the Partnership on Zero-Emission Waterborne Transport (ZEWT) with the European Commission. Currently representing 124 members from 20 European Member States and four other European Countries, the Waterborne TP has a significant impact on the European Union.

TRA offers a great venue for researchers, policymakers, and industry representatives to get together and contribute to the discussion on how research and innovation can reshape the transport and mobility system. The conference is also a unique opportunity to hear about mobility trends in different parts of Europe, learn from achievements in the industry, and share policy and deployment best practices.

The TRA 2024 conference took place from 15-18 April 2024 in Dublin, Ireland, and was centred around "Transport Transitions: Advancing Sustainable and Inclusive Mobility".

The conference kicked off with the theme "Safe and Inclusive Transport", including the participation of a European ferry operator in the high-level panel of the day. The significance of waterborne passenger transport and the sector's efforts towards safety and inclusiveness were among the panel's main topics. Later in the day, the European Community Shipowners' Association (ECSA) participated in a debate on "Future Workforce and Skills", highlighting the need to re-train and upskill the sector's current and future employees, while highlighting the green and digital transitions' positive impact on the sector in terms of attracting new workforce.

The second day of the TRA focused on the "Sustainable Mobility of People and Goods", and Manolis Koutoulakis, Secretary General of the Aegean and Island Policy at the Ministry of Maritime Affairs and Insular Policy, participated in the high-level debate about the day's theme. Mr Koutoulakis emphasised the essential role of partnerships and cooperation within the waterborne ecosystem including civil society, the need for economically viable technological solutions, as well as the need to ensure a holistic approach. Finally, he stressed the central role of financing instruments in the transition.

On the same day, two more relevant sessions took place. The first one, "Waterborne Passenger Transport – an Essential Transport Mode in Outer Regions", saw the participation of a shipyard, a marine equipment manufacturer, and Waterborne TP's coordinator, Maria Boile. Mrs Boile emphasised the crucial role of waterborne transport in an insular context, and different possible solutions to transform it into a zero-emission mode of transport were discussed. Furthermore, the participants highlighted the critical role of SMEs and their need for guidance and support in the transition.

This panel seamlessly transitioned into a session on "Ports as Energy Hubs", highlighting ports' distinct role in the transition to zero-emission waterborne transport. During this panel, Mr Sotirios Theofanis highlighted the challenges and opportunities arising for ports as they embrace this new role, particularly within the Greek context.

The numerous different sessions held throughout the week and the exchanges taking place in Waterborne TP's stand, which served as the waterborne community's home base for the week, yielded a few common messages:

- The waterborne transport ecosystem is committed to transforming into a zero-emission, competitive mode of transport.
- Waterborne transport is a diversified sector requiring diverse solutions.
- SMEs are at the sector's core and guidance and support must be provided to them as they navigate the transition.
- Partnerships and cooperation within the waterborne ecosystem, including civil society, are of vital significance.

The next edition of the Transport Research Arena is scheduled for 18-21 May 2026 in Budapest. However, exchanges on jointly developing solutions will keep taking place. The Waterborne Technology Platform will be present during the industry's next major event, the Posidonia Exhibition 2024, looking forward to exchanging views with the Greek waterborne transport ecosystem.

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AFTER-SALES SUPPORT FOR MARINE EQUIPMENT

BEST PRACTICES, LESSONS LEARNT, AND FUTURE PROSPECTS

Edited by: Giannis Theodoropoulos & Charis Pappas

Lately, members of the Greek shipping community have been particularly concerned about the availability of spare parts necessary for a ship's operation and the availability of service engineers in large shipping hubs. The specific challenge is that, as onboard equipment evolves technologically, the probability of incidents increases, putting large-scale investments at risk. On the other hand, makers are attempting to improve the services they provide to this highly demanding industry. In this context, Naftika Chronika hosts the views of both technical managers and makers' representatives on this issue in the following pages, hoping to become a bridge of communication between the two sides.

One major challenge that ship management faces today is the lack of proper support by makers. The majority of machinery and marine equipment makers, including the well-established ones, struggle to offer adequate after-sales support for their products.

MAKERS' AFTER-SALES SUPPORT IS VITAL FOR SHIPPING COMPANIES

by **Panos Kourkountis**,
Chairman of MARTECMA
and Technical Director at Sea Traders SA.

The primary issue revolves around the availability of spare parts and service engineers. Any minor technical problem escalates into a major one when spare parts or service engineers are not available to rectify it. Very often, requests for service engineer attendance, even in major hubs such as Singapore or Rotterdam, cannot be fulfilled.

Spare parts that are considered critical for the vessel's operation or essential for routine periodic maintenance are ordered well in advance, and ships typically carry an adequate stock onboard. However, delivery times can take months in the event of an incident or unusual or accelerated wear and tear that requires an urgent supply of the usual spare parts.

Moreover, the availability of parts not required in routine maintenance is virtually nonexistent. While this unavailability of genuine spares was the norm for ships older than 15 years, it is now also experienced for equipment installed on much newer ships.

Recently, a MARTECMA member reported that just four months after delivery from the yard, a ship experienced a failure of its windlass motor. Although the equipment is still under guarantee and the maker has agreed to supply the new motor at their expense, the spare will not be available for another six months. For a tanker, this kind of damage puts the vessel out of service, as no oil major is willing to charter a ship with such a defect and Class condition.

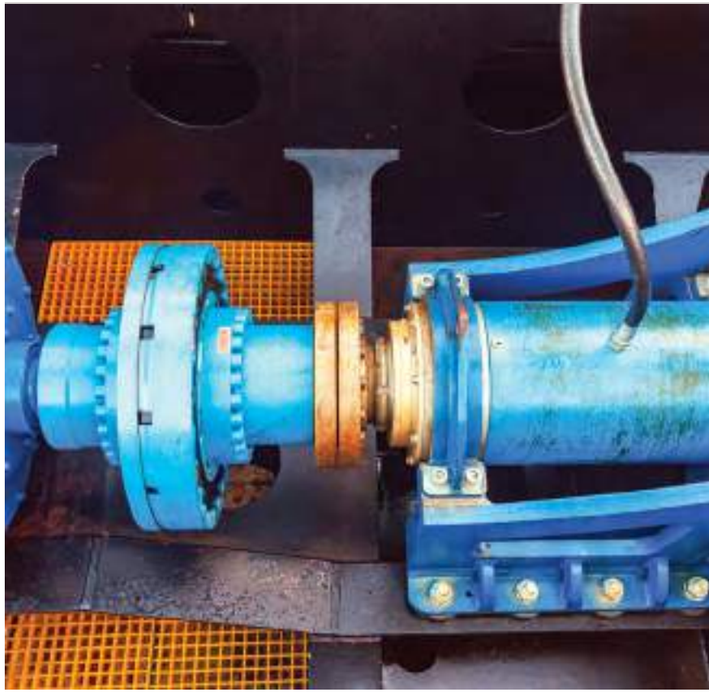
A significant challenge worth mentioning is that, as new marine equipment increasingly relies on new technologies and electronic systems, it becomes more vulnerable than ever before. A single virus or bug can disrupt the entire system, necessitating the intervention of a specialist on board to erase the infected or defective programme and reinstall an updated version. In certain instances, a ship has to wait for days until a service engineer is available to attend to the vessel and correct a software malfunction. Additionally, until recently, the industry had no performance standards for marine equipment software. In fact, the software used for controlling a marine boiler was similar to that used for the control of a home appliance.

We have now reached a point where makers' efforts to rapidly develop their systems to increase their competitiveness have led to a scarcity of proper after-sales services. Support for their previous models is very low on their list of commercial priorities.

Moreover, makers do not manufacture all their machine components themselves. They often rely on suppliers that are not reliable and do not understand the importance and urgency of rectifying marine equipment malfunctions.

The problem has become more pronounced in recent years, with many makers declaring a change in their policy, stating that previous models are obsolete, and proposing the complete replacement of units with new models.

Some of this equipment is critical for the operation of a ship. For instance, makers' main engine control systems become obsolete after just 8 or 10 years from their installation. The cost of the control system's new model ranges from $25,000 to $30,000, and its delivery takes four to five months. In addition, cables must be replaced, a service engineer needs to attend, and a Class plan approval and new sea trials are required. In the best-case scenario, when the replacement is organised in advance as a precaution prior to the malfunction of the existing system, the total cost, including fuel and off-hire for sea trials, exceeds $140,000-$150,000.



MARTECMA receives complaints about makers' after-sales services from several members, and the topic is discussed at every regular meeting. We have gathered feedback and examined the existing regulations; it is indeed a rather complex issue. The EU regulation requires that the certification of marine equipment as per European standards be on board and valid for a minimum of ten years after installation. However, this requirement is not universally interpreted as mandating that the maker cannot declare the equipment obsolete within that period. Instead, the obligation of makers to provide or not provide spare parts and service engineer support is considered a commercial issue.

I believe the severity of the matter has not been fully realised. Despite the best efforts of ship managers, obsolete systems may be impossible to maintain to proper standards, which is not a purely financial issue but also a safety concern.

Very few makers are willing to offer a fixed yearly maintenance contract that includes equipment replacement when it becomes obsolete. This is rarely proposed and very expensive. Some owners have managed to obtain a written guarantee from makers during newbuilding project negotiations, ensuring that their equipment will be supported for at least a minimum period of 15 years. However, soon after delivery, when the time for after-sales service came, some makers came up with excuses, such as the closure of the subcontractor's factory and component unavailability in the market.

The issue of after-sales support is magnified as well-established makers have increased their market share, leaving few alternative options.

With the application of new technologies, it is vital that makers invest in after-sales services to tackle the expected teething problems. The only way forward is to hire and train service engineers, design different models that use the same parts, and create an optimum number of parts in stock. Owners and ship managers should also consider the advantages of fleets with sister ships and a stock of parts that can be used across multiple ships. However, introducing these changes will take a long time.

Until after-sales service improves, there are daily challenges that impose a tremendous burden on companies. Managing ships at risk of being out of the market due to a lack of spares and support or trying to keep them running until the necessary spare parts become available poses financial, safety, and environmental risks.

Optimising spare parts purchase management and inventory maintenance practices requires a multifaceted approach encompassing regulatory compliance, vendor and technical department engagement, and long-term planning.

PROPER SPARE PARTS INVENTORIES AND MANAGEMENT MAY CONSIDERABLY REDUCE THE IMMOBILISING OF CRITICAL EQUIPMENT

by **Stavros Hatzigrigoris**,
Advanced Engineering Services
& Zodiac Maritime

By adopting proactive strategies, shipping companies can enhance operational efficiency, mitigate risks, reduce costs, and ensure the reliability of maritime equipment.

Balancing Class Requirements and Vendor Standards

Normally, newbuilding specifications dictate the provision of spare parts in accordance with Class requirements. However, this immediately leads to ambiguity as Class Societies offer recommendations rather than strict requirements. At the same time, some yards refer to vendors' standards without providing a list of what these standards are. The provision of spare parts is negotiated between yards and vendors when the supply contracts between the two parties are being discussed.

Reliance on vendor standards - as often proposed by shipyards - cannot be absolute, as their standards are frequently low and easily bent. Many vendors' project guides state that the supply of spare parts is optional. A more robust clause can be proposed to address this issue at the specification discussion stage, mandating spare parts as per Class and IACS recommendations or makers' standards, whichever is higher.

IACS Unified Requirements and Critical Parts

The IACS Unified Requirements were drafted in the 90s and remained unchanged until November 2023. MARTECMA and its members exerted considerable pressure on the IACS in 2022 and 2023 to proceed with a revision of its recommendations. Despite the incorporation of risk assessment methodologies in the IACS URs in 2023, the status of the recommendations remains unchanged as they are still nothing more than recommendations.

Recent updates to the IACS URs oblige equipment suppliers to participate with classification societies in a risk assessment or an FMEA or similar assessment and provide a list of critical parts that should be available onboard prior to the delivery of ships. When reading the generic list of parts included in the IACS UR no 26, one will see that new part categories, such as parts for the auxiliary blowers and the control, alarm, and monitoring systems, have now been included.

If one looks at item 16 of the table listing the "Typical minimum recommended spare parts for conventionally fueled main internal combustion engines of ships for unrestricted service" of the IACS Rec. 1990/Rev. 2 2023, one will see that control, alarm, and safety system manufacturers are now required to supply critical parts, but my MARTECMA colleagues have so far overlooked this.

As stated in its "Safety Critical Equipment and Spare Parts Guidance" (2018), the OCIMF also considers safety-critical equipment and the use of safety-critical spare parts of crucial importance and that it should be part of a technical manager's risk assessment plan designed to identify potential exposure to hazards and to reduce operational risks related to Health, Safety, Security, and the Environment (HSSE). In the paper mentioned above, the OCIMF provides guidance on the challenges that may be encountered when considering safety-critical spare parts.

Type Approvals and Critical Parts Inclusion

The Type Approval Certification procedure plays a crucial role in ensuring the quality and reliability of maritime equipment. I believe that when a piece of equipment is type-approved by the Class, a list of critical parts should be included in the Type Approval document. This is now accepted by the IACS URs.

Pre-Contract and Post-Contract Negotiations

As already mentioned, pre-contract negotiations often involve selecting vendors and agreeing on the provision of equipment, including spare parts guarantees. A list of two to three vendors is proposed for a number of items (usually around 50) and is signed by the builders and the buyers. The standard warranty for delivered ships, which

Efficient spare parts management involves strategic planning and coordination. Grouping orders of maintenance parts per ship, certain period, or specific machinery can optimise the procurement process.

is a crucial aspect of the contract, is only 12 months (or 24 for LNG ships). This relatively short period can be problematic for the buyers, as standard warranties do not make provisions for the supply of spare parts beyond the equipment's lifetime. In good buyers' market periods, a few of the contracts I have seen include clauses stipulating that the builders are only responsible for providing guaranteed after-sales service and spare parts for the equipment for a maximum period of 10 years from delivery.

Post-contract, builders usually propose one vendor. Buyers may negotiate with other vendors for their preferred alternatives, albeit with potential additional costs, if a different vendor than the one recommended is selected. Further negotiations can yield benefits such as the elimination of price differences between the yard-proposed vendor and the one chosen by the buyer, as well as cash, extended warranties, a spare parts credit line, free training, equipment upgrades, discounted prices after the delivery of the ship, and other benefits. Very few vendors are willing to provide tariffs for the equipment parts that the vessel will need after the delivery.

Streamlining Spare Parts Management

Efficient spare parts management involves strategic planning and coordination. A few owners prepare lists of critical parts to be supplied prior to the delivery of the ships. At the same time, grouping orders of maintenance parts per ship, certain period, or specific machinery can optimise the procurement process. Expensive parts with long delivery times, such as propellers, heavy castings, etc., can be stored ashore until needed. Ordering critical parts for a series of ships and keeping them in a depository may also be considered.

Upgrades

If engine room watches are necessary due to equipment failure, there is a strong possibility that the engine crew will not be sufficient to operate the ship as per the MLC requirements for a prolonged period of time.

Replacing or upgrading ship equipment at an early stage may sound peculiar; nevertheless, it may be considered advisable, especially in cases where the new equipment, being more efficient and user-friendly, would provide remote troubleshooting functionality, better monitoring standards, and other benefits. A good example of this is the replacement of magnetron radars with solid-state radars, given that the performance of magnetrons is unpredictable, and they would generally need replacement in less than two years.

Based on current hardware developments, I believe replacements/upgrades can offer advantages, but they should be discussed with vendors at an early stage. The same applies to part replacements or repairs on land, which should also be discussed with vendors or specialised workshops.

Maintaining Stocks

Knowing what spare parts are in stock on board is of utmost importance. Maintaining a proper inventory may save money and time when it comes to the immediate repair of faulty machinery and equipment and the delivery of critical parts from the vendors. I have recently heard of delivery times approaching one year for cryogenic equipment. No spare part onboard should be consumed without being entered in the ship's PMS and without reporting the remaining onboard (ROB) parts. Parts that may be reconditioned ashore should also be logged. Most available PMS/Procurement software can be utilised to create requisitions and update spare parts inventories. The use of barcoding systems should also be considered. If the reporting from ships is inaccurate, the inventories will also soon be inaccurate.

Following complaints from MARTECMA members that many makers, especially of electronic equipment, do not offer after-sales support for a reasonable period of time, a representative of a leading electronic equipment and automation maker was invited to MARTECMA's monthly meeting to make a presentation and explain their company's policy.

A REGULATORY FRAMEWORK MUST BE ESTABLISHED FOR AFTER-SALES SUPPORT

by **Panos Zachariadis**
Technical Director of
Atlantic Bulk Carriers Management Ltd

During the presentation, it was pointed out that the equipment manufactured and installed by the maker on newly built ships has a lifetime of 10-12 years. Beyond that time, the equipment is not usually supported, mainly due to a lack of spare parts (which are typically manufactured by the makers themselves, not subcontractors). This fact, however, cannot and should not be accepted by shipowners. The IMO's Goal Based Standards regulation specifies that ships (bulk carriers and tankers) must be designed and constructed for a specified design life of no less than 25 years. Unfortunately, the regulation only applies to the ship's structural parts and not to its equipment. On top of that, classification societies do not have any relevant regulations concerning equipment suppliers or essential spare parts that should be provided to newbuildings.

However, this is not the only issue. In reality, ship operators usually have a problem with support provision a lot earlier than 10-12 years following the vessel's delivery. In several cases, equipment or systems are not supported by the makers even within one or two years post-delivery. This usually happens when a ship is constructed during the period of a model change by the maker. Essentially, the ship is equipped with a system that the maker has already been supplying for a decade and is now being changed or upgraded, rendering it obsolete.

The representative informed us that the amount of time before the maker becomes aware of an impending upgrade is a few years! Of course, this information is not disclosed, resulting in the delivery of products that are soon to be withdrawn.

This situation is unacceptable and must be addressed with relevant legislation. Systems installed on newbuildings must be supported by their makers for at least ten years after a vessel's delivery, both in terms of availability of spare parts and with a sufficient number of specialists and technicians. Until this becomes a reality, I advocate a system wherein shipowners and shipyards are promptly and transparently notified by the manufacturer of any upcoming upgrades or model changes. If the newer equipment is already in production, stakeholders should be given the option to install it, even with an additional cost. Moreover, in any case, makers should proactively recommend spare parts that, in their experience, break down more frequently, so that shipowners can buy and keep them in stock for future use since they will soon be out of production.

In today’s business environment, after-sales service is a crucial aspect of a customer’s buying journey, which, if not appropriately addressed by the supplier, may lead to customer complaints and, subsequently, damage to the company’s reputation.

THREE AFTER-SALES SERVICES FOR EXTENDING A SHIP’S LIFETIME

by **Giannis Christopoulos**,
GM Sales Greece & Cyprus,
Managing Director at Wärtsilä Greece

In fact, while making new business deals may be challenging, maintaining existing business and keeping your customers satisfied can very often be far more challenging.
As Wärtsilä understands this complex and challenging business environment, one of our key strategic business priorities is to consider how we can continuously improve our end-to-end business to meet customer expectations on quality, delivery time, and delivery accuracy while simultaneously reducing complexity and enhancing competitiveness. To achieve this, we offer a number of after-sales services aimed at supporting our customers.

Three examples include:

Mechanical

Starting from a mechanical point of view, we have set up three age phases for our engines.
The first phase (the so-called “Engine builder” phase) takes place during the first 25 years of a new product. During this phase, all production parts are available, the service is fully guaranteed, and upgrades and constant technical development are in progress.
The next phase (the “Silver” phase) keeps the engines running, with new and reconditioned parts available for optimal life-cycle support. Guaranteed service is still possible at this stage. Although upgrades are not a priority during these 15 years, package upgrades are still possible, with a definite return on investment.
In the last phase (the “Bronze” phase), we continue to support the engines for another 15 years, focusing on routine maintenance parts while all spare parts for major repairs are still available. In the event that other systems become obsolete, a working group of experienced users may be established to continue serving our classic engines.
Throughout these three phases, customers are notified well in advance through regular Technical Bulletins about the upcoming scarcity and obsolescence of parts.
So, for 50+ years, which is more than twice the lifetime span of a vessel, our customers can rest assured that they will have the support they need to keep their assets going.

Life-cycle Agreements

It is also essential to recognise that modern engines are not just mechanical parts. In fact, electronics and automation systems play a crucial role in the functionality of an engine. For these parts, Wärtsilä works closely with suppliers; however, even though we take great care to keep producing them for as long as the engines are running, this is not always possible due to other factors beyond our sphere of influence, such as shortages of raw materials or raw materials that fail our quality control, interruptions in the delivery chain due to geopolitical developments, etc.
Apart from mechanical and electronic parts support, our advanced products and solutions require advanced support from our side. Wärtsilä offers what we call our Life-cycle Agreements, which are tailor-made performance and maintenance agreements to meet customers’ needs for their vessels. These agreements utilise artificial intelligence systems to proactively identify and highlight potential failures and early indications of equipment deterioration that cause vessels to run less efficiently. These agreements can also provide remote and rapid 24/7 operational support when needed. The experts in the Wärtsilä Expertise Centres are available to support crews remotely when required, giving guidance, advice, recommendations, and tuning. Cyber-secure connectivity also makes it possible to collaborate remotely in real time.
Getting the issues resolved quickly maximises the vessel’s uptime, ensuring smooth operations. In this way, operators can ensure that maintenance costs are kept within budget.

Crew Training

Crew training is also crucial to our customers. Wärstilä’s Land and Sea Academy offers proper training to end users of our products. Moreover, tailor-made training may be provided to cover customers’ specific needs and boost crews’ skills and knowledge. In addition, the modular design of our products facilitates the learning process and makes crews’ lives easier.
Ultimately, the importance of an after-sales service has many different aspects to consider. For example, regardless of how Wärtsilä or any other OEM strives to continuously support its customers, engines or other products may face unscheduled downtime. One reason for this may be the purchase of non-OEM parts. Although, in some cases, these parts may be offered at a reduced acquisition cost, they may ultimately end up costing the buyer more in the long term due to premature wear or deterioration or due to non-compliance with emissions regulations. At the end of the day, it always takes two to tango. Both parties - suppliers and customers - have an equal part to play in the responsibility of keeping a vessel running in good condition. Investing in original OEM parts and services gives owners a better chance of prolonging the lifetime of a vessel and ensuring the optimal performance of the said vessel.

At ERMA FIRST, after-sales customer support is any type of support provided to customers after purchasing a product. Upon completing the transaction, the customer and maker enter a ‘partnership’ spanning the entire lifetime of the vessel.

ERMA FIRST’S AFTER-SALES SUPPORT GOES BEYOND ADDRESSING SPARE PARTS AND SERVICE REQUESTS

by **Panagiotis Dalianis**,
Technical After Sales Director
at ERMA FIRST

Marine equipment makers are fully aware that what drives their clients’ specific requirements is the nature of their business. The complexity of vessel operations makes the provision of support more difficult than in other industries, especially when the equipment must also comply with environmental regulations, as is the case with ballast water treatment systems (BWTS).

Providing services to a ship at sea demands round-the-clock live support, readily available spare parts, and experienced engineers stationed in strategic locations so that travelling, idle time, and expenses are minimised.

As a global leader in BWTS, with systems installed on more than 3,500 vessels, ERMA FIRST has established a highly efficient and effective customer support network. We have achieved this while navigating the extraordinary challenges that have arisen worldwide in recent years, such as the COVID-19 pandemic and China’s border restrictions, the Russia-Ukraine conflict, and, more recently, the Israel-Palestine conflict and the subsequent attacks on commercial vessels in the Red Sea.

Each challenge has required proactive measures to ensure robust support for our systems on board vessels. To overcome travel restrictions during the pandemic, we established service stations worldwide, enabling us to deliver and commission our systems irrespective of the installation’s location. Our service stations have also allowed us to attend vessels and provide troubleshooting and maintenance services upon commissioning.

We are currently operating service stations with experienced engineers in: China: Shanghai, Zhoushan, Dalian, Guangzhou; Korea: Busan; Vietnam: Hai Phong; Singapore; India: Mumbai; Japan: Osaka; UAE: Dubai; Türkiye: Istanbul; Greece: Piraeus; Italy: Naples; France: Marseille; the Netherlands: Rotterdam; Germany: Hamburg; Poland: Gdansk; Latvia: Jelgava; USA: New York; Canada: Vancouver; and Panama. From these stations, our engineers can reach every location where our clients may require service or maintenance.

Our next step towards enhancing our service provision involves strengthening our local teams in hotspots such as the Amsterdam–Rotterdam–Antwerp area. While finding experienced personnel in Northern Europe can be challenging, we are actively trying to find solutions.

Another challenge we had to overcome was the scarcity of certain parts due to supply chain disruptions during -but mainly after- the pandemic. At the time, we experienced unexpected delays in production and delivery, especially with electronic parts, leading to frustration among some clients. We have since established new channels to source parts and now keep them in stock. While occasional delays may still occur, they seldom disrupt the system’s operability.

Delivery time can also be affected by the location where spare parts are stored, which is why we have created stocking points worldwide, reducing delivery time but also helping our local service teams access the most commonly required spare parts, wearables, and consumables used during attendances. Aside from our central warehouse in Greece, we have established stocking points in Shanghai, Busan, Singapore, Dubai, Istanbul, Rotterdam, Copenhagen, New York, Vancouver, and Panama.

In addition to our stocking points, we are working on providing clients with critical or recommended spare parts to keep on board in order to facilitate the swift resolution of issues commonly arising during operations. With critical spare parts readily available on board the vessel, system restoration can usually be performed by the crew, eliminating the need to source and send the required part to the vessel or, in particularly urgent cases, have someone hand-deliver it. Recommended parts are typically ‘plug and play’ (PnP) or come with simple instructions from our technical support team to help the crew carry out the installation without the assistance of a service engineer.

We have further enhanced our customer service by establishing a 24/7 telephone technical support line, with a team of experts available to answer calls or emails around the clock. Thus, any urgent technical issue can be resolved swiftly. Live support also facilitates direct communication between technical representatives or vessel crew and our technical support engineers, minimising resolution time.

Furthermore, we are in the process of developing a spare parts portal so that our clients can view our systems’ major components along with the recommended and critical parts, as well as the maintenance and calibration kits specific to the systems installed. The portal is expected to be launched in the second half of 2024.

ERMA FIRST’s after-sales support goes beyond dealing with spare parts and service requests. Our holistic approach includes the provision of maintenance services aimed at assisting vessel crews in passing all necessary inspections by authorities, such as the PSC, USCG, AMSA, Class, Flag, Vetting, and RightShip, while maintaining the system in good working condition. Our maintenance schemes include the replacement of essential wearable parts to keep components in optimum condition, the execution of sensor calibration, and the upholding of crew training standards to ensure their readiness for potential inspections, all of which are included in ERMA FIRST’s Maintenance Services proposal to clients.

Yet another crucial consideration is having alternative solutions in place in case a component becomes obsolete due to a vendor’s commercial decisions. At ERMA FIRST, we design our systems to avoid such occurrences. Our experienced technical team identifies alternative components and certifies them in a timely manner.

BWTS are relatively new in the industry, and although the learning curve was initially steep, it has now levelled out. Our technical team thoroughly investigates any incident affecting the operability of our systems, and upon completing a root-cause analysis, it plans and executes countermeasures to avoid a recurrence of the issue. We regularly publish technical bulletins to keep vessel owners and crew up to date while constantly reviewing our designs to offer system upgrades as required.

We recognise feedback as the most crucial factor in helping us improve the support we offer. Thus, we regularly liaise with our clients in virtual or in-person meetings.

Acknowledging the specific risks maritime stakeholders face if systems become inoperable, we support our technologies with spares and services on a lifespan basis. After all, after-sales support is a powerful tool for building strong customer relationships, promoting loyalty, and differentiating our business from competitors. For this reason, while implementing an effective after-sales strategy can be challenging, we are always ready to adopt new ideas and improve our services.

After-sales support has always been one of Kongsberg Maritime's major strategic focus areas.

AFTER-SALES SUPPORT: A KEY STRATEGIC FOCUS AREA FOR KONGSBERG MARITIME UNTIL 2050

by **Stavros Fountas**,
Managing Director at Kongsberg Maritime Hellas
& Head of Sales Greece & Cyprus

Together with our commitment to delivering top-quality solutions that enhance sustainability and reinforce our partners' and customers' operational efficiency, this focus has contributed to putting our company in the "driving seat" regarding the choice of the shipowners and managers when selecting the automation systems and mechanical parts for propulsion, deck machinery, and motion control they install on board their vessels. Another area where we can add significant value is by fulfilling the growing demand for cyber security support and the associated training requirements. This demand is driven, in part, by regulations, but ships are also becoming more complex. As a technology company with an extensive array of complex digital systems, we can offer dedicated services and guidance to ensure our clients' regulatory compliance.

We at Kongsberg are fully aware, though, that being consistent, determined, collaborative, and reliable when delivering spares or assigning our service engineers onboard our valued customers' vessels to ensure our equipment is well-maintained and functioning is a never-ending battle. Demonstrating an innovative approach and flexibility towards the various challenges, such as lack of equipment/installation components availability or long waiting times for raw materials delivery due to reasons such as the pandemic or geopolitical developments that we can neither control nor influence, is critical to ensuring that our customers and partners get the after-sales support level that they expect and deserve.

On the way towards creating the new operating platform for global shipping that the ESG-related regulatory framework calls for in order to reach the 2030 and 2050 milestones, our focus remains on further strengthening the variables of the somewhat complicated equation of the smooth operation of ships while simultaneously complying with the new requirements that we can really influence and control. Kongsberg has clearly stated that we will continue to invest in human resources both in the customer-facing activities through our customer relationship managers and back-office function personnel and in further expanding and strengthening our already broad and unrivalled global network of Service Engineers. As a testament to that, we can very proudly refer to the robust investment that Kongsberg has chosen to make in Greece through the expansion of its after–sales support team based in the Kongsberg Maritime Hellas office. Since the end of the pandemic, we have been upscaling our after-market support resources; moreover, our customer relationship managers, who are in daily contact with our valued customers, will be increased by 150% in the coming weeks, and the back-office personnel will be doubled. That will result in each of our customers having a single point of contact with a professional and dedicated team behind them, supporting all enquiries related to spare parts, dry docking service task planning, preventive maintenance scheduling, and on-time and efficient preparation for upcoming upgrades and retrofits if needed.

At the same time, Kongsberg Maritime is further strengthening its service engineers pool both in Greece and worldwide. We are offering an even stronger, more capable, and diverse network of specialists ready to step on board our customers' vessels to assist crewmembers and operators with any technical issue they may have to tackle to ensure the smooth running of the vessel's operation.

In conjunction with the actions mentioned above, we continue striving to optimise the way we procure the various components of our products and systems, the way we organise product lifecycle management, and the support we offer shipowners and operators. All this applies to the entire life cycle of vessels - from the moment they leave the shipyard with Kongsberg equipment installed on board until they are decommissioned.

Kongsberg can state that the after–sales support that the end users will be receiving throughout the product/equipment utilisation period and the consistent and professional back–up that we will continue offering through the standard and the limited maintenance period of the equipment, shall offer a solid and reliable operating platform of our equipment, which the shipowners and managers operate on board their vessels.

It is also essential to emphasise the fact that the effort to offer adequate and reliable after–sales support must not be perceived as a single-dimension obligation of a single maker such as Kongsberg but mainly as a joint and ongoing effort which will include the shipowners and managers' contribution, standpoint, and collaboration on the way to achieving compliance with highly demanding operating standards; when it comes to maintaining existing equipment and installations on board vessels, on-time preparation and a proactive mindset might prove to be the key determining factor in achieving highly efficient operating standards.

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Christophe Tytgat underlines the need for a comprehensive strategy to support shipyards and the marine equipment sector in Europe in the face of severe competition from Asia.

CHALLENGES AND PROSPECTS OF EUROPEAN SHIPBUILDING

SIGNIFICANT POLITICAL WORK AHEAD

by **Christophe Tytgat**,
Secretary General of SEA Europe

Much of the same

In March of this year, the Shipyards and Maritime Equipment Association of Europe, SEA Europe, issued a new market monitoring report showing the prevailing trends in global shipbuilding in 2023. As expected, the report confirmed that European shipyards have continued to suffer from a lack of competitiveness in global shipbuilding, mainly due to Asia's unequal trading practices and state support. It also reaffirmed China and South Korea's dominance in the global shipbuilding market, securing 55% and 26% of new orders, respectively, in 2023. In comparison, European shipyards only received 7% of new orders.

Moreover, the report confirmed that European shipowners, contrary to their Asian competitors, hardly order domestically. Instead, European shipowners order massively outside Europe, notably in Asia, due to significant price differences between European and Asian shipyards. Lastly, the report revealed another worrying trend for Europe, notably China's rise as a strong competitor in the niche market for complex and innovative vessels, a market still dominated by Europe. This trend is concerning in light of China's growing dominance over global shipbuilding, which reflects the country's determination to be the No. 1 shipbuilder in the world in all shipbuilding markets.

Turning the tide: Enhancing Europe's maritime industrial capacity in light of geopolitical tensions

Despite the well-known longstanding challenges and worrying findings in the report, there is a light at the end of the tunnel. European shipbuilding is and wants to remain a dynamic and innovative industry, committed to excelling in the niche markets of complex shipbuilding and the promising markets of green and digital solutions.

The industry's ambition is clear: to remain a global technological leader that aims to build and retrofit 10,000 sustainable and digitalised vessels by 2035 by capitalising on the opportunities presented by the twin green and digital transitions. European shipyards are confident they have the relevant expertise necessary to achieve this goal and a maritime know-how that can outperform global competitors. After all, for European shipyards, global competition should be based on the highest environmental and quality standards instead of injurious pricing practices.

The current political environment, characterised by heightened geopolitical tensions and potentially less reliable trading partners, has forced European policymakers to shift their political mindset. Previously advocating open trade and competitiveness, the European Commission is now favouring a more prudent and less naïve approach, being open to like-minded trading partners while applying a policy of "strategic autonomy" and "de-risking" for potentially adversary countries.

This shift towards a policy of strategic autonomy and de-risking can now also be observed in shipbuilding. With the lessons learned from the pandemic, the energy crisis, and the war in Ukraine, the European Commission and the EU Member States have become aware of the serious economic and security risks linked to Europe's strong dependence on Asian shipbuilding. Therefore, a further decline in Europe's shipbuilding capacity must not only be avoided but reversed. In this respect, the innovative know-how and expertise of European shipyards and maritime equipment manufacturers, combined with their global technological leadership, form a strong basis for Europe to turn the tide and bounce back. The twin green and digital transitions offer major promising opportunities to outperform global competitors in quality, efficiency, and safety.

The Work Ahead: A Maritime Industrial Strategy

To avoid a further decline in its shipbuilding capabilities and maritime know-how, SEA Europe has called upon the European Commission to urgently take the necessary steps in support of the consolidation and reinforcement of European shipbuilding and the introduction of framework conditions that support the business case for a sustainable and digitalised maritime transport industry. These measures should be part of a comprehensive and holistic sectoral maritime industrial strategy based on four different but intertwined building blocks:

- **Industrial sovereignty and competitiveness**
  The main challenges facing European shipyards are the distortion of competition and unfair trading practices by

Asia. To reinforce Europe's industrial sovereignty and strategic autonomy, European shipyards must increase their orders from shipowners, including European ones, on top of the current orders for complex ship types. More specifically, European shipyards must regain leadership in the strategic sectors of the Blue Economy, notably cabotage, short-sea shipping, passenger transport, fishing, aquaculture, offshore renewable energy, and carriers of alternative fuels.

- **Supportive regulatory framework**
While the European Green Deal, the EU's flagship for a climate-neutral continent by 2050, and the related Net Zero Industry Act, the EU's legislation to help industrial sectors in Europe achieve net-zero carbon emissions, offer promising opportunities, they currently lack the necessary framework conditions to make a business case for building competitive and sustainable ships in Europe. Moreover, they do not address any market failures in shipbuilding or marine equipment manufacturing, nor do they offer the conditions to de-risk investments in such ships.

- **Technological leadership**
While promising innovative solutions for sustainable and digitalised shipping and ship production are available, the EU needs to do more in research, development, innovation, and the upscaling of sustainable and digital technologies and solutions. The success of the co-programmed Partnership on Zero-Emission Waterborne Transport, an EU initiative fostering collaborative research and innovation to develop and implement zero-emission technologies and solutions for waterborne transport, must continue under Horizon Europe's successor, the EU Framework for Research and Development. Moreover, a similar co-programmed Partnership should be established for digitalised maritime solutions.

- **Skilled workforce**
European shipyards and maritime equipment manufacturers provide high-level jobs requiring advanced skills. With the twin green and digital transitions, they need to retain, upskill, and reskill their workforce while simultaneously facing severe competition from other industries in Europe and a fast retiring workforce in the coming five to ten years. Moreover, the cyclical nature of shipbuilding and ship repairing requires a high level of workforce mobility across Europe to match workers' availability with production needs. With these framework conditions in place, Europe can both consolidate and strengthen its position as a global leader in complex shipbuilding and maritime equipment manufacturing, regain strategic markets, and lead in sustainable and digitalised ships and maritime technologies, thus achieving the objectives of the European Green Deal and the EU Digital Agenda.
In doing so, Europe can also safeguard the economic security of its Blue Economy and waterborne value chains, eliminating its current dependency on Asia. In addition, by developing and building state-of-the-art naval military assets for both surface and underwater operations, Europe can strengthen its strategic autonomy and defence.

The time for political action is now!
The current geopolitical landscape, coupled with the lessons learned from the pandemic and the energy crisis, have highlighted the serious economic and security risks inherent in Europe's dependency on foreign, particularly Asian, shipbuilding nations. Therefore, contrary to the past, political inaction is no longer an option.
Building on Europe's global technological leadership and innovative maritime know-how while taking advantage of the promising opportunities arising from the twin green and digital transitions, Europe has the potential and a unique political momentum to turn the tide by issuing a much-needed sectoral maritime industrial strategy. Such a strategy should introduce the framework conditions to enable European shipyards to consolidate and strengthen their current leadership position while also reclaiming dominance in strategic markets and leading in sustainable and digitalised shipping. Therefore, the new European Commission must prioritise this initiative upon taking office in December 2024. Delay or lack of political action will be detrimental to Europe on many fronts.

Building on Europe's global technological leadership and innovative maritime know-how while taking advantage of the promising opportunities arising from the twin green and digital transitions, Europe has the potential and a unique political momentum to turn the tide by issuing a much-needed sectoral maritime industrial strategy.

THE CARBON COUNTDOWN: TRADING UNDER THE EU'S EMISSION AMBITION

Contribution by **Marlow Navigation**
Crew & Technical Management,
Seafarer Training.

As the clock ticks towards a sustainable future, the European Union's Emissions Trading System (EU ETS) has expanded its reach, adding a new layer of complexity to an already intricate regulatory maritime landscape.

Inevitably, shipping companies are potentially facing significant emissions-related expenditures. Surplus allowance costs could impact shipowners and consequently, shipping rates. For example, SeatradeMaritime reports that the EU ETS will, on average, increase operational costs per container vessel by an estimated €550,000 in 2024 and a further €1.4m in 2026. What is more, allowance prices fluctuate based on market conditions and regulatory changes, imposing a new dimension of financial risk.

Despite the limitations and increased administration imposed by the EU ETS, challenges can also be seen as opportunities for growth and innovation in the sector. Financial incentives may even become available to companies that endorse green technologies, like subsidies or tax breaks, which can mitigate some of the financial burdens of transitioning to lower carbon operation brackets. These include investing in modern vessels equipped with advanced technologies such as alternative fuels or hybrid propulsion systems, optimised hull designs, and energy-saving devices.

Implementing new technologies and changing operational practices (like optimising speed, loading strategies, and voyage routes) to comply, may disrupt established procedures. Companies who efficiently manage their emissions may benefit from lower operational costs and enhanced market reputation. While the aforementioned are significant advantages, it is also important to consider the competitive strain on smaller and more traditional establishments which may be less prepared to adapt. Given this predicament, opting for third-party ship management may prove an appealing strategy.

Third-party managers are oftentimes more agile, quickly adapting to regulatory changes, implementing best practices through their specialised knowledge and experience. Their dedicated teams can monitor regulatory developments and ensure that all managed vessels are compliant. It is crucial for shipping companies to ensure that any offsets are credible and result in real, measurable, and verifiable emission reductions. Many reputable managers, such as Marlow Navigation, have long invested in the right frameworks to ensure smooth operations as well as the integrity of reported data, reducing the owners' administrative burden.

Non-compliance with EU ETS requirements can lead to substantial fines and penalties, which may prove a significant financial blow. Ensuring compliance is thus crucial and in-tandem, owners could further benefit from a ship-manager partnership, yielding further cost savings. Managing multiple vessels for various owners allows third-party managers to achieve more competitive economies of scale in purchasing allowances, technology upgrades and even fuel. While traditional shipping companies face significant challenges due to the EU ETS, there are strategies to help mitigate these difficulties. By outsourcing ship management, owners can focus on what matters - their core business strategy, leaving operational complexities and regulatory compliance to experts.

A CLEAN HULL ENSURES CLEANER OPERATIONS

In his interview with Naftika Chronika, Gary Nixon comments on the contribution of the marine coating industry to reducing the environmental footprint of shipping and describes Jotun's future plans.

Gary Nixon,
General Manager at Jotun Hellas Ltd,
Jotun Performance Coatings,

talks to
Giannis Theodoropoulos

❶ What role will innovation play in Jotun's development plans?

Our global R&D network is the backbone of our industry-leading innovation and technology. Jotun has been dedicated to protecting properties worldwide for almost a century. Our global R&D network powers industry-leading innovation and technology, with the heart of Jotun's research and development based in Sandefjord, Norway. As a global leader in the paints and coatings industry, Jotun's R&D initiatives are always in sync with the latest trends worldwide. We strive to provide the best solutions possible, and often, a new Jotun innovation will emerge at a local level and go through various stages of development and testing before being implemented on a local, regional, or global scale. We are proud to support these processes and our global operations with a truly global presence of several regional laboratories. Our regional R&D hubs include Europe, East Europe and Central Asia, the Middle East, Southeast Asia, Northeast Asia, and the Americas. We remain committed to protecting property worldwide and will continue to push the boundaries of innovation.

❷ In what ways does Jotun contribute to the sustainability of shipping?

The need for sustainability improvements in the shipping industry is accelerating. The industry must cut carbon emissions, protect marine biodiversity, and leverage data for smarter decision-making. With nearly 100 years of experience charting unknown waters, Jotun is committed to continuously innovating and developing advanced products and solutions designed to protect biodiversity and cut carbon emissions to support global sustainability ambitions, and achieve cleaner operations for all industry players. The matter of fact remains: a clean hull ensures cleaner operations.

In June 2023, Jotun proudly presented our Clean Shipping Commitment to the industry, thereby establishing a new framework as well as new documentation and, for sure, new possibilities, both for us and our business partners. By now, we all know the impact of a clean hull, i.e. that it reduces speed loss and thereby saves fuel, reduces the vessel's operational downtime, and assists in ensuring regulatory compliance and protecting biodiversity by reducing the risk of transmigration of foreign aquatic species. Protecting the current merchant fleet from biofouling can cut CO_2 emissions by as much as 19%! Regulations related to preventing marine aquatic species are getting stricter, and having a clean hull will be essential for moving forward! As we've always been preaching, a clean hull is an efficient hull and ensures cleaner and more efficient operations. Jotun has, since it was established in 1926, been committed to innovating and providing industry with cutting-edge products and solutions.

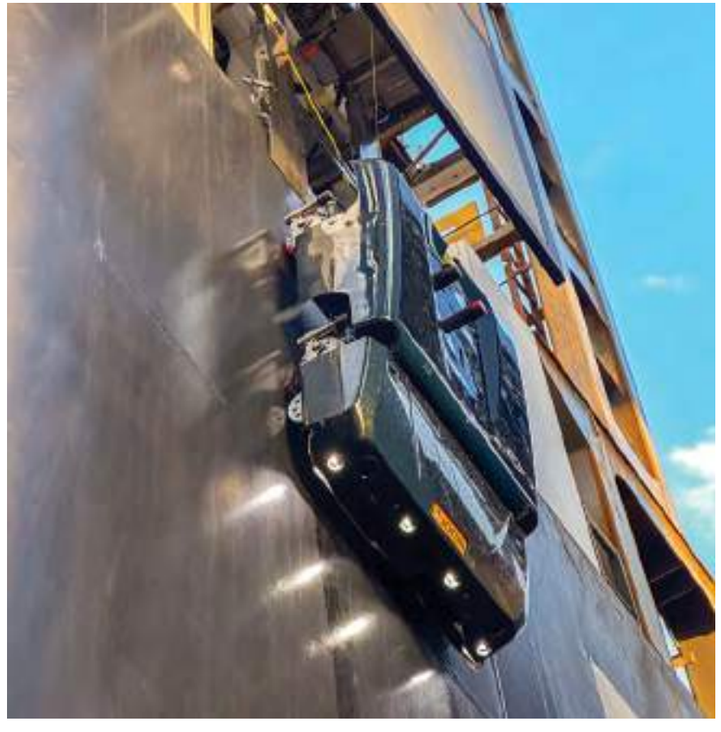
❸ What is the envisioned trajectory for Jotun's development? How does it align with prospects in the Greek market?

Jotun is a leader in innovation, always developing solutions that perfectly match our business partners' needs. As a part of the Jotun family, Jotun Hellas will be at the forefront of all new developments within the marine coating industry. We are continuously working on developing innovative products, solutions, and services, ensuring that Jotun Hellas remains a key driver within the Greek Shipping market. At Jotun, we are committed to forging strong partnerships with our valued business partners and truly understanding their unique needs and objectives.

❹ Looking ahead, what do you see as the most significant opportunity and the greatest challenge in the shipping industry's efforts toward decarbonisation?

Considering our mission and contribution to green shipping, we aim to highlight the challenge of the negative environmental impact of biofouling even more. A recent survey conducted by Lloyd's List, following the GloFouling report published by the International Maritime Organisation (IMO), shows that most shipping industry leaders underestimate the negative impact of biofouling. It is worth mentioning that in 2022, our customers reduced their emissions by 7.9 million tonnes of CO_2 thanks to our antifouling solutions.

Jotun Hull Skating Solutions utilises proactive cleaning to combat early-stage fouling and maintain an always-clean hull,even in the most challenging operations. A clean hull significantly reduces fuel costs, greenhouse gas emissions, and the spread of invasive species.



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BENEVOLENCE

Edited by: Panagiotis Korakas

DONATION IN MEMORY OF JOHN AND ERIETTA LATSIS FOR THE UPGRADE OF THE NATIONAL ARCHAEOLOGICAL MUSEUM

As announced on 17 April by the Ministry of Culture, a donation contract was signed between the Ministry of Culture and the National Archaeological Museum as beneficiaries and Dr Spyros J. Latsis and Dorothy Latsis as benefactors. With this agreement, the donors committed to finance, exclusively at their own expense with up to €40 million, all the necessary studies concerning the upgrading and expansion of the National Archaeological Museum building. The studies will be carried out by the renowned and award-winning "David Chipperfield Architects" and "Tombazis and Associates Architects S.A" architectural offices. The donation by Spyros and Dorothy Latsis is made in memory of John and Erietta Latsis.

The upgrade and extension of the National Archaeological Museum building was the subject of an architectural design competition that took place from November 2021 to December 2022. Ten proposals were submitted by Greek and foreign architectural firms' partnerships. They were evaluated by a seven-member International Multidisciplinary Committee, which unanimously selected the proposal of the above architectural offices who presented their proposal at an event at the National Archaeological Museum on 15 February 2023 in the presence of Prime Minister Kyriakos Mitsotakis.

According to the donation agreement, the studies will meet the specifications set by the Ministry of Culture regarding the preparation of the architectural draft, the legislation requirements governing public sector studies, and the rules of good scientific, artistic, and international practices. The studies will be approved by the relevant competent services and the Ministry of Culture's Central Councils and monitored by a committee of Ministry of Culture officials. The scope of the studies includes the preparation of an implementation study and tender documents in accordance with the specifications of the Greek State, as well as the issuance of a building permit. It is expected that the studies will have been completed by the end of the first half of 2027.

According to the Ministry of Culture's announcement, Prime Minister Kyriakos Mitsotakis made the following statement: "The State welcomes today the kind donation of up to €40 million by Spyros and Dorothy Latsis. This contribution marks a significant step towards realising a great dream for Athens and Greece: the extension and upgrade of our National Archaeological Museum! With this dream in mind, the winning drafts from the relevant international architectural competition will be transformed into final designs so that by the beginning of 2027, the project can be launched. The National Archaeological Museum will thus acquire the rightful place it deserves, and the image of the capital's city centre will be greatly improved. This donation is not only a noble gesture in memory of John and Erietta Latsis but also a clear demonstration of what our country can achieve when the public and private sectors join forces for the common good. Congratulations to everyone involved in this endeavour".

Following the signing of the donation agreement, Minister of Culture Lina Mendoni remarked: "With their generous donation, Spyros and Dorothy Latsis create the conditions for the implementation of a visionary and unique project as it does not only concern the National Archaeological Museum, the largest and most important custodian of the masterpieces of ancient Greek art worldwide; it concerns the revitalisation of Athens' historical centre and the capital's growth potential. The National Archaeological Museum, outward-looking, open to the city, in constant dialogue with society, and looking towards the future, is connected to the global culture scene. Thanks to this donation, we can now plan the next steps for the implementation of the project".

GREEN LIGHT FOR THE UNION OF GREEK SHIPOWNERS' GENEROUS DONATION TO THESSALY AND CENTRAL GREECE

With a joint ministerial decree, the Ministry of Infrastructure and Transportation and the Ministry of Economy and Finance approved the Union of Greek Shipowners' (UGS) donation of €30.5 million to Ktiriakes Ypodomes S.A. The generous donation will be used for the restoration of schools in Thessaly and Central Greece affected by the storms "Daniel" and "Elias". This development came after the signing of the relevant Mem-

Photo credit:
Yiorgis Yerolymbos

orandum of Cooperation by the Minister of Infrastructure and Transportation, Christos Staikouras, the President of Greek Shipowners (UGS), Melina Travlos, and the CEO of Ktiriakes Ypodomes S.A., Athanasios Giannaris, on 20 December 2023.
Restoration work will be carried out in 33 schools located in the municipalities of Trikkaia, Farkadona, Palamas, Volos, and Domokos based on the relevant legislation regarding urgent project execution in civil protection emergencies.

THE STAVROS NIARCHOS FOUNDATION LENDS THE SPYROS LOUIS CUP TO THE LOUVRE MUSEUM

The historic Spyros Louis Cup, presented to the winner of the first Olympic marathon at the inaugural modern Olympic Games, which was inspired and designed by Michel Bréal and acquired in an auction by the Stavros Niarchos Foundation (SNF) with the goal of making it freely accessible to the public by putting it on display at the Stavros Niarchos Foundation Cultural Centre (SNFCC), will travel to one of the world's most prominent museums this year. From 24 April to 16 September, the Spyros Louis Cup will be at the Louvre Museum in Paris as one of the centrepieces of the upcoming temporary exhibition "Olympism: Modern Invention, Ancient Legacy", organised in collaboration with the Ecole Française d'Athènes to coincide with the 2024 Paris Olympic and Paralympic Games.
According to the organisers, the exhibition "invites visitors to discover the creation of the modern Olympic Games, as well as their late-19th-century sources of visual inspiration.... and aims to highlight the role of France, and Paris in particular, far beyond Pierre de Coubertin, the personality history generally remembers. Lesser-known figures, historians, and politicians, such as Dimitrios Vikelas, Michel Bréal, and Spyridon Lambros, are brought into the spotlight. In their attempt to understand Greek sport through the study of ancient texts and archaeological evidence, these historians and scholars reinvented the Olympic Games of ancient Greece".
Through the exhibition, visitors to the Louvre will have the opportunity to admire the silver cup bearing Michel Bréal's inscription in Greek, "Olympic Games 1896, Marathon Trophy, Donated by Michel Bréal", which aimed to link the modern Olympics with the Olympic Games of antiquity.
Stavros Niarchos Foundation's (SNF) Co-President Andreas Dracopoulos said: "The loan of the Spyros Louis Cup to the Louvre Museum, coinciding with the 2024 Olympic and Paralympic Games, reflects the ongoing commitment of the Stavros Niarchos Foundation (SNF) to making this unique historical and cultural artefact, which at the same time symbolises the values of sportsmanship and fair play, accessible to an ever wider public to be enjoyed—in this case to the millions of visitors that the Museum is expected to attract, especially during the Olympic Games".

THE ONASSIS FOUNDATION SUPPORTS THE NATIONAL CAMPAIGN AGAINST SCHOOL VIOLENCE: "STOP BULLYING. DON'T TOLERATE BULLYING. SPEAK UP. YOU CAN".

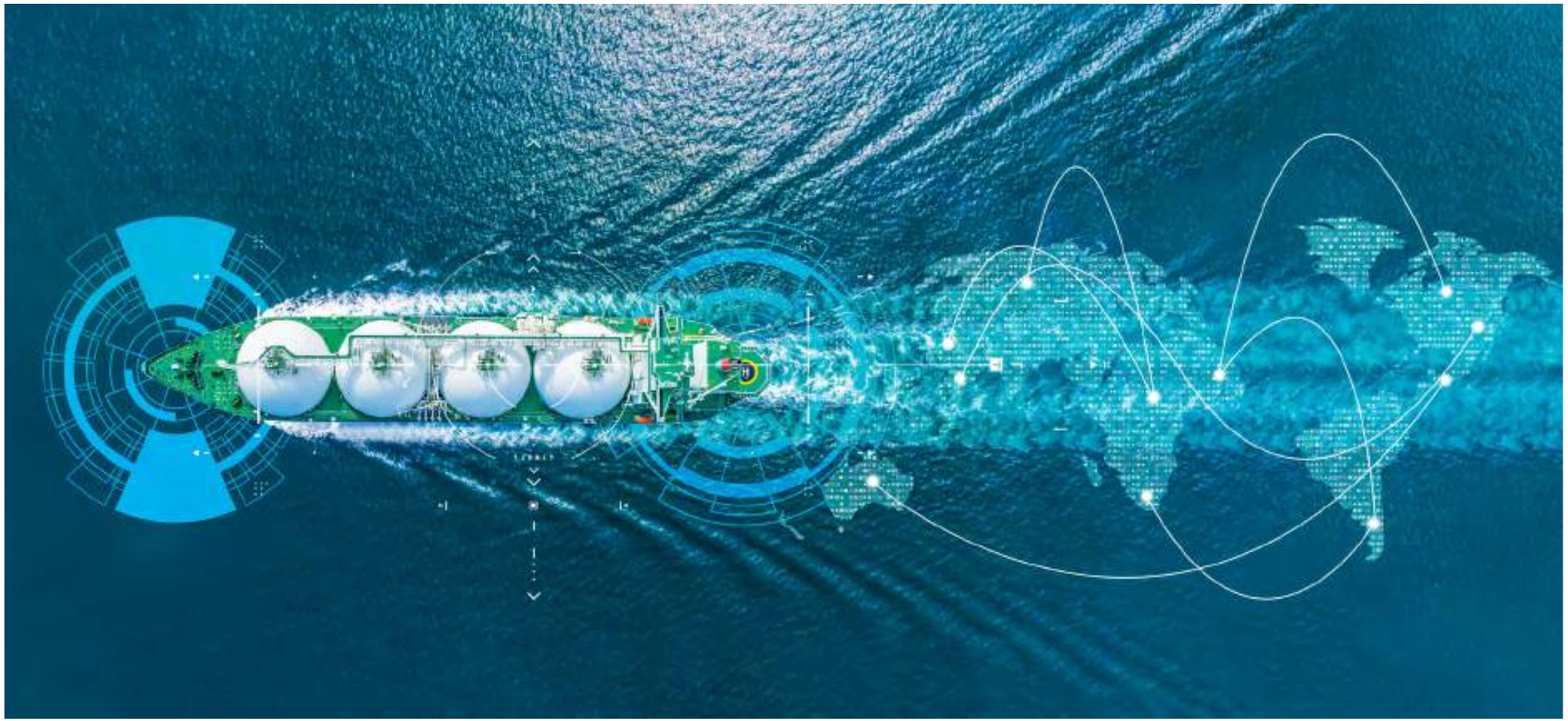
A mindset change campaign, supported by the Onassis Foundation in collaboration with the Ministry of Education, Religious Affairs, and Sports, introduces the first digital platform for addressing school bullying.
Through the implementation of the campaign "STOP Bullying. Don't tolerate bullying. Speak up. You can". for the new platform of the Ministry of Education, Religious Affairs, and Sports, the Onassis Foundation aims to foster a collective network of information, understanding, and action. An alliance that encourages active listening and collaboration, serving as a vital "shield" against violence.
On Tuesday, 9 April, Prime Minister Kyriakos Mitsotakis visited the 3rd High School of Polichni, Thessaloniki, for the presentation of the national strategy and information campaign for the fight against intra-school violence and bullying by the Minister of Education, Kyriakos Pierrakakis; the campaign was designed and implemented with the support of the Onassis Foundation.
As part of the presentation, the president of the Onassis Foundation, Anthony S. Papadimitriou, made the following statement: "The cycle of school violence can and must be broken. To make this possible, students, teachers, and parents must gain a voice – a voice, as well as a way to react. This voice must gain strength and become a distinct story of courage. It can thus act as a catalyst in this mindset change campaign, which is fully supported by the Onassis Foundation and its donation. It is actually this concept of the 'catalyst' that brings us all together in this initiative. In our history of approximately 50 years – next year, the Onassis Foundation will complete exactly half a century of activity, thanks to the legacy of Aristotle Onassis – we have always operated with the logic of the 'catalyst': We do not mean to suggest changes, but rather to anticipate them. We do not simply undertake their financial support but embrace projects that concern our society and are in line with the Foundation's principles. The support provided by the Onassis Foundation to the Ministry of Education's campaign against school bullying draws on our vision for education. An education that doesn't rule out anyone, an education that combats fear and combines knowledge with inclusion".
For the Onassis Foundation, the awareness campaign against school bullying is a matter of education and culture. This campaign is part of our effort to change mindsets on different issues such as the rights of women and the LGBTQI+ community, the climate crisis, vaccines, organ donation, or other serious social problems our society faces".
Both the Prime Minister and the Minister of Education expressed their gratitude to the Onassis Foundation for the "invaluable support in the campaign's planning and implementation".

THE PROPELLER CLUB PLEDGES ITS SUPPORT TO GREEK STUDENTS WITH A 100,000-EURO GRANT

On the occasion of the 9th "Our Ocean Conference", the International Propeller Club, Port of Piraeus announced its pledge to support Greek students aspiring to pursue a master's degree at a University in Greece or abroad in the disciplines of Water Resources Management, Marine Environment, Marine Environmental Protection, Marine Ecology, Marine Environmental Management, and Marine Conservation.
This commitment aims to provide support to 10 students by granting €10,000 for fees or as a subsistence allowance, benefiting one student annually for the next ten years.
President Costis J. Frangoulis stated: "We are proud to announce our pledge of €100,000, as part of our commitment towards education and ocean science, aiming at cleaner seas".

FLEET

Edited by: Giannis Theodoropoulos



The regulatory requirements to reduce shipping's environmental footprint necessitate the acceleration of the industry's digital transformation, which received an initial boost during the pandemic. After all, a major hurdle for shipping companies toward decarbonisation is their long-standing reliance on paper documents for legal and regulatory purposes. In this context, shipping companies are now required to proceed with large-scale investments in technologies aimed at fleet optimisation that will pave the way for the transition to the new era. At the same time, this transformation implies a new status quo when it comes to connectivity between vessels and offices as well as a change in corporate culture. In the following pages, shipping industry executives share their views on the steps needed to achieve fleet optimisation, what is next for connectivity and telecommunications in the shipping industry, and the benefits of Artificial Intelligence.

OPTIMISATION

Gregory Spourdalakis discusses the shipping industry's potential to capitalise on AI to revolutionise fleet optimisation, acknowledging that solutions like remote diagnostics, AI, and data analysis will be central to the future of maritime operations.

DIGITALISATION BENEFITS OUTWEIGH THE RISKS

by **Gregory Spourdalakis**,
Managing Director
at Columbia Shipmanagement Greece

What are the practical steps involved in a company's fleet optimisation?

Fleet optimisation for a company entails several key steps. Firstly, meticulous maintenance management is crucial, involving the implementation of advanced software for tracking schedules and conducting regular inspections. Secondly, cost reduction efforts are essential, including training crew members on fuel-efficient practices, closely monitoring fuel consumption, and deploying effective fuel management systems. Thirdly, sustainability initiatives play a pivotal role, encompassing the adoption of eco-friendly practices such as alternative fuels, hybrid engines, and route optimisation software to minimise emissions and fuel usage. These measures collectively enhance efficiency, cost-effectiveness, and sustainability, ensuring the smooth operation of the company's fleet.

What is the primary driver for fleet optimisation investments?

The primary incentive driving investments in fleet optimisation is to bolster navigational, operational, and commercial performance, thereby delivering heightened value to customers. This optimisation endeavour strives to augment efficiency, transparency, and operational efficacy in ship management processes.

At Columbia Group, leveraging cutting-edge digital platforms like OneLink and the Performance Optimisation Control Room (POCR), we harness the latest technological advancements and digital methodologies within a secure framework to optimise various facets of fleet performance. Such strategic investments are paramount for maintaining a leadership position in maritime innovation and upholding operational excellence within the dynamic shipping landscape.

What technologies is your company implementing to optimise its fleet? How challenging is it to integrate the latest technological developments with the human element?

Columbia harnesses AI and analytics across various operational aspects, including ship navigation, bunkering, engine room, and bridge operations. These technologies enable us to enhance safety and efficiency through advanced weather routing, voyage planning, fuel optimisation, and AI-driven live sensors transmitting high-frequency data.

Integrating these latest technological developments with the human element in the maritime industry presents both challenges and opportunities. It requires striking a delicate balance between innovation and the human factor to ensure safe and efficient operations. By nurturing essential human skills such as leadership, teamwork, adaptability, and stress resilience alongside technological advancements, we foster a harmonious and productive work environment on board. To facilitate this integration, we have implemented a state-of-the-art Learning Management System (LMS) and partnered with OneLearn Global to comprehensively educate our crew on fleet monitoring and the latest shipping technologies. Additionally, we leverage digital twin technology for performance and fuel consumption optimisation, providing real-time insights and efficiencies for our vessels.

Do you believe that larger companies have an advantage in implementing fleet optimisation strategies?

I believe that the scale and resources of larger companies enable them to invest in cutting-edge technologies like digitalisation, which is crucial for optimising management, technical capabilities, and crew operations. By leveraging these advancements, larger companies can enhance service delivery, cater to both small and big clients effectively, and stay competitive in the evolving global shipping market. Additionally, the focus on individual shipowners remains paramount, ensuring that, despite growth, the core values of personalised service are maintained. In essence, the strategic advantage of larger companies lies in their ability to adapt to market trends, embrace digital transformation, and provide top-notch services to clients of all sizes.

How can shipping capitalise on AI? Are there any specific applications particularly relevant to fleet optimisation?

Shipping can capitalise on AI to revolutionise fleet optimisation through vari-

The future of connectivity and telecommunication in the shipping industry is all about embracing cutting-edge technology to improve efficiency and safety at sea.

ous applications. AI enables advanced weather routing and voyage optimisation by analysing data to suggest optimal routes, thus enhancing fuel efficiency and safety during voyages. Additionally, AI-driven predictive maintenance algorithms can anticipate equipment failures, allowing for proactive maintenance to prevent downtime and ensure operational efficiency. Digital twinning technology further facilitates performance optimisation by creating digital replicas of vessels and equipment for simulation and scenario testing, aiding in risk mitigation. By leveraging these AI technologies, shipping companies can streamline operations, reduce costs, improve safety standards, and enhance overall fleet performance.

How efficient and safe is the interoperability of the new digital platforms for monitoring ship performance, ensuring compliance, and facilitating reporting?

Columbia Shipmanagement takes digitalisation very seriously. We've been at the forefront of developing new digital platforms to monitor ship performance, ensure compliance, and facilitate reporting. These platforms are designed to be interoperable, improving efficiency and safety in several ways. Our ecosystem of digital tools is a secure portal that provides real-time data on vessel performance, allowing swift issue identification and resolution, which can help prevent accidents and ensure regulatory compliance. Additionally, these platforms can be integrated with other maritime software systems using APIs, which can further streamline operations and improve data quality. Of course, there are always going to be challenges associated with interoperability, such as ensuring compatibility between different systems. However, we believe that the benefits of digitalisation outweigh the risks and are committed to working with other stakeholders in the industry to develop standards and best practices that will make interoperability even more efficient and safe.

What, in your view, is the future of connectivity and telecommunications in the shipping industry?

The future of connectivity and telecommunication in the shipping industry is all about embracing cutting-edge technology to improve efficiency and safety at sea. At Columbia Shipmanagement, we have always been at the forefront of innovation, and I believe that solutions like remote diagnostics, AI, and data analysis will play a major role. Moreover, we do not have a single IT backbone in the maritime industry. Vessels cannot communicate effectively and digitally with ports, airports, planes, and trains; therefore, a tremendous opportunity for cross-sector optimisation is being missed. However, I am confident that Maritime IT will find its common IT backbone within the next few months, rendering many of the fragmented and non-homogeneous IT systems presently available obsolete in the future.

Georgios Christopoulos advocates the adoption of AI applications in digitalisation efforts and emphasises the significance of satellite communications and cybersecurity in the industry's future.

AI HOLDS SIGNIFICANT PROMISE FOR THE SHIPPING INDUSTRY

by **Georgios Christopoulos**,
Chief Operating Officer
at Laskaridis Shipping

What are the practical steps involved in a company's fleet optimisation?

Fleet optimisation involves the consideration of various factors. Initially, a company's management must identify the organisation's optimisation requirements and align them with the current trends and advancements in the maritime industry. For instance, fuel oil optimisation stands out as a key focus area, prompting numerous companies to invest in innovative technologies and digital platforms. These investments enable them to enhance fleet monitoring capabilities and operate vessels more efficiently.

In this respect, once companies evaluate market trends and the competitors' strategies, they proceed to select the most suitable digital technology for their fleet optimisation efforts. Upon implementation, companies leverage this technology to monitor their fleet more effectively, aiming to achieve optimal performance levels and gain a competitive advantage.

What technologies is your company implementing to optimise its fleet? How challenging is it to integrate the latest technological developments with the human element?

Laskaridis Shipping is at the forefront of adopting diverse digital technologies to enhance fleet optimisation. Approximately 80% of our modern bulk carriers are equipped with high-frequency data collection systems. We firmly believe that data has immense potential as a valuable source of insights in the current era of digitalisation.

Furthermore, we utilise digital platforms to monitor our fleet's performance in real time, enabling us to generate time-series graphs when required. This allows us to assess and evaluate various parameters related to the condition of main engines (M/E) and auxiliary engines (A/Es) across our vessels. Additionally, through these platforms, we aim to closely monitor the carbon intensity index of each vessel and minimise it to the greatest extent possible, aligning with the IMO-mandated decarbonisation strategy to reduce our carbon footprint while also operating our fleet in the most efficient manner possible.

Regarding the human factor, we must consider both office employees and seafarers, as the integration of the latest technological advancements poses challenges for both groups. Office employees may find it somewhat easier due to their higher educational level and regular exposure to technological applications in their daily work. However, seafarers, who may have varying levels of familiarity with technology and educational backgrounds, may find the integration process more challenging. Nevertheless, at Laskaridis Shipping, we are dedicated to educating both our office employees and seafarers, aiming to stay ahead of the curve and effectively address the ongoing technological evolution, particularly in areas where AI applications excel.

How can shipping capitalise on AI? Are there any specific applications particularly relevant to fleet optimisation?

Capitalising on AI is not an easy matter, as the adoption of AI technology does not guarantee automatic economic benefits across the board. To fully harness the potential of AI, the management of shipping companies must focus on implementing their strategy effectively. This involves an understanding of the most suitable use cases and specific circumstances before proceeding. Additionally, companies should be mindful of potential risks associated with AI and develop comprehensive plans to mitigate them.

Numerous AI applications tailored for the shipping industry have emerged. One such example is the use of smart AI cameras installed onboard vessels, which perform

visual analytics to trigger alarms in various scenarios. For instance, these cameras can detect instances where a seafarer is not wearing their protective gear, prompting timely intervention. Another example is the utilisation of virtual or augmented reality systems. Through these systems, employees can don special high-tech 3D glasses to be virtually transported in real-time from their offices to the ship's environment. This immersive experience allows them to feel as if they were physically present onboard the vessel.

These examples represent just a glimpse of what lies ahead. AI holds considerable promise for the shipping industry, and it would be wise for shipping companies to consider its adoption as they embark on their digitalisation journey.

What is the primary driver for fleet optimisation investments?

Once a shipping company successfully quantifies factors that were previously challenging to measure in its fleet performance, the subsequent step on the roadmap involves optimisation.

Fleet optimisation investments are typically driven by a combination of factors, but the primary drivers often include cost reduction and efficiency improvement. Regarding the decrease in operating costs, by optimising vessel routes, fuel consumption, and maintenance schedules, shipping companies can lower their fleet-related expenses. Compliance with regulations and the safety of vessels are also critical concerns for fleet managers. Investments in optimisation technologies and systems can help companies meet regulatory requirements, monitor equipment, and enhance overall safety standards.

Additionally, environmental concerns can be a motive for investing in fleet optimisation. With growing awareness of environmental issues, many companies invest in fleet optimisation to reduce their carbon footprint and minimise emissions. This can involve adopting cleaner technologies, optimising routes to reduce fuel consumption, and implementing eco-friendly practices.

Lastly, companies that invest in fleet optimisation can gain a competitive edge by offering more reliable and cost-effective services to charterers compared to their competitors, thus helping to attract and retain premium charterers in a competitive market.

Do you believe that larger companies have an advantage in implementing fleet optimisation strategies?

Larger shipping companies often have certain advantages when it comes to implementing fleet optimisation strategies. Companies with a large fleet size can benefit from economies of scale in purchasing fuel, maintenance services, and other operational expenses, potentially reducing costs per vessel or unit of cargo transported. Commonly, larger shipping companies have greater financial resources and access to advanced technologies, allowing them to invest in sophisticated fleet optimisation tools and systems. Such companies often have more extensive data collection capabilities due to their larger fleet size and broader operational reach. This wealth of data enables them to conduct more comprehensive analyses and make more informed decisions when optimising fleet performance. Larger shipping companies may also have dedicated teams or departments focused on fleet optimisation, comprising experienced professionals with specialised knowledge in areas such as data analytics, route optimisation, and technical maintenance.

However, smaller shipping companies can still compete effectively by leveraging their agility, flexibility, and niche market focus. They may adopt simpler, more streamlined fleet optimisation strategies tailored to their specific needs and operational constraints. Additionally, advancements in technology and the availability of third-party optimisation solutions have made some optimisation tools more accessible to smaller companies.

How efficient and safe is the interoperability of the new digital platforms for monitoring ship performance, ensuring compliance, and facilitating reporting?

The efficiency of interoperability in new digital platforms depends on several factors, such as data integration and standardisation. Interoperability relies on the seamless exchange of data between different systems and platforms. Efficient data integration ensures that information from various sources can be accurately collected, processed, and analysed. If the systems are well-designed and standardised, interoperability can be more efficient and safer.

The standardisation of data formats, protocols, and communication interfaces is crucial for interoperability. When different

As connectivity increases, cybersecurity will become even more crucial to protect ships from cyber threats such as hacking and malware. Robust cybersecurity measures will need to be implemented to safeguard sensitive data and critical systems.

platforms adhere to common standards, it becomes easier to integrate and exchange data reliably. Therefore, implementing the International Organisation for Standardisation (ISO) for shipboard data servers used to share field data at sea (ISO 19847) and standard data for shipboard machinery and equipment (ISO 19848) is beneficial for software systems. Moreover, initiatives like the International Maritime Organisation's (IMO) standardised formats for electronic reporting, such as Automatic Identification Systems (AIS), contribute to improved interoperability.
Securing data exchanges is crucial, especially in the maritime industry, where sensitive information is involved. Robust cybersecurity measures, including encryption, authentication, and access control mechanisms, are necessary to safeguard data integrity and protect against unauthorised access or tampering. Digital platforms can enhance compliance monitoring by providing real-time data on ship performance, emissions, fuel consumption, and other relevant parameters. By automating the reporting processes and ensuring accuracy, these platforms facilitate regulatory compliance and reduce the risk of non-compliance penalties. The effectiveness of digital platforms also relies on the training and support provided to their users. Proper training ensures that operators can utilise the platforms effectively, reducing the likelihood of errors and improving overall safety and efficiency.
Overall, the efficiency and safety of interoperability in new digital platforms for maritime monitoring and reporting depend on multiple factors. When these aspects are well-addressed, interoperable systems can significantly enhance operational efficiency, regulatory compliance, and safety in the maritime industry.

What, in your view, is the future of connectivity and telecommunications in the shipping industry?

The future of connectivity and telecommunication in the shipping industry is likely to be driven by advances in technology, such as satellite communications and cybersecurity. With regard to satellite communication, continued advancements in satellite technology will enable ships to stay connected to the Internet even in remote areas of the ocean. High-speed satellite internet will facilitate real-time data transmission, improving communication between ships and onshore teams. As connectivity increases, cybersecurity will become even more crucial to protect ships from cyber threats such as hacking and malware. Robust cybersecurity measures will need to be implemented to safeguard sensitive data and critical systems. Overall, the future of connectivity and telecommunication in the shipping industry will revolve around leveraging technology to enhance efficiency, safety, and sustainability. It will involve a combination of advanced communication systems, data analytics, automation, and emerging technologies to transform the way goods are transported across the world's oceans.

Konstantinos Bougiouris and Eleftherios Kaklamanis discuss fleet optimisation strategies and argue that the future of shipping lies in enhanced connectivity and telecommunications, enabling secure data flow and more efficient operations.

CONNECTIVITY AND TELECOMMUNICATION AT THE FOREFRONT OF SHIPPING'S DIGITALISATION

by **Konstantinos Bougiouris**,
Projects & Energy Performance Manager
at Euronav

& **Eleftherios Kaklamanis**,
Head of Fleet Performance Management
at Euronav

What are the practical steps involved in a company's fleet optimisation?

Regarding performance and energy efficiency, fleet optimisation typically involves the analysis of main energy consumption sources, hull and propeller conditions, and voyage optimisation. Specifically, the optimisation of the primary sources of energy consumption is ensured by maintenance status monitoring and proper machinery utilisation. Optimisation must also be correlated and aligned with the operational profile of each vessel to implement a suitable set of measures. Simultaneously, continuous investigation of the maritime industry and related sectors has helped us identify technical and operational measures that fit the characteristics and profiles of each specific vessel. The implementation of energy-saving devices or operational measures requires a robust ROI analysis, an understanding of the sensitivities of the incorporated amplitudes of the examined area, and a retroactive mechanism to monitor the efficiency of the applied measures, mainly through high-frequency data.

What is the primary driver for fleet optimisation investments?

Fleet optimisation strategies and investments are driven by the company's commitment to reducing its carbon footprint and whether its strategies are in alignment with other related sectors, our internal ESG strategy, and the IMO's GHG reduction goals.

Euronav has proceeded to 'green investments' such as investments in Variable Frequency Drivers (VFDs) and advanced anti-fouling coating for hull, propeller, and other hull appendices. The goal is to reduce operational costs and alleviate the company's financial exposure to GHG Emissions Taxonomy while complying with the present and future EU regulatory framework (EU ETS, Fuel EU).

Additionally, increasing the company's competitiveness and improving its reputation within the industry are also major objectives of fleet optimisation investments. To this end, these investments can support the company's decarbonisation pathway while ensuring its compliance with the IMO requirements and achieving internal ESG goals.

What technologies is your company implementing to optimise its fleet? How challenging is it to integrate the latest technological developments with the human element?

Euronav has formulated a fleet optimisation strategy that is continuously updated via a set of operational and technical measures suitable for the managed fleet. Specifically, high-frequency data plays an essential role in fleet performance optimisation with multiple applications. Voyage optimisation and machinery performance are also crucial in optimising the fleet's performance, together with onboard energy-saving devices that are based on a robust ROI analysis.

The crew plays a significant role in implementing technological developments to expedite the return on investment and ensure the ship's safe operation. Hence, crew training is required to ensure the proper operation of the vessel and build up the crew's confidence in the operation of energy-saving devices. By cultivating the necessary crew mentality, an in-depth examination of the vessel's existing operational profile and its further optimisation can be achieved.

Do you believe larger companies have an advantage in implementing fleet optimisation strategies?

Uniformity is an essential factor for larger companies regarding fleet optimisation strategies and integrated systems. However, larger companies can redirect part

The crew plays a significant role in implementing technological developments to expedite the return on investment and ensure the ship's safe operation. Hence, crew training is required to ensure the proper operation of the vessel and build up the crew's confidence in the operation of energy-saving devices.

of their resources to trial installations in order to investigate the feasibility and efficiency of a fleet optimisation strategy's technical and operational measures. If these trial installations prove successful, the company can then proceed to install and implement the examined measures across its entire fleet.

How can shipping capitalise on AI? Are there any specific applications particularly relevant to fleet optimisation?

Artificial Intelligence (AI) applications as a broadband superset of machine learning are applicable to the shipping industry. Specifically, we utilise genetic algorithms with high-fidelity meteorological and oceanographic data, along with navigational databases, to achieve multi-objective voyage optimisation.
Machine learning methodologies and statistical learning techniques are also feasible in the shipping industry. These robust techniques can be applied within a vessel-specific framework and not on a black-box approach in conjunction with the high-frequency data derived from the onboard data acquisition system.
Statistical learning methodologies are applicable in terms of pattern recognition of machine performance, enabling conditional-based monitoring and predictive maintenance. Additionally, machine learning methodologies can be applied to voyage optimisation, utilising route optimisation to mitigate the effects of the uncertainties derived from financial perspectives and port operations.

How efficient and safe is the interoperability of the new digital platforms for monitoring ship performance, ensuring compliance, and facilitating reporting?

The efficient interoperability of the new digital platforms requires robust models to ensure accurate ship performance monitoring while simultaneously facilitating reporting through continuous and granular data flows, either in noon reports or high-frequency data. Assuming the reliability and abundance of high-frequency sensors and data sources, the granularity of the reporting sequence from the crew on these digital platforms can be efficient and robust while ensuring optimal vessel performance monitoring and facilitating reporting.
The human element certainly increases potential risks in the reporting procedure. However, proper and accurate crew training in the new digital platforms can support the crew during the transitional period from conventional to more advanced systems.

What, in your view, is the future of connectivity and telecommunications in the shipping industry?

In recent years, digitalisation has been accelerating within the shipping industry, with connectivity and telecommunication being at the forefront. In coming years, data flow information derived from vessels is expected to be more secure in terms of granularity and continuity. Internet coverage is also central in this process, enabling the optimisation of vessel performance and facilitating the smooth transition to new digital platforms.

George Chalkias analyses the drivers for fleet optimisation investments and highlights the significant potential AI holds for the shipping industry.

AI MODELS AND TECHNIQUES ARE LIKE A BLACK BOX

by **George Chalkias**,
Technical Manager
at Safe Bulkers Management Ltd.

What are the practical steps involved in a company's fleet optimisation?

Fleet performance optimisation is driven by the need to increase efficiency across all aspects of the company, including financial, environmental, and social considerations.

A practical step towards fleet optimisation involves data analysis for decision support. Leveraging data from a data acquisition system can effectively inform business decisions. For instance, route optimisation can be achieved based on weather forecasts or environmental indicators.

Maintenance optimisation can be achieved through the implementation of predictive maintenance strategies by monitoring machinery parameters and hull conditions in real time, thus increasing efficiency.

The introduction of energy efficiency measures also plays a pivotal role in fleet optimisation efforts. Utilising energy-efficient technologies, such as energy-saving devices in order to reduce fuel consumption and GHG emissions can directly contribute to decarbonisation efforts.

Finally, crew training and development are essential components. Focusing on the human element is imperative; companies must provide training on the use of new technologies and optimisation strategies to both crew and shore-based personnel.

What is the primary driver for fleet optimisation investments?

The challenge for shipping companies lies in improving all aspects of their operational efficiency, namely, at sea and ashore, as well as the workflow aboard ships and in offices, training, motivation, proactiveness, etc.

However, the upgraded infrastructure of information technology can empower the digitalisation of shipping operations.

What technologies is your company implementing to optimise its fleet? How challenging is it to integrate the latest technological developments with the human element?

Our company assesses and analyses certain technologies, focusing on data acquisition and analytics systems. Reliable data acquisition is the most critical parameter for further investment in data analytics, enabling the adoption of advanced technologies such as AI and machine learning. These tools can be used to analyse vast amounts of data to provide insights into optimising operations, maintenance, and energy use. Other data analysis tools involve advanced weather routing software, which can optimise voyage planning and fuel consumption. At the same time, real-time systems monitoring machinery and hull conditions can enable predictive maintenance and operational efficiency.

The integration of these technologies with the human element is crucial but can be challenging. However, further consideration, continuous monitoring, and a closed-loop process are essential during the initial stages of new technology implementation.

Do you believe that larger companies have an advantage in implementing fleet optimisation strategies?

Efforts to optimise the efficiency of a company's operations are always a matter of concern. This challenge becomes greater for larger companies, and management must carefully consider the new IT environment and its potential role.

Focusing on the human element is imperative; companies must provide training on the use of new technologies and optimisation strategies to both crew and shore-based personnel.

How can shipping capitalise on AI? Are there any specific applications particularly relevant to fleet optimisation?

Undoubtedly, Artificial Intelligence and machine learning techniques have been widely used in other industries for many years but have only recently been introduced to shipping.

AI can revolutionise fleet optimisation through predictive analytics, automated decision-making, and enhancing operational efficiency. Specific applications include, among others, predictive maintenance, route optimisation, and automated energy efficiency management.

How efficient and safe is the interoperability of the new digital platforms for monitoring ship performance, ensuring compliance, and facilitating reporting?

AI models and techniques are like a black box. Output information is highly dependent on input data and information quality and reliability. The interoperability of new digital platforms for monitoring ship performance is critical for ensuring compliance, facilitating reporting, and enhancing safety. Therefore, ensuring these platforms are robust, secure, and user-friendly is paramount for their efficiency and effectiveness.

What, in your view, is the future of connectivity and telecommunications in the shipping industry?

The future likely holds enhanced satellite connectivity, enabling real-time data exchange between ships and shore-based operations, improved crew welfare through better internet access, and the integration of IoT devices. The latter will facilitate comprehensive monitoring and the management of ship operations and maintenance. Our company is proactively staying on top of the latest connectivity and telecom technologies.

Vasileios G. Petousis advocates the prioritisation of environmental sustainability by all companies, emphasising that they can achieve operational excellence while simultaneously reducing their environmental impact.

SUCCESS IN FLEET OPTIMISATION DEPENDS ON ORGANISATIONAL CULTURE, LEADERSHIP, AND VISION

by **Vasileios G. Petousis**,
Energy & Sustainability Manager
at Seanergy Maritime Holdings Corp.

What are the practical steps involved in a company's fleet optimisation?

Fleet optimisation within the shipping sector is a multifaceted endeavour that demands the strategic alignment of operational precision, technological innovation, and a commitment to environmental excellence. Across various shipping companies, this approach epitomises a holistic strategy focused on maintaining profitability over time while also responsibly following global sustainability goals. From the perspective of shipowners, the crux of fleet optimisation strategies lies in route planning and leveraging advanced analytics and meteorological insights to define the most economically viable and ecologically prudent pathways. Simultaneously, substantial investments in state-of-the-art fuel-efficient technologies, including energy-saving devices, hull and underwater cleaning enhancements, and propulsion system refinement, are of paramount importance.

Adherence to rigorous and proactive maintenance schedules and careful performance monitoring are also crucial for maintaining optimal vessel efficiency and meeting environmental mandates. That includes improving cargo handling to speed up port turnarounds and reduce fuel consumption. Additionally, investments in sustainable propulsion technologies, like alternative marine fuels, demonstrate a commitment to revolutionising maritime propulsion for existing vessels. This initiative seeks to demonstrate the safety and viability of Sustainable Alternative Fuels (SAFs) in seaborne transportation, with a particular emphasis on hydrogen as the primary energy source.

To support these efforts, initiatives such as crew training underscore the significance of cultivating a culture of energy consciousness and ensuring regulatory compliance throughout operations. Furthermore, strict adherence to regulatory standards and goals, such as the IMO's 'Initial 2023 Strategy', including the Energy Efficiency Existing Ship Index (EEXI) and Carbon Intensity Indicator (CII), as well as EU's 'Fit to 55 Strategy' (FuelEu Initiative), demonstrates a proactive approach to environmental compliance and sustainability. Collaborative partnerships such as active participation in the World Maritime Forum's Getting to Zero Coalition and adherence to principles such as the Poseidon Principles demonstrate the determination of industry stakeholders to drive innovation and accelerate the shift to a carbon-neutral future.

It is crucial that everyone in the company understands and fully commits to these objectives. Setting up effective communication channels helps convey these goals to onboard personnel, encouraging a culture of shared responsibility and dedication to achieving efficiency and sustainability. Additionally, continuously improving procedures and fostering cooperation across all organisational levels are essential to achieving these goals.

What is the primary driver for fleet optimisation investments?

Staying relevant, competitive, and sustainable in a changing global market is the primary driver for fleet optimisation investments in the shipping industry. Shipowners are increasingly recognising the interconnectedness between operational efficiency, cost reduction, and environmental responsibility. As previously mentioned, when companies invest strategically in new technologies and sustainable practices to improve fleet performance, they can become more flexible in operations, use less fuel, and emit fewer GHGs. This helps them boost profits and stay competitive in the market.

What technologies is your company implementing to optimise its fleet? How challenging is it to integrate the latest technological developments with the human element?

Seanergy Maritime is at the forefront of fleet optimisation, leveraging cutting-edge technologies to enhance operational efficiency and sustainability. One of our award-winning practices is the proactive implementation of AI sensors installed onboard vessels, continuously collecting vessel data, which are transmitted to the cloud in real time and allow for minute-by-minute monitoring of onboard operations. Seanergy collaborates with specialised firms that use advanced analytics to get useful insights from the data.

Moreover, Seanergy has pioneered innovative approaches to ship reporting, engaging successfully with its crew members in the pro-

cess to ensure comprehensive data collection. The company has established a dedicated sustainability department focused on optimising vessel performance and reducing environmental impact.
Notably, the company has a track record of early adoption, as evidenced by the installation of flowmeters and torque meters onboard vessels as early as 2017.
By staying ahead of the curve, Seanergy demonstrates its proactive approach to adopting new technologies and solutions. It is the first Greek-based shipping company to accomplish a strategic partnership with the EU-funded SAFeCRAFT Project Consortium, a breakthrough initiative concerning the utilisation of alternative fuels. Safecraft aims to demonstrate the safety and viability of Sustainable Alternative Fuels (SAFs) in seaborne transportation, accelerating the adoption of SAF technologies. Seanergy's participation in the SAFeCRAFT Project Consortium highlights its commitment to exploring sustainable propulsion systems, including hydrogen technology.
Under Safecraft, Seanergy will provide one of its existing conventionally fueled Capesize vessels as a demonstration vessel, which will be retrofitted to utilise hydrogen (H_2) as the primary energy source for electric power generation. This system is expected to cover a portion of the vessel's propulsion requirements and, therefore, reduce reliance on conventional fuels.
Despite the challenges of integrating the latest technological developments with the human element, Seanergy places emphasis on adaptability and readiness. Close collaboration between departments within the company and onboard personnel ensures the seamless integration of new technologies into daily operations. By fostering a culture of innovation and continuous improvement, Seanergy strives to optimise its fleet while prioritising sustainability and operational excellence.

Do you believe that larger companies have an advantage in implementing fleet optimisation strategies?

Based on our experience from pioneering the establishment of a Sustainability Committee as well as the creation of an Energy and Sustainability Department, we have concluded that, despite larger companies' advantage of scale, which often translates into increased financial resources and economies of scale, success in fleet optimisation is not solely determined by company size.
Larger companies can invest in advanced technologies and initiatives to improve efficiency and reduce their environmental impact. However, smaller companies can also optimise their fleets effectively by focusing on specific markets, making quick decisions, and promoting innovation. With sustainability becoming more important in the maritime industry, all companies need to prioritise environmental responsibility and use technologies that reduce fuel use and GHG emissions.
Success in fleet optimisation depends on organisational culture, leadership vision, and a strong commitment to sustainability. By promoting a culture of environmental stewardship and investing in innovative technologies that support global sustainability goals, companies can excel operationally while reducing their environmental impact.

How can shipping capitalise on AI? Are there any specific applications particularly relevant to fleet optimisation?

Using Artificial Intelligence (AI) in shipping operations offers many ways to boost efficiency and optimise fleet performance. One great use of AI is predictive maintenance. By analysing data from sensors and machinery, AI can predict equipment issues before they happen, allowing for proactive maintenance and less downtime.
Another key benefit is route optimisation. AI can process large amounts of data on shipping routes, weather, sea conditions, and fuel prices to find the best routes for ships, thus reducing fuel use, cutting costs, and lessening their environmental impact.
AI can also improve cargo handling by optimising cargo loading to maximise stability and reduce time spent in ports. By analysing past and real-time data, AI can streamline loading and unloading, making operations more efficient.
Finally, AI-driven analytics can offer insights into market trends and demand patterns. Shipping companies can use this data to plan vessel deployment, schedule cargo, and make strategic decisions that improve efficiency and competitiveness.
However, it's important to remember that AI lacks human critical thinking skills, which are vital in shipping. While AI can enhance operations, human supervision remains crucial for safety and effective decision-making.

How efficient and safe is the interoperability of the new digital platforms for monitoring ship performance, ensuring compliance, and facilitating reporting?

New digital platforms that monitor ship performance ensure compliance, and facilitate reporting have great potential to improve efficiency and safety in the maritime industry. These platforms have the potential to streamline operations, improve data accuracy, and promote real-time decision-making. However, the efficiency and safety of interoperability depend on various factors, including data integrity, cybersecurity measures, regulatory compliance, and industry standards.
Efficiency in interoperability is achieved when digital platforms seamlessly exchange data and informa-

It's important to remember that AI lacks human critical thinking skills, which are vital in shipping. While AI can enhance operations, human supervision remains crucial for safety and effective decision-making.

tion across different systems and stakeholders. By enabling integrated workflows and data sharing, interoperable platforms can reduce the duplication of efforts, enhance communication between onboard and onshore personnel, and facilitate faster decision-making processes. Moreover, interoperability allows for the aggregation of data from multiple sources, providing a comprehensive view of vessel performance and compliance status.

Safety is crucial in ensuring the reliability of interoperable digital platforms. Accurate and reliable data is essential for safe operations, as decisions based on incorrect information can jeopardise vessel safety and environmental protection. Therefore, robust data validation and quality assurance processes are essential to verify the accuracy and reliability of the data exchanged between digital platforms.

Cybersecurity measures play a crucial role in safeguarding the interoperability of digital platforms against potential cyber threats and unauthorised access. Interconnected systems and data exchanges increase the attack surface and vulnerability to cyberattacks, highlighting the importance of implementing robust cybersecurity measures. Encryption, access controls, and continuous monitoring are essential to mitigating cybersecurity risks and protecting the confidentiality, integrity, and availability of data shared between platforms.

Furthermore, regulatory compliance is integral to ensuring the safety and legality of interoperable digital platforms. Adherence to regulatory standards, such as the IMO's guidelines on data exchange and cybersecurity for ships, ensures that digital platforms meet stringent safety and compliance requirements. Compliance with these frameworks enhances the platforms' reliability and trustworthiness.

What, in your view, is the future of connectivity and telecommunications in the shipping industry?

The future of connectivity and telecommunication in the shipping industry is set to undergo significant transformation. Existing technologies like High Throughput Satellites (HTS), such as Inmarsat's Fleet Xpress, are already revolutionising onboard connectivity by providing high-speed broadband services to ships globally. Additionally, Low Earth Orbit (LEO) Constellations like SpaceX's Starlink and OneWeb are offering low-latency connectivity, facilitating applications such as video conferencing and remote monitoring of vessel performance. These advancements ensure seamless communication even in remote oceanic areas, enhancing safety and operational efficiency.

Moreover, the implementation of 5G technology onboard ships will further propel maritime connectivity forward, enabling gigabit speeds and near-zero latency. This enables applications like augmented reality to diagnose engine anomalies and optimise loading sequences in smart ports, unlocking new levels of efficiency and innovation within the industry.

Internet of Things (IoT) devices play a crucial role in monitoring ship performance and ensuring safety. By providing real-time data on factors like corrosion and stress; these devices enable predictive maintenance algorithms to schedule repairs proactively, transforming ships into smart, data-driven vessels and enhancing operational reliability.

Blockchain technology is also poised to revolutionise maritime transactions by offering transparency and security, safeguarding against fraud, and ensuring compliance. By securely documenting transactions and verifying sustainability certifications, blockchain technology fosters trust and accountability across the supply chain.

Evi Politi highlights the significance of the human element throughout fleet optimisation efforts and believes the future of connectivity in the shipping industry lies in harnessing data, expanding infrastructure, and leveraging technological innovations.

DECARBONISATION AND DIGITALISATION GO HAND IN HAND

by **Evi Politi**,
R&D Director
at Danaos Shipping Co. Ltd

What are the practical steps involved in a company's fleet optimisation?

The first step is to decide on the potential vessels to undergo a retrofit by considering specific criteria such as vessel age, charter party agreement, vessel performance, CII rating, etc. Subsequently, a preliminary study is conducted to select vessel-specific measures from a wide array of energy efficiency improvement solutions available in the market. Upon concluding on a narrow set of options, a more thorough analysis is carried out, including a feasibility study, CFD, model tests, and a cost-benefit analysis.

The second step is to closely monitor vessel performance after retrofitting. The monitoring of carbon intensity through advanced performance monitoring tools is of top priority to avoid paying penalties corresponding to the vessel's compliance deficit, assess the actual benefit of the investment, and draw up our future strategy.

Achieving the maximum engagement of our people in this process is of paramount importance. To this end, we invest in continuous training to cultivate the prioritisation of performance evaluation, to build awareness of these retrofits' necessity and their expected outcome, and to highlight their direct correlation with the company's sustainable development strategy.

The last step involves operations optimisation, which implies close cooperation with our clients on a transparent data-sharing basis. This cooperation aims to optimise the vessel's trade route through advanced sea routing software and sophisticated leg analysis methodologies, which constitute cutting-edge digital tools, such as our WAVES data analytics platform. Apart from speed optimisation, factors like the proper performance evaluation of vessel trimming and hull cleaning intervals are critical parameters in the process.

What is the primary driver for fleet optimisation investments?

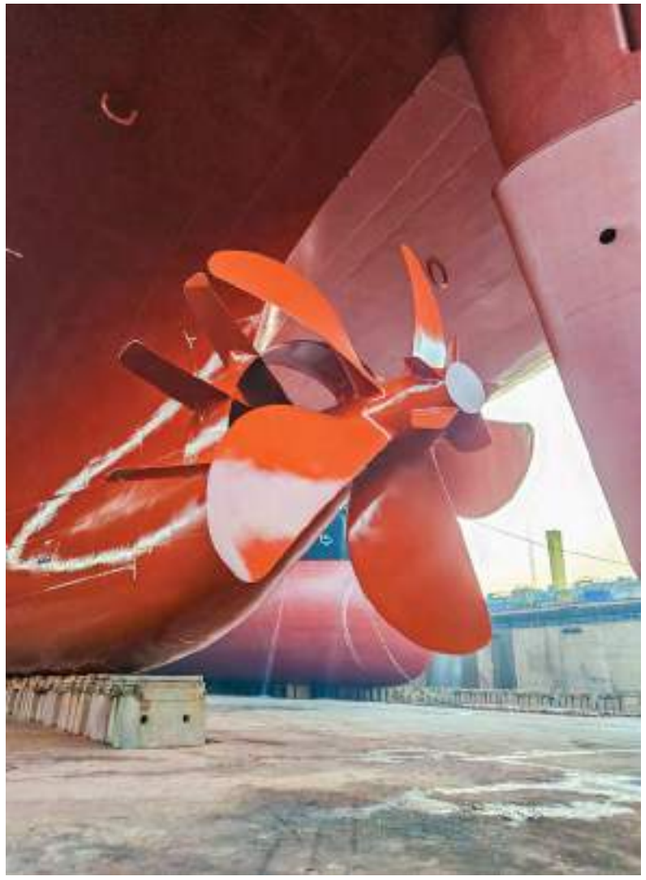
Our main drivers are our ESG commitments relating to our decarbonisation strategy articulated in our Low Carbon Transition Plan (LCTP), together with our mission to keep a competitive edge as the preferred tonnage providers for our clients. Danaos' policies aiming to achieve our environmental goals are articulated in the LCTP in a transparent and structured way. The LCTP addresses the IMO targets complying with the International Energy Agency's Sustainable Development Scenario (IEA SDS), which strives to meet the stricter Paris Agreement 1.5° C goal.

Our decarbonisation strategy, as reflected in our ESG commitments, is inherent to our efforts to improve our fleet's CII rating and ensure optimum efficiency and a low carbon footprint so that Danaos remains the preferred choice within the industry.

What technologies is your company implementing to optimise its fleet? How challenging is it to integrate the latest technological developments with the human element?

Looking to the long-term future, Danaos has adopted a strategy of divesting from older technology vessels and acquiring new ones with advanced environmental features. The company has set standards for newbuildings, prioritising vessels with ECO designs, methanol-ready capabilities, and cold ironing plants. Danaos already has fourteen green newbuildings under construction, scheduled for delivery between 2024 and 2027. All fourteen of our newbuildings constructed in Korea and China will be methanol-ready, while two of them will also hold an ammonia-ready notation.

Retrofitting our existing fleet to enable the use of alternative fuels is also an option we are investigating and prepar-



ing to adopt as soon as green fuels become available, and such an investment makes sense. Additionally, we recognise the potential of biofuel as a short-term solution to lower GHG emissions and consider its technological readiness and near-term availability. Therefore, we actively participate in our charterers' campaigns, supplying biofuel blends with a sustainability certification to our vessels.

Meanwhile, we have invested in the implementation of numerous energy efficiency measures onboard our existing fleet. These measures include, among others, propulsion improvement, propeller retrofits, pre and post-swirl devices, full blasting and top-quality low friction paint application, bulbous bow retrofits, trim optimisation modules, navigation upgrades, main engine tunings, and other energy-saving measures such as VFDs and Led lights.

Integrating these developments with the human factor is rather challenging. All the above retrofits consist of complex processes that involve innovative technologies coupled with skilful engineering. The human element is the crucial factor in these processes.

Ships have been transformed into floating factories. Therefore, crew competency and training, the establishment of a procedures and reporting framework, and high safety standards for occupational health play a crucial role in ensuring that retrofitting is safe and effective for ship operators.

Intensive training, improvement of local ergonomics, digitalisation, and IoT can assist in streamlining all aspects of the retrofit process and ensure effective and safe implementation on board.

Do you believe that larger companies have an advantage in implementing fleet optimisation strategies?

Larger companies have a higher turnover, a more diversified customer portfolio, and, of course, the advantage of economies of scale when it comes to bulk retrofits, which all ensure a higher level of flexibility and lower risk in implementing their optimisation strategies.

In addition, larger companies have better access to resources and a bigger budget to allocate a department to engage in the entire fleet optimisation process holistically, from the initial stage of research on cutting-edge technologies and alternative fuels up to the post-retrofit stage of performance analysis and investment assessment.

How can shipping capitalise on AI? Are there any specific applications particularly relevant to fleet optimisation?

AI has great potential in streamlining shipping operations and increasing efficiency, safety, and sustainability. Its role in mitigating risks and assisting the decision-making process can be transformative.

The booming of the SatCom market, especially Low Earth Orbit Solutions, will revolutionise maritime connectivity. High-throughput satellites will provide faster and more reliable communication while supporting real-time navigation, weather updates, and crew welfare.

How efficient and safe is the interoperability of the new digital platforms for monitoring ship performance, ensuring compliance, and facilitating reporting?

With 12 years of experience in IoT and online data analytics, having managed to minimise data loss to percentages lower than 1% and ensure high data stability, we observe that there are sensors and equipment with more stable and reliable performance compared to others, such as the speed log. For the latter, alternative ways have been devised to enhance the accuracy of the respective metrics.

A skilled engineering team can encode helpful information, key performance indicators (KPIs), and trends produced by the digital ship performance monitoring tools. Undoubtedly, the use of data analytics to assess vessel performance is not only a valuable tool that provides clear and deep insights but is also crucial in the decision-making process.

Shipping companies must steel themselves to effectively address the strict reporting requirements and compliance measures pertinent to the wave of new regulations and directives, such as the EU ETS. Considering the demanding and elaborate nature of these requirements, the use of digital tools and auto-generated reports with embedded checkers is the only way to go.

What, in your view, is the future of connectivity and telecommunications in the shipping industry?

The booming of the SatCom market, especially Low Earth Orbit Solutions, will revolutionise maritime connectivity. High-throughput satellites will provide faster and more reliable communication while supporting real-time navigation, weather updates, and crew welfare. In summary, the future of connectivity in the shipping industry lies in harnessing data, expanding infrastructure, and leveraging technological innovations. As vessels become smarter and more connected, the industry will continue to evolve, enhancing safety, efficiency, and sustainability at sea.

There is great scope for AI applications in the shipping industry via automated processing and real-time analytics, ranging from performance monitoring and forecasting to route optimisation, safety and security, and predictive maintenance. Simultaneously, there is a plethora of applications related to the entire supply chain, including logistics optimisation, port operations and cargo management.

As with every new technology, AI has significant advantages. However, there are also certain challenges to be addressed for AI to be successfully integrated into shipping operations, such as costs, cybersecurity, credibility, training, procedural issues, and ethical considerations.

George Stroumpoulis discusses the need for a proactive and data-driven approach to fleet optimisation and the current shift among both large and small companies towards adopting fleet optimisation models.

SHIPPING CAN LEVERAGE AI TO REVOLUTIONISE FLEET OPTIMISATION

by **George Stroumpoulis**,
Environmental & Energy Performance Manager
at Prime Marine

What are the practical steps involved in a company's fleet optimisation?

Fleet optimisation in today's maritime industry requires a proactive and data-driven approach facilitated by the integration of automated systems and technological advancements. Efficient hull performance monitoring, coupled with strategic scheduling of hull and propeller cleaning, is a necessary measure for achieving significant fuel savings. Additionally, the acquisition and analysis of main engine and auxiliary machinery data enable precise maintenance planning and optimal operational efficiency.

The implementation of advanced flowmeters on vessel engines enhances the accuracy of fuel consumption reporting, ensuring compliance with the stringent decarbonisation regulations and facilitating precise emissions monitoring.

Automated data collection extends its benefits to cargo operations, particularly in discharging processes, where fuel savings and machinery performance optimisation are realised through comprehensive parameter monitoring.

One of the most significant applications lies in route optimisation and voyage planning, supported by real-time weather data. By simulating various voyage scenarios and adjusting parameters such as speed and consumption, vessel operators can achieve substantial fuel savings while also ensuring safe navigation by avoiding adverse weather conditions.

What is the primary driver for fleet optimisation investments?

The primary driver of investments in fleet optimisation is the maritime industry's commitment to reducing carbon emissions and meeting the ambitious environmental targets set forth by the International Maritime Organisation (IMO) and the European Union. With the IMO's goal of achieving a 70% reduction in shipping emissions by 2040, the adoption of short-term measures like the Energy Efficiency Existing Ship Index (EEXI) and the Carbon Intensity Indicator (CII) has become essential.

The CII, calculated annually and tailored to each vessel's trade and operational profile, serves as a key measure for monitoring and improving fleet-wide fuel efficiency. Given the central role of fuel consumption in determining CII scores, automated data applications geared toward reducing fuel usage are pivotal in fleet optimisation efforts.

Furthermore, the shipping industry's involvement in the European Union's emission trading scheme and the Fuel EU's ambitious targets of achieving an 80% reduction of GHG emissions by 2050, underscores the importance of driving sustainability initiatives such as biofue ls.

What technologies is your company implementing to optimise its fleet? How challenging is it to integrate the latest technological developments with the human element?

Our company is actively pursuing strategies to address GHG emissions and enhance operational efficiency within our fleet. While alternative fuels, wind propulsion, and air lubrication systems are widely discussed solutions for decarbonising the shipping industry, their maturity and viability remain ongoing concerns. Instead, we choose to focus on practical and proven technologies, such as energy-saving devices like hull appendages and advanced antifouling paints, which offer tangible returns on investment.

Automated data acquisition systems enable informed decision-making in optimising efficiency and preventing equipment failures. Crew members must prioritise high-quality data reporting, address sensor malfunctions promptly, and focus on core onboard tasks while being supported by efficient data systems and training resources.

By embracing practical technologies and fostering a culture of data-driven decision-making, we aim to enhance fleet performance while minimising environmental impact and optimising crew operations.

The challenge of integrating the latest technological advancements with the human element lies in fostering awareness of the tangible benefits these technologies offer and in strategically prioritising their implementation.

Do you believe that larger companies have an advantage in implementing fleet optimisation strategies?

While major European and Asian shipping companies are at the forefront of implementing fleet optimisation strategies, smaller companies, including Greek shipowners, have historically leaned towards traditional practices and are hesitant to embrace riskier endeavours. However, there has been a noticeable shift in recent years, with an increasing interest observed among both larger and smaller companies in adopting modern fleet optimisation strategies.

Collaboration among all stakeholders, irrespective of company size, is paramount for accelerating progress in this domain, amplifying the effects, and maximising the benefits derived from fleet optimisation efforts. Greece, with its rich maritime heritage, has the potential to emerge as a prominent shipping technology hub. However, realising this potential necessitates concerted investments, initiatives, and the development of a supportive regulatory framework that caters to the needs of both larger and smaller companies.

How can shipping capitalise on AI? Are there any specific applications particularly relevant to fleet optimisation?

Shipping can leverage AI to revolutionise fleet optimisation through proactive, data-driven approaches. Integrating AI with automated systems enables efficient hull performance monitoring, precise maintenance planning, and accurate fuel consumption reporting.

Route optimisation and voyage planning can also benefit from AI's simulation capabilities, optimising speed and consumption to achieve significant fuel savings while ensuring safe navigation. Furthermore, AI applications can extend to safety enhancement and security hazard prevention, as well as addressing operational anomalies, machinery concerns, and cargo operations.

How efficient and safe is the interoperability of the new digital platforms for monitoring ship performance, ensuring compliance, and facilitating reporting?

The interoperability of new digital platforms for monitoring ship performance, ensuring compliance, and facilitating reporting is critical for enhancing efficiency and safety in maritime operations.

Automated systems ensure efficient hull performance monitoring, precise maintenance planning, and accurate fuel consumption reporting. This not only enhances operational efficiency but also promotes safety by enabling timely maintenance interventions and implementing fuel-saving measures.

Our experience has demonstrated that these platforms consistently provide accurate data, often accompanied by effective analysis. As these platforms continue to evolve over time, they are expected to mature and further optimise their results.

What, in your view, is the future of connectivity and telecommunications in the shipping industry?

While it is true that many companies have made significant strides in addressing connectivity and satellite issues, it is essential to recognise that technology is constantly evolving. Some companies may have already implemented advanced connectivity solutions, but new opportunities are constantly emerging in this rapidly evolving landscape.

For instance, even though current connectivity solutions may be adequate, ongoing advancements in satellite technology, IoT devices, and broadband infrastructure present opportunities for further enhancing communication and data exchange within the maritime sector. Additionally, as the industry continues to embrace data-driven decision-making and smart technologies, new applications and innovations may emerge, further optimising operational efficiency, safety, and collaboration.

Therefore, while some companies may have already addressed connectivity challenges, it is essential to remain vigilant and open to leveraging new technological advancements to stay ahead of the curve and maintain a competitive edge in the industry.

Maria Tsompanoglou discusses the multifaceted approach to fleet optimisation and highlights the potential of digital platforms to streamline decision-making processes and enhance operational efficiency in the shipping industry.

COMMERCIAL COMPETITIVENESS REMAINS THE MAIN DRIVER FOR FLEET OPTIMISATION

by **Maria Tsompanoglou**,
Energy Performance Manager
at Pantheon Tankers Management Ltd.

What are the practical steps involved in a company's fleet optimisation?

The optimisation of any activity commences with the regular and diligent monitoring of its components. For shipping companies, optimisation begins with the collection and analysis of data from the ship, service providers, and manufacturers. Voyage optimisation always requires the assistance of the crew and the input of a weather provider, while the assistance of Office Operators may also be necessary. Practically, fleet optimisation cannot be achieved without data or the necessary tools to analyse said data. Receiving, filtering, analysing, storing, and using data for decision-making is the starting point for fleet optimisation and is a process that applies to all shipping companies. However, optimisation fundamentally starts with the strategic decisions made during the design and construction of a newbuild. When negotiating a newbuild specification contract, shipowners have the opportunity to improve ship design in many ways, both hydrodynamically, with improvements on the hull design, and technologically, by applying performance improvements on systems and machinery. For instance, the readiness of a ship to use alternative fuels for its propulsion and electrical needs is a significant investment. If decided during the negotiation phase with the shipbuilder, it will have a great impact on the environmental performance of the ship throughout its lifetime.

Shipowners also have a large number of technologies at their disposal from which to choose for the performance improvement of their existing ships. The market is swarming with systems that promise to increase propeller efficiency, aid ship propulsion, and decrease energy consumption in various ways, which, more often than not, deliver on their promises.

What is the primary driver for fleet optimisation investments?

Today, more than ever, the regulatory framework on emission reduction in the shipping industry, which has set ever-increasing targets, is compelling ship operators to concentrate their efforts on fuel consumption reduction. For a company to remain commercially attractive and environmentally compliant, it has to invest in new technologically advanced vessels and reduce its existing fleet's environmental footprint by upgrading it with new technologies. Therefore, commercial competitiveness remains the main driver for fleet optimisation, but now in a more sustainable way.

What technologies is your company implementing to optimise its fleet? How challenging is it to integrate the latest technological developments with the human element?

We applied voyage optimisation with weather routing providers as a standard process a long time ago, and we have been using high-frequency data for the hull and machinery performance monitoring since 2017. We also utilise advanced coatings, scrubbers, and biofuels, perform robotic hull cleanings, and are now testing the ultrasound antifouling technology in the hull and propeller. Moreover, we participate in research groups to enhance our knowledge of selected technologies, such as antifouling technologies and carbon capture systems. We continually try to follow the developments of energy-saving technologies because we believe this is the way to sustain our competitiveness and environmental performance.

I expect that the future will bring more groundbreaking developments in shipping's digitalisation.

We have discovered that there is much that can be done in this direction without a prohibitive investment cost. After studying the energy upgrade of our existing fleet very carefully, we initiated the optimisation process by improving the environmental profile of those ships whose specifications and age could guarantee investment payback in a reasonable time. The standard energy upgrade we followed consists of pre-swirl ducts, propeller boss cap fins, and low friction coatings, either simultaneously or in combinations. We then decided on the proper combination of energy-saving devices based on the results of ship-specific Computational Fluid Dynamics (CFD) studies that indicated the energy-saving level of each ship. In some cases, we confirmed the CFD results with dedicated sea trials that were carried out after the retrofitting completion. To our great satisfaction, our fleet retrofitting programme with energy-saving technologies has proven to be an added value, being highly effective throughout the ships' operations since then.
Furthermore, during the last six years, we have renewed our fleet with eco-design vessels constructed in high-quality shipyards. Since 2018, 17 tankers, 6 bulk carriers, and 7 LNG carriers have been delivered, all of which are eco-designs.
Regarding the adaptability of our people, the upgrading of our fleet and our day-to-day office operations is taking place at a pace serving assimilation and adaptation. Crews have been extremely responsive to the use and operation of new technologies, and their training has certainly helped a lot in this direction.
Of course, an adjustment period is necessary, and there may be some resistance to new developments. However, I have personally found that, over time, the human element has proven helpful rather than obstructive in our efforts towards energy efficiency.

Do you believe that larger companies have an advantage in implementing fleet optimisation strategies?

Operational optimisation measures are easy to implement, although they do not deliver the desired result as easily. Weather optimisation systems and low or high-frequency data collection tools are now widely available in the market and are affordable, efficient, and accessible to all companies. In contrast, technological measures usually require demanding project management and high capital expenditure and, therefore, may be more challenging for smaller companies to undertake.
In addition, investing in new constructions with high technological standards requires high capital for both their purchase and maintenance and may not be an option for all companies. In this light, it may be more difficult for companies with smaller fleets, and thus less capital, to make large financial openings and renew or upgrade their fleet to a great extent quickly. Fortunately, there are currently many financing options for new technologies, offering flexibility and serving the needs of a wide range of ship managers.

How can shipping capitalise on AI? Are there any specific applications particularly relevant to fleet optimisation?

AI has many applications in shipping, primarily in the analysis of large amounts of data. As digitisation within the industry develops, the volume of data to be monitored grows, making information management and analysis difficult and demanding. Shipping professionals are familiar with the difficulty of making decisions utilising large amounts of information from different sources. In this context, artificial intelligence plays a primary role.
AI can be applied to automation and real-time analytics, simultaneously analysing various factors to propose the optimum result. Voyage optimisation, risk

mitigation for the crew, condition monitoring, maintenance, and paperwork are just a few areas where AI can thrive.

Fuel consumption optimisation was one of the first fields in which artificial intelligence was employed in shipping. The simultaneous analysis of the various factors affecting fuel consumption, such as weather, fuel quality, hull condition, engine performance, and the ship's commercial commitments, among others, has turned ship performance monitoring from a demanding task into a routine process.

There are many uses of AI in shipping, and they are expected to expand further, especially in fleet optimisation, which is under tremendous commercial and regulatory pressure.

How efficient and safe is the interoperability of the new digital platforms for monitoring ship performance, ensuring compliance, and facilitating reporting?

Combining information from various sources and functionalities into a single platform could be highly efficient. It could be a tool for operators to make the right choice every time. A platform that would combine weather routing algorithms, weather forecasts, fuel consumption, speed performance models, high-frequency performance data, port information, charter party, and other commercial information could be a precious tool for the operator's decision-making, with both performance and safety in mind. In addition, data integration in a single platform could help everyone in the company cooperate more efficiently.

What, in your view, is the future of connectivity and telecommunications in the shipping industry?

I expect that the future will bring more more groundbreaking developments in shipping's digitalisation.Indeed, the shipping industry is undergoing a digital transformation. Shipping companies already use digital tools and technologies to operate more efficiently and achieve their commercial goals and environmental targets. They are embracing the benefits of digital tools and reliable connectivity, which play a significant role in effective and responsible decision-making.

I am convinced that technologies that are currently under development and still in limited use will be established and widely accessible in our industry in less than a decade. Data acquisition systems, which are constantly evolving and being used by an increasing number of companies, have bridged the gap between the ship and the office. Today, there is no analogue or digital signal onboard that cannot be transmitted ashore. What was unimaginable a few decades ago is now available in various functional variants, eliminating the communication gap between the ship and the office.

I am very curious to see the technological developments in maritime connectivity in the coming years, as well as the changes technology will bring to shipping companies and stakeholders' daily operations.

Fabian Fussek elaborates on the new technology developments for fleet optimisation, emphasising that the key to success lies in maintaining a human-centric approach to technology.

BOTH SMALL AND LARGE COMPANIES CAN REALISE THE BENEFITS OF FLEET OPTIMISATION

by **Fabian Fussek**,
Co-Founder & CEO of Kaiko Systems

What are the practical steps involved in a company's fleet optimisation?

When discussing fleet optimisation, the primary focus is on ensuring smooth operations across all vessels. Standardisation plays a crucial role in this endeavour, aiming to maintain the consistency of processes and workflows across the entire fleet. This consistency not only facilitates crew training but also simplifies personnel transfers between vessels.

Additionally, contextualisation is essential to fleet optimisation, with inspections and procedures being tailored to the unique equipment and layout of each vessel. By providing specific guidance in real time, often through mobile apps or digital platforms, crew members can efficiently access the information they need during their duties. Deduplication efforts can also help meet inspection requirements of various regulatory regimes, reducing redundancy and simplifying onboard procedures.

Finally, simplification initiatives aim to streamline tasks and reporting processes, ensuring that crew members can focus their time and effort on meaningful work rather than administrative tasks. Ultimately, fleet optimisation enhances efficiency, safety, and operational effectiveness across the fleet.

What is the primary driver for fleet optimisation investments?

The primary motivation behind fleet optimisation investments lies in achieving several key objectives. Firstly, reducing off-hire or downtime is a significant driver, achieved by minimising onboard incidents and observations or deficiencies reported during third-party inspections. This not only enhances operational efficiency but also contributes to cost savings by maximising vessel uptime.

In addition, improving crew retention emerges as another powerful incentive. Equipping crews with the best tools and resources empowers them, enhances their efficiency, and ultimately boosts job satisfaction. By investing in crew welfare and productivity, companies can reduce turnover rates and create a loyal and skilled workforce.

Additionally, there's a clear aim to relieve the burden on shore-based personnel. Streamlining processes and providing comprehensive tools can reduce administrative tasks, allowing shore teams to focus on higher-value activities. This will not only enhance overall productivity but also enable a more supportive and efficient working environment for both onboard and shore-based personnel.

What technologies is your company developing to optimise fleet operations? How challenging is it to integrate the latest technological developments with the human element?

Our company is at the forefront of developing cutting-edge technologies to optimise fleet operations. One significant advancement is the development of our mobile-first and offline-friendly application tailored for crew members. This app provides seafarers with the necessary procedures and guidance directly on their mobile devices, enabling them to efficiently complete inspection work, collect data, and generate reports regardless of their location onboard the vessel.

In addition, we provide a cloud-based dashboard, allowing access to our system from anywhere in the world via a web browser, which enhances flexibility and real-time monitoring capabilities for both onboard and shore-based personnel. We have also integrated AI verification and analysis throughout our system. This means that data uploaded from vessels undergoes verification and is then subjected to additional analysis, providing valuable insights to support decision-making processes.

However, integrating these technological advancements with the human element poses a challenge. The key lies in ensuring that the technology remains human-centric, designed to support and empower both crews and shore teams. By focusing on addressing the everyday challenges faced by frontline workers, we aim to foster a culture where the adoption and implementation of new technology are welcomed and embraced. Ultimately, our goal is to enhance efficiency, streamline operations, and improve the overall experience for our clients' personnel both at sea and onshore.

Do you believe that larger companies have an advantage in implementing fleet optimisation strategies?

The advantage that larger companies have in implementing fleet optimisation strategies is undeniable. With larger resources, including dedicated personnel or teams focused solely on fleet optimisation, these companies can undertake comprehensive analyses and execute large-scale initiatives efficiently.

However, the size of the company is not the sole determinant of success. More critical than sheer size is the organisational mindset toward optimisation. Regardless of company size, a commitment to identifying and addressing inefficiencies is paramount. Smaller companies may lack the extensive resources of their larger counterparts, but they often benefit from a more agile decision-making process. Changes can be implemented swiftly, and communication tends to be more direct and effective.

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Ultimately, both large and small companies can realise the benefits of fleet optimisation. The key lies in selecting the right technology partner to support the optimisation journey. By leveraging the appropriate technology and fostering a culture of continuous improvement, companies of all sizes can enhance their operations, reduce costs, and improve overall efficiency in the management of their fleets.

How can shipping capitalise on AI? Are there any specific applications particularly relevant to fleet optimisation?

Shipping can harness the potential of Artificial Intelligence (AI) across various facets of fleet optimisation. AI can revolutionise structural inspections by identifying and evaluating areas of coating breakdown or corrosion, thus enhancing accuracy and efficiency. AI systems can analyse inspection results, provide expert interpretation, and recommend appropriate actions, streamlining the decision-making processes.

By analysing large volumes of historical inspection data, AI can proactively identify potential issues or trends, enabling shipping companies to pre-emptively address emerging challenges. AI can also learn from the repetitive actions of crews and shore teams and suggest actions or fully automate tasks to improve efficiency and reduce errors.

Overall, AI presents shipping companies with a range of applications crucial for fleet optimisation, from enhanced inspection capabilities to proactive maintenance strategies and task automation, ultimately enhancing operational efficiency and ensuring the safety and reliability of fleets.

How efficient and safe is the interoperability of the new digital platforms for monitoring ship performance, ensuring compliance, and facilitating reporting?

The efficiency and safety of interoperable digital platforms for monitoring ship performance, ensuring compliance, and facilitating reporting are significantly enhanced with modern, cloud-based systems. These platforms are designed with robust cybersecurity measures, incorporating the latest protocols to mitigate risks effectively. Their compatibility with Application Programming Interfaces (APIs) allows their seamless integration with existing systems, optimising efficiency and data flow.

In contrast, legacy systems often lead to data silos and rely on outdated technology, increasing the risk of downtime or cyber-attacks. Additionally automation features streamline reporting processes, reducing the time required for crews and shore teams to complete administrative tasks. This automation ensures compliance and guarantees that all necessary information is readily available for future reference, saving valuable time for inspection and maintenance activities. Overall, modern digital platforms offer a reliable and secure solution for monitoring ship performance and ensuring regulatory compliance, ultimately enhancing operational efficiency and safety at sea.

What, in your view, is the future of connectivity and telecommunications in the shipping industry?

The future of connectivity and telecommunication in the shipping industry is poised for a significant transformation. We anticipate a shift towards constant connectivity, characterised by low latency and high bandwidth capabilities. Vessels will be empowered to access information and communicate seamlessly, mirroring the experience we have in the office or at home today. This enhanced connectivity will revolutionise onboard operations, enabling real-time data exchange, remote monitoring, and efficient communication between vessels and shore-based teams.

Additionally, the power of Artificial Intelligence (AI) will play a pivotal role onboard, assisting crew members in navigating the complex landscape of overlapping regulatory regimes and associated reporting and inspection requirements. By leveraging AI-driven solutions, crews will be able to streamline compliance efforts, reduce administrative burdens, and enhance overall operational efficiency.

In essence, the future of connectivity and telecommunication in the shipping industry promises to bring in an era of unparalleled connectivity and efficiency, ultimately transforming the way maritime operations are conducted.

PCT IS TRANSFORMING THE CONTAINER TERMINAL OF PIRAEUS PORT INTO A MODEL OF DIGITAL OPERATION

PCT (Piraeus Container Terminal), a subsidiary of COSCO SHIPPING Ports Ltd, has been investing since 2010 in the digital upgrade of the container terminal at Piraeus, improving its safety, speed, efficiency and environmental footprint, for the benefit of all its users.

Piraeus Container Terminal develops and manages the facilities of Piers II and III of the Port of Piraeus, providing loading/unloading and storage services for imported and exported containers, including cargoes that use Piraeus only as a transit station (transshipment cargoes). Through an extensive investment programme, which already amounts to over EUR€ 600 million, PCT has led the Terminal of Piraeus among the top 4 in Europe and, leading in the Mediterranean. Over the past 14 years, PCT has developed and continuously upgrades technological systems and IT applications that have not only contributed determinedly to the upward course of the container terminal but are also the subject of know-how transfer to ports within or outside of Greece.

As part of the digital evolution of the terminal, PCT is planning the implementation of digital services and applications for its employees, partners, customers and all stakeholders included in its supply chain.

Since 2010, PCT has developed and is constantly upgrading the main Terminal Operating System (TOS) with the main objectives being the improved execution time of procedures, maximising the utilisation and performance of available resources as well as further increasing safe operation of the terminal. New features are frequently added to the TOS, to meet specific business needs. Such is the reduction of the distances traveled by a truck as well as real-time information on the condition of internal trucks in order to prevent or restore technical issues, to refuel in time and to monitor the safe movement of vehicles at work sites.

The PCT Truck Monitoring System (TMS) is a technology used to locate, track, and manage PCT's internal vehicles within the terminal. One of the most innovative projects implemented is a pilot programme concerning the installation of a device in internal trucks, to detect symptoms of fatigue or distraction in the drivers of the vehicle, and alert them in time in order to avoid accidents and protect the workers. Within 2024, the company additionally plans to implement an ECO Drive pilot programme on a designated sample of trucks within the container terminal. The function aims to optimise the driving behavior of truck drivers by detecting extreme driving behaviors and alerting the driver of any deviation from environmentally responsible driving. The ultimate goal is to achieve optimal driving behavior while ensuring a reduction in greenhouse gas emissions.

CATOS (Computer Automated Terminal Operating System) is the core application for Operations and container traffic at the Terminal . It is an all-in-one operating system designed and configured to maximise productivity and increase the quality of services that PCT offers to its clients. The system places optimised automation technologies through friendly management environment to achieve the highest competitiveness and productivity of the Terminal allowing the planning of berthing, the allocation of human resources, but also vessel and yard operation respectively. Then, a different implementation of the same system allows the above to be monitored in real time, while finally there are detailed performance reports that contribute to any adaptive changes.

In early 2024, PCT installed the latest version of CATOS, improving specific aspects of its operation and aiming to strengthen the sustainable practices adopted by the organisation. Currently 90 customisation requests are underway from the Company to the system designers signaling the organisation's commitment to further enhance both the productivity as well as sustainable practices it has set in its commitments.

At the same time, PCT HPCS is an electronic platform designed and developed entirely by PCT's IT Department, which interconnects multiple IT systems that collectively comprise the port community. By digitising the services provided to all stakeholders, the Company has increased processing speed, immediate exchange of information (exports, imports, uploads, consolidations, dangerous goods and other statistics), minimising paperwork errors and increased security of transactions. The PCT HPCS plays an important role in promoting sustainable business practices and effective governance through improved operational transparency and efficiency.

The ever-expanding utilisation of Information Technology (IT) and Communication Technologies in PCT is a catalytic factor in the continuous improvement of its operation. In cooperation with PCT Process Excellence Department, PCT IT Department integrates automated and digitised applications into the Company's operating model, simplifying and speeding up processes, further enhancing worker safety, securing transactions and reducing costs and the port's environmental footprint. The continuous investment in digitisation is for PCT an additional competitive advantage and the foundation of the development of Piraeus into a leading, competitive commercial hub in Southeast Europe and the Mediterranean.

ThPA S.A. MORE THAN A PORT

THE GATEWAY TO GROWTH AND OPPORTUNITIES

In the dynamic landscape of the port industry and logistics, ThPA S.A. is the "gateway" to growth and opportunities for the Greek economy and society. With a pivotal role in the transport of international cargo, the Port of Thessaloniki is more than just a port.
The implementation of the development plan and the initiatives of ThPA S.A. are constantly strengthening the role of the Port of Thessaloniki globally, as the multi-gateway intermodal network and logistics solutions provider for the Balkans and the broader Southeast, Central and Eastern European region.

From 2018 to 2023, ThPA S.A. has invested more than €71.3 million to upgrade its equipment, infrastructure and services, creating additional growth prospects for its partners, Thessaloniki and the wider region. The highest container throughput ever recorded at the Port of Thessaloniki in 2023 is another milestone.
Additionally, ThPA S.A. is constantly enhancing its connectivity, offering reliable, cost-efficient and green logistics solutions and intermodal rail services with direct rail connectivity between the Port of Thessaloniki and Bulgaria (Sofia), Serbia (Nis) and the Republic of North Macedonia (Skopje).

Extroversion and international outlook
New synergies are a significant part of the ThPA S.A. strategy and in 2023 two new agreements were signed, one with the port of Gdańsk and another with the port of Ashdod. In addition, with dynamic participation in national and international exhibitions and initiatives to host events in Thessaloniki, such as the 7th "Posidonia Sea Tourism Forum" and the 1st "Southeast Europe Connectivity Forum", ThPA S.A. reinforces the role of the Port of Thessaloniki as a port of international importance, contributing to the country's extroversion. In the fields of logistics, tourism and the development of green practices, ThPA S.A. participates in innovation projects creating a significant socio-economic impact in the Balkan and the broader Southeast, Central and Eastern European region.

Dynamic contribution of Cruise to the tourism development of Thessaloniki
The significant growth of cruise in Thessaloniki and the wider region highlights a destination with a unique archaeological, historical, cultural and gastronomic identity. The continuous upgrading of ThPA S.A.'s services and infrastructure solidifies the trust of the cruise companies, which include Thessaloniki in their schedule. In 2023 ThPA S.A. invested in the creation of the new Cruise Terminal "Alexander the Great", with the capacity to serve more than 6,000 passengers and crews of 2 cruise ships simultaneously. The Port of Thessaloniki is the first port in Greece that has adopted the automated Schengen Entry/Exit System (EES) and the European Travel Information and Authorization System (ETIAS).

POLISH PORTS: THE NEXT STEPS FOR A CRITICAL PILLAR OF EUROPEAN INTERMODAL TRADE

A field report by Manos Charitos

The role of geopolitical developments in reshaping global maritime trade in the last two years is indisputable. The reshaping of global trade flows is undeniably affecting ports, changing the volume of cargo reaching them and presenting opportunities and challenges for supply chains.

Poland has emerged as one of the countries seizing the opportunities arising from the reorganisation of trade routes. The country's leading ports are experiencing record freight transits while the Polish economy continues to grow.

Naftika Chronika, at the invitation of the Polish Embassy in Greece, visited Poland's four most significant ports. Additionally, the magazine's editorial team visited the Polish Investment & Trade Agency, which is responsible for attracting domestic and international investments. A further highlight of the team's visit to Poland was its interview with Arkadiusz Marchewka, Deputy Minister of Infrastructure in Poland responsible for the Maritime Economy, Water Management, and Inland Navigation.

The team's visit to Poland began at the Polish Investment & Trade Agency (PAIH) in Warsaw, where they were briefed on the large volumes of cargo transit in Poland's four main ports, namely Gdańsk, Gdynia, and the Szczecin-Świnoujście port complex. During the briefing, particular emphasis was placed on the great potential of Polish ports and the critical projects aimed at their development and improvement of the current infrastructure.

The role of ports is particularly crucial for the booming Polish economy. Notably, in 2021, the transport sector generated around 6% of the Polish GDP and employed approximately 1 million people, explaining the Agency's interest in the Polish ports' financial results and prospects.

The PAIH's main objective is to attract domestic and international capital for infrastructure development in Poland. It also supports Polish investors in their efforts to expand their activities in international markets; for this reason, it maintains offices in many countries worldwide.

Regarding the projects under evaluation within Poland, the most attractive investments come from the USA, Belarus, China, and Poland.

After a short tour of Warsaw, Naftika Chronika visited the Polish Ministry of Infrastructure, where the interview with Arkadiusz Marchewka took place. The Deputy Minister put his cards on the table regarding the government's priorities in the shipping, transportation, and environmental sectors.

The Naftika Chronika editorial team's next stop - after a two-hour rail journey across Poland - was Gdańsk, the country's largest port, where they met with representatives of the Port Authority, as well as representatives of the Polish Register of Shipping (PRS) and the Bota Group, at the top of the port's 61-metre lighthouse. In its presentation, the PRS focused on its scope of activities, future plans, and prospects. It also highlighted its ambitions to expand into the Greek market. Currently, the Polish registry has been chosen by Greek-managed vessels with a cumulative capacity of 420,000 gt. For its part, the Bota Group representatives elaborated on the Group's activities in the port of Gdansk. They also spoke about the comprehensive solutions it provides to the maritime and offshore markets based on customer needs. Bota specialises in propulsion, supplementing its offer with power hydraulics, marine engines, automation, and design services.

The Gdank Port Authority's presentation was titled "Europe's fastest growing port". The port is ranked ninth in Europe, second in the Baltic Sea, and first in the Baltic in terms of containers handled.

However, this does not mean that the port focuses exclusively on container handling. Instead, it is a multipurpose deepwater port, and the cargo it handles includes containers, cars, oil, other fuels, dry bulk, and chemicals. At the same time, it also aspires to expand into the LNG market, with work to install an FSRU at the port already underway.

Particular emphasis has also been placed on inland supply chains to and from the Port of Gdansk, focusing specifically on road transport. Over 2,500 trucks depart daily from the port, which is indeed a major cargo gateway to Northern Europe.

The port's development course over the last ten years has been remarkable, with its total cargo handling capacity reaching 81 million tonnes in 2023, an increase of 167% compared with 2013. This growth becomes particularly evident when compared to 2021, demonstrating the significant impact of the Russian invasion of Ukraine on European supply chains. In 2023, 47% of the cargo at the port fell under the category of liquid cargo, while 28% were containers, 17% coal, 4% grains, and 4% other bulk cargo.

The next steps for the Port of Gdańsk include Baltic Hub 3, the new container terminal, which will add an extra 1.5 million TEU annual capacity, further improving the Port of Gdańsk infrastructure through an implementation analysis of the low-emission OPS system for the sustainable development of the TEN-T network, as well as an FSRU terminal with an annual regasification capacity of 6.1 billion m^3 annually that is to be completed by 2028. In addition, further investments in land-based supply chains, with a focus on railways, will play a significant role.

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The meetings were followed by a cruise inside the port, and the various terminals and other port infrastructure, such as slipways, were presented to the Naftika Chronika team.

A few hours later, presentations were made by the competent Port Authority in the buildings of the Gdynia Port concerning the port's size and activities. A high-ranking executive of the Nauta shipbuilding company, which operates in ship repairs and conversions, also participated in the discussions of the meeting that followed. In recent years, Nauta has significantly upgraded its production facilities and can now accommodate larger vessels than before. Present berthing facilities included one wharf and three floating docks.

Cargo handling in the Port of Gdynia increased by 50.5% from 2016 to 2023. Specifically, total cargo handling reached 29.39 million tonnes in 2023, which represents a 5.2% increase when compared to the cargo volume in 2022, which in turn increased by 8.2% compared to 2021. Once again, the increases recorded in the past few years reflect, to some extent, the redesign of the global flows.

As with the Port of Gdansk, the Port of Gdynia handles a wide range of cargoes, making it another multipurpose port. Its cargo composition for 2023 consisted of containers (51%), grains (23%), fuel (12%), coal and coke (10%), other bulk (3%), and timber (1%). Therefore, the port of Gdynia seems to specialise in dry cargo, although it can also handle liquid cargo.

The Port of Gdynia's development plans include deepening the approach fairway to 17 meters and the port's internal waters to 16 meters, reconstructing the outer port area to facilitate road and rail access, expanding the Liquid Fuel Handling Station, modernising the grain terminal, and expanding warehouse and storage facilities.

After the presentations, the editorial team was taken on a tour of the port's facilities and had the opportunity to observe the multitude of Gdynia Port's different terminals.

The last day of the trip was dedicated to the port complex of Szczecin-Świnoujście in the southwesternmost part of Poland. This complex consists of two ports under a common Port Authority.

The port of Szczecin handles both general cargo (including containers and steel products) and project cargo, as well as dry and liquid bulk. The two ports load and store food and agricultural products.

A ferry terminal is situated in the southern part of the Świnoujście seaport, which is a leader in providing ferry services to and from Scandinavia. Additionally, dry, liquid, bulk, and general cargo terminals operate at the port of Świnoujście, handling cargo such as coal, ore, grain, fuel oil, etc. In contrast, the northern part of the port (outer port) provides a modern infrastructure for LNG vessels. In 2023, the port complex handled 35.3 million tonnes of cargo, ranking it second in Poland and sixth in the Baltic Sea.

The ports have been implementing a comprehensive 3-billion investment programme that includes, among other projects, the modernisation of the LNG terminal to export and bunker vessels, the modernisation of the ferry terminal to handle intermodal transport, and the construction of an offshore terminal and an outer container terminal.

Finally, during the visit to the Szczecin-Świnoujście port complex, the Naftika Chronika editorial team took part in a cruise during which it had the opportunity to talk with various port operators and other involved parties, such as Gryfia shipyard representatives. Gryfia operates in the field of vessel repairs and reconstructions. It has three floating docks, the largest of which has a maximum lifting capacity of 15,000 tonnes.

Greek shipping companies have long been an integral part of the global maritime industry, with their reach and influence extending far beyond the shores of the Aegean Sea.

NAVIGATING SUCCESS

HOW THE NYSE AND THE US CAPITAL MARKETS HELP STEER GREEK SHIPPING COMPANIES TO PROSPERITY

by **Cassandra Seier**,
Head of International Capital Markets
at New York Stock Exchange

According to the Union of Greek Shipowners, Greece is the leading shipping nation worldwide, with over 20% of the global fleet and almost 60% of Europe's fleet. This strong presence expands across shipping sectors, including container ships, tankers, and dry bulk carriers.

Given the sizeable impact of this group, the New York Stock Exchange (NYSE) is proud to be the listing home for one dozen Greek shipping companies, which have a total market value of over $5 billion.

Our Greek shipping companies listed on the NYSE include new issuers we welcomed to the stock market recently, such as Okeanis Eco Tankers (NYSE: ECO), as well as some of the oldest listed Greek shipping companies in the world, including Tsakos Energy Navigation (NYSE: TNP), which recently celebrated 20 years of being listed on the NYSE and 30 years as a publicly-traded company.

This long-term relationship makes a great deal of sense. The NYSE is the epicentre of the US capital markets and home to some of the most prestigious and iconic companies globally. These markets are the most liquid in the world, offering issuers the broadest base of investors and deepest pools of liquidity. With this pool of capital, Greek businesses can continue to grow, innovate, and re-invest in their local economies.

The NYSE is also the only global stock exchange with a trading model that combines cutting-edge technology with the guidance of experienced floor traders. The traders on our floor are much like the captain on the bridge of a ship, providing important oversight that seeks to maintain smooth sailing, no matter how choppy the water.

Overall, the NYSE has over thirty marine transport companies listed on our exchange from the Mediterranean and beyond, with companies hailing from the US, Greece, Norway, the UK, Israel, Bermuda, and Singapore. We understand first-hand the value of this industry, which is the backbone of global trade.

Rooted in deep tradition and prestige, the NYSE and the Greek shipping industry both share the common goal of continued innovation and modernisation while respecting our longstanding heritage. We are both strong communities with a global reach, which makes it an easy choice to work together.

Indeed, the Greek shipping industry directly impacts the flow of goods around the world, influencing trade and supply chains. The sector has also remained incredibly resilient, weathering downturns in the face of major macro events, including the COVID-19 pandemic, geopolitical tensions, tough fundraising environments, and global supply chain issues.

For 19 years, the NYSE has hosted Greek American Issuer Day at our iconic building in downtown Manhattan to celebrate Greece's significant contributions to the US economy and reinforce the NYSE's commitment to the Greek business community here.

We look forward to continuing that long-lasting tradition as a symbol of the strong ties and special relationship shared between the US and Greece, especially within the shipping sector community. As the US capital markets continue to lead the world, we look forward to welcoming more Greek shipping companies to our community of listed companies.

Evi Platsidaki delves into the main trends and challenges in shipping finance and expresses confidence that the Greek shipping market will be at the forefront of upcoming technological developments.

THE GREEK SHIPPING MARKET IS WELL-EQUIPPED TO ATTRACT GLOBAL FINANCIERS

by **Evi Platsidaki**,
Partner Solicitor at Norton Rose Fulbright

What are the main trends in shipping finance today?
Over the past couple of years, the most notable trend has been the increased ability of shipowners to repay a substantial volume of shipping finance loans prior to their maturity dates. This trend has been primarily driven by enhanced liquidity resulting from robust market conditions, alongside a rise in financing costs, prompting companies to favour equity financing over debt for their acquisitions and refinancing needs.
This trend has been especially pronounced among larger companies with diversified fleets, which have absorbed a significant share of financing from traditional sources like European and US banks.
Despite these challenges, the past year has seen financiers adapting rapidly, offering extremely competitive pricing to secure new transactions. We are also witnessing a surge in financing aimed at supporting robust newbuilding programmes, which include the pre-delivery stage, across various companies.
Interestingly, with major players currently less dependent on debt, there has been a revitalised interest by financiers in further exploring the depth of the Greek shipping market, including companies with smaller fleets that resemble the traditional profile of Greek shipping firms. While the size of a company remains a critical parameter for some banks, other banks less constrained by size are keen to establish new relationships.
Furthermore, many companies are increasingly "going local," leveraging competitive pricing and the capacity of Greek banks to handle larger transactions.

Alternative financiers also continue to play a crucial role in the market, serving niche segments and structures that may not align as well with traditional banking criteria.

What will the impact of Basel IV be?
Going into effect on 1 January 2025, Basel IV, which refers to the latest updates and revisions to the Basel Committee on Banking Supervision's regulatory framework for banks, will require Eurozone banks to hold more capital.
That will inevitably lead to higher pricing and a likely shift in focus towards larger corporates, which are deemed as lower risk under the standardised rating approach of Basel IV.
It will be interesting to observe whether this will push certain banks towards higher-risk transactions to sustain higher financing costs or prompt them to reduce their lending.

How sophisticated is shipping finance in Greece?
The Greek shipping market is well-equipped to attract global financiers, with Greek shipping companies being sophisticated and proactive in exploring all available financing options. From straightforward bilateral facilities to more complex structures like ECAs, sale and leaseback transactions, JOLCOs, and sustainability-linked facilities, the Greek market is dynamic and diverse.

Are sustainability-linked and green loans prominent in Greece?
Environmental, social, and governance (ESG) factors, particularly the environmental aspect, are becoming increasingly critical for shipping finance. At the approval stage, ESG considerations have become integral to assessing borrowers' creditworthiness. Moreover, throughout the life of a loan, lenders typically require compliance with the Poseidon Principles, the EU Ship Recycling Regulation, and the Hong Kong Convention.
There is also a range of sustainable finance products available. The most common ones in the Greek shipping market are sustainability-linked facilities. We have documented several such transactions in the past couple of years for both private and public companies and expect an even higher volume going forward.
Sustainability-linked loans will typically measure the borrower's performance against certain sustainability Key Performance Indicators (KPIs), often related to environmental matters such as the vessel's Annual Efficiency Ratio (AER), which is measured by dividing the vessel's annual carbon emissions by its total annual deadweight distance. The facility agreement will set a target AER and will have a margin ratchet, offering a lower margin when the target is met. The targets will have to be more ambitious than what is set under relevant regulations and regimes, such as the CII regime.
Moreover, we have documented several sustainability-linked loans with diversity-related KPIs, such as the number of women holding leadership roles in the company. This is indicative of the industry's commitment and efforts to move the needle when it comes to increasing diversity. It has been great to see financiers support such efforts.
Given the increase in financing costs, banks are already struggling to offer the lowest possible margins to top-tier owners so as to remain competitive in the current environment of improved liquidity for owners. Offering a sustainability-linked margin may, therefore, allow banks to offer more competitive terms. Whether a company will choose to enter into such financing arrangements will depend on their appetite to work towards more stringent ESG targets and disclose such information to their financiers.
Additionally, we expect the emergence of a broader range of finance products in this field, especially as companies look to finance the acquisition and installation of equipment related to carbon emission reduction, such as onboard carbon capture equipment (OCC Equipment). Such equipment will

Interestingly, with major players currently less dependent on debt, there has been a revitalised interest by financiers in further exploring the depth of the Greek shipping market, including companies with smaller fleets that resemble the traditional profile of Greek shipping firms.

capture some or all carbon emitted from fuels on board. The captured carbon will need to be stored and then removed periodically from the vessel in a particular manner. Given the significant expense involved in the installation of such equipment, companies are likely to seek capital from their financiers. Financiers will need to consider the implications of this process concerning the asset's value, particularly whether the equipment will be factored into the vessel's overall value and if the vessel's security can also cover the equipment. In the case that the vessel has already been financed, and the equipment is subsequently financed by another lender, the situation becomes more complex.

Finally, we are also observing some interest from companies in participating in tech start-ups in this sector.

What are the latest developments in commercial contracts?

Regarding shipbuilding contracts, companies are becoming increasingly involved in the shipbuilding process, at times directing the builder as to what specific machinery should be used to improve the vessel's GHG emissions, which raises the question of how liability will be apportioned between owner and builder in the event that the machinery does not operate as intended or the vessel's performance is affected. Companies will usually have appointed separate technical experts to guide them on technical aspects. However, said experts do not typically have any contractual arrangement with the builder and may lack the financial standing to justify the company pursuing a claim against them.

In certain cases, we expect that shipbuilding contracts will be structured in a manner that is closer to what we see in offshore contracts, with tripartite agreements that bring third-party experts into the picture.

Additionally, the evolving use of new technology in shipbuilding is prompting companies to reconsider various contractual aspects. For instance, is the usual framework for sea trials sufficient for defects of new technologies to transpire, and if not, how is this reflected in the builder's indemnities?

The EU ETS also has significant implications for the drafting of commercial contracts. Parties need to address several related issues in their charters, memoranda of agreement, and management agreements (particularly with third-party managers), including how relevant data will be collected and exchanged, who will bear the responsibility of complying with the EU ETS, and the development of a framework for dealing with emissions when a vessel is sold.

What do you expect to see in the market in the next two years?

On the financing side, a lot will depend on whether interest rates will drop. However, I anticipate an active market regardless, as there is a plethora of financiers willing to have a presence in the Greek shipping market. Additionally, the Greek shipping market is strong enough to engage them, particularly those who can be more agile in their offering.

On the commercial front, there is no stopping progress. I expect we will witness the outcomes of ongoing research into new technologies, and I am certain that Greek shipping companies will be at the forefront of such developments. Over the next two years, we should have a much clearer idea of the preferred fuel and its effect on the current fleet and newbuilding orders.

Lastly, I believe we will see increased regulatory interventions from the IMO and the EU on environmental and other matters.

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TECHNOLOGY & SHIPBUILDING

Recent trends in marine technology and innovation

Edited by: Theano Krassa

NEW INDUSTRY ASSOCIATION FOR MARITIME NUCLEAR LAUNCHED

A global group of leading companies with a common interest in developing nuclear energy solutions for the maritime sector have announced the formation of the Nuclear Energy Maritime Organisation (NEMO).

By bringing together stakeholders with relevant expertise, NEMO aims to assist nuclear and maritime regulators in the development of appropriate standards and rules for the deployment, operation, and decommissioning of floating nuclear power.

NEMO will provide expert guidance and promote the highest safety, security, and environmental standards in the development of this nascent industrial sector, fostering collaboration, knowledge sharing, and advocacy among its members and stakeholders.

Advanced nuclear technologies deployed at sea can reduce environmental impact, enhance social responsibility, and increase economic competitiveness. NEMO aims to provide a platform for its members to network and facilitate a functional connection between regulators to foster development and exchange best practices.

NEMO will be headquartered in London and will officially start its proceedings in 2Q 2024.

NEMO's inaugural members are HD KSOE, Lloyd's Register, BWXT Advanced Technologies LLC, TerraPower, LLC., Onomichi Dockyard, Westinghouse Electric Company LLC, CORE POWER (UK) Ltd., VARD Group AS, Bureau Veritas, RINA, JEIL Partners Ltd.

FIRST METHANOL BUNKERING WITH DEEPSEA VESSEL 'ANE MAERSK' AT THE PORT OF ANTWERP-BRUGE

On Monday, 1 April 2024, the world's first large methanol-powered deep-sea vessel 'Ane Maersk' called at the Port of Antwerp's MSC PSA European Terminal (MPET). The vessel completed its first bunker operation in European waters, bunkering 4,300 tonnes of green methanol and 1,375 tonnes of biodiesel (B100) during its port stay. The successful and efficient bunkering is a new milestone in Port of Antwerp-Bruges' ambition to become a multifuel port.

The call at the Antwerp port is part of 'Ane Maersk's' maiden voyage from South Korea to China, fuelled by green methanol. The container vessel built by Hyundai Heavy Industries in South Korea has a nominal capacity of 16,000 containers (TEU) and is equipped with a dual-fuel engine enabling operations on methanol as well as biodiesel and conventional bunker fuel. 'Ane Maersk' is the first of Maersk's 18 large methanol-enabled vessels, which will be delivered between 2024 and 2025, and the world's second methanol-enabled container vessel.

The bunkering took place at the MPET terminal and was accomplished safely during terminal operations. TankMatch dispatched two barges to transfer 4,300 tonnes of green methanol onto the Ane Maersk. Subsequently, a barge from VT Group delivered 1,375 tonnes of biodiesel (B100). The bunkering process was seamlessly integrated into the vessel's port stay, combining bunkering simultaneously with on- and off-loading of cargo. The so-called 'simultaneous operations' (SIMOPS) increased the efficiency of port stays by lowering the additional time allocated for refuelling. This impressive milestone reflects the excellent collaboration between multiple stakeholders involved.

JAPANESE ALLIANCE FOR THE ESTABLISHMENT OF A MARKETING COMPANY FOR LIQUIFIED CO_2 SHIPPING

‘’K’’ Line and Nippon Gas Line Co., Ltd. recently announced the agreement to establish a marketing company for the purpose of providing a seamless and efficient integrated liquefied CO_2 transportation service for carbon dioxide capture and storage (CCS) projects over the boundaries.

The Japanese government is advancing the development of a business environment to initiate CCS projects by 2030 in its “Basic Policy for Realising of GX”. They plan to support the research and business development to scale up the CCS value chain and, at the same time, reduce costs by introducing a hub and cluster structure. Regarding its development, studies have been carried out on the cross-border transport of CO_2 and the creation of an integrated transport system with combinations of different sizes of liquefied CO_2 carriers.

“K” LINE Group is promoting a variety of initiatives to support its own low-carbon and carbon-free operations and society in accordance with its long-term environmental policy, “K” LINE Environmental Vision 2050. “K” LINE will start the operation of liquefied CO_2 carriers for Northern Lights, the world’s first full-scale CCS project, this year. “K” LINE has established a special team for the management of LNG carriers in “K” LINE LNG Shipping (UK) Ltd. and is working to ensure safe and reliable operation.

Nippon Gas Line, the only operator specialising in domestic LPG carriers, has accumulated extensive knowledge and experience in the operation, cargo handling, and ship management of pressurised gas carriers over the past 60 years. Regarding CCS projects in particular, Nippon Gas Line is undertaking operation and ship management of a liquefied CO_2 carrier and developing operation and cargo handling technology for low-temperature and low-pressure liquefied CO_2.

“K” LINE and Nippon Gas Line are determined to take initiatives in liquefied CO_2 shipping for CCS projects. This collaboration between the two companies will provide safe, stable, and high-quality liquefied CO_2 seamless transportation services by leveraging their knowledge and experience. Both companies will contribute to the realisation of a carbon-neutral society through CO_2 shipping.

HMM SIGNS MOU WITH SHANGHAI INTERNATIONAL PORT GROUP ON CLEAN MARINE FUEL BUNKERING

HMM has signed a Memorandum of Understanding (MoU) with Shanghai International Port Group (SIPG) on supply cooperation of Clean Marine fuel. This MoU will focus on bunkering methanol and LNG at Shanghai Port. It also covers supporting carbon reduction goals, promoting global shipping new energy cooperation, and helping shipping energy transformation and sustainable development.

HMM has committed to achieving a Net-Zero emissions target for the entire business by 2050. To accomplish this aim, it is critical to establish port bunkering infrastructure for clean marine fuel.

HMM is continuously expanding to develop sustainable eco supply chain networks at Shanghai Port and other key ports such as Singapore and Busan. HMM also signed new building contracts for nine 9,000 TEU vessels powered by methanol and plans to operate two 7,700 TEU LNG-powered vessels by the end of this year.

SIPG continues to become a front-runner in promoting the development of green and ecological ports. Since 2022, SIPG has provided bonded LNG bunkering services for many shipping com-

panies worldwide. Currently, all preparations for green methanol bunkering in Shanghai Port have been completed.
"Through this cooperation with SIPG, we have expanded our green fuel supply chain in China, following Korea and Singapore. We will continue to strive for various efforts to find a way to go green", said an HMM official.

YARA CLEAN AMMONIA AND AZANE GRANTED SAFETY PERMIT TO BUILD WORLD'S FIRST LOW-EMISSION AMMONIA BUNKERING TERMINAL

The Norwegian Directorate for Civil Protection gave their approval to the construction of the planned ammonia bunkering facility at Fjord Base in Florø, Norway. The permit marks a significant milestone for enabling ammonia as a safe and low-emission alternative to traditional shipping fuels.
Ammonia is widely recognised as a low-emissions shipping fuel. Even though interest in ammonia as a decarbonised shipping fuel is high, the final leg of the journey, from the production plant to the vessel, has been missing. Now, Yara Clean Ammonia, Azane and Fjord Base have demonstrated how the planned ammonia bunkering terminal can meet the strict safety requirements of the Norwegian Directorate for Civil Protection (DSB).
The planned terminal consists of a floating stationary barge with a capacity of 1,000 cubic meters, or 650 tonnes, of low-emission ammonia. The permit allows for up to 416 operations annually, many of these expected to be bunkering operations for offshore supply vessels that regularly call at Fjord Base in Florø.
The planned terminal is part of Yara Clean Ammonia and Azane's efforts to make low-emission ammonia a common fuel for shipping. With ammonia's potential to fully decarbonise the maritime sector, the companies plan to roll out a network of terminals in Scandinavia. This milestone is important to meet the growing demand for ammonia as shipping fuel, as well as incentives needed to enable ship operators and owners to switch from high-emitting but cheaper fuels to the low-emission alternative of ammonia. Demand seems to be gaining momentum in Norway as ENOVA, which manages the Norwegian Climate and Energy fund on behalf of the government, is planning ammonia grant tenders for both ammonia-powered ships and ammonia infrastructure in 2024. There are multiple newbuilding projects in the pipeline and ongoing ammonia-powered Platform Supply Vessels (PSV) tender processes.

Ammonia is widely recognised as a low-emissions shipping fuel. Even though interest in ammonia as a decarbonised shipping fuel is high, the final leg of the journey, from the production plant to the vessel, has been missing.

Yara Clean Ammonia, Azane and Fjord Base will now commence work with their project partners to obtain a permit from the local municipality before making a final investment decision.

NYK AND JMU FORMULATING METHOD FOR EVALUATING SHIP PERFORMANCE IN ACTUAL SEA CONDITIONS

NYK and Japan Marine United Corporation are mutually formulating a method for estimating a ship's performance in actual seas before construction is completed and recently completed verification of a vessel's propulsive performance in wind and wave conditions in actual seas.
The two companies aim to know a vessel's performance in actual seas before the conclusion of a shipbuilding contract and aid in the reduction of GHG emissions by procuring highly fuel-efficient vessels.
In conventional shipbuilding contracts, the guaranteed speed is set and agreed upon based on the relationship between the ship's speed and horsepower in calm waters, and the shipyard and shipping company mutually confirm the guaranteed speed during sea trials in the final phase of construction. However, since actual voyages are strongly affected by waves and winds, the guaranteed performance in calm seas deviates significantly from the performance in actual seas.
NYK and JMU introduced a clause guaranteeing ship performance in actual seas in a shipbuilding contract in September 2020 and have been working to verify performance in actual seas.

Overview of Verification

1. NYK and JMU selected two new VLCCs designed and built at JMU as target vessels and collected data on vessel speed, main engine horsepower, wind direction, wind speed, etc., for one year from the delivery of the vessels in 2022.
2. In actual seas, the two companies mutually verified the degree of achievement against the guaranteed speed/power curve formulated in 2020. The evaluation determined the difference between the guaranteed speed/power curve and the vessel's data for each wind direction (headwind, crosswind, and tailwind) and calculated the average value.
3. NYK and JMU confirmed that the guaranteed speed/power curve for the ship performance in actual seas was highly accurate. Both companies agreed to establish an analysis and evaluation method to evaluate ship performance in actual seas technically and objectively for specific routes.
4. One of the two new VLCCs was built using JMU technology to improve the shape of the vessel's hull for better performance in actual sea conditions, and the two companies confirmed a significant difference in this ship's performance in actual sea conditions, as expected.

X-PRESS FEEDERS SIGNS MOU WITH SIX EUROPEAN PORTS FOR GREEN SHIPPING CORRIDORS

X-Press Feeders signed a memorandum of understanding (MoU) with six European ports, namely the Port of Antwerp Bruges (Belgium), Port of Tallinn (Estonia), Port of Helsinki (Finland), Port of HaminaKotka (Finland), Freeport of Riga (Latvia), and Klaipeda Port (Lithuania) for the establishment of green shipping corridors and the broader decarbonisation of the marine sector in Scandinavia and the Baltic Sea.

Through this MoU, X-Press Feeders and the participating ports will pool resources and expertise to develop and implement sustainable practices for maritime operations.

Under the MoU:

- Parties will work together to further develop infrastructure for the provision and bunkering of alternative fuels such as green methanol,
- Encourage the development of supply chains for fuel that are zero or near zero in terms of greenhouse gas emissions,
- Provide further training programmes for port workers and seafarers with regard to the handling of alternative fuels, and
- Leverage digital platforms to enhance port call optimisation.
- Parties will have regular meetings to update and discuss progress on actions for further developing green shipping corridors.

The MoU underscores the collective dedication to broader decarbonisation efforts within the maritime sector.

The collaboration between the parties will begin with the establishment of these two shipping routes:

- Green Baltic X-PRESS (GBX): Rotterdam > Antwerp Bruges > Klaipeda > Riga > Rotterdam
- Green Finland X-PRESS (GFX): Rotterdam > Antwerp Bruges > Helsinki > Tallinn > HaminaKotka > Rotterdam

These services are scheduled to commence in Q3 2024, marking a significant step towards more environmentally sustainable shipping services in Europe. This development is significant as these will be the very first scheduled feeder routes in Europe powered by green methanol, an alternative fuel that produces at least 60% less greenhouse gas emissions than conventional marine fuel.

X-Press Feeders' green methanol is sourced from fuel supplier OCI Global. Green methanol is made from green hydrogen and the decomposition of organic matter, such as waste and residues. OCI's green methanol is independently certified by the International Sustainability and Carbon Certification (ISCC) Association headquartered in Germany. The ISCC system promotes and verifies the sustainable production of biomass, circular and bio-based materials and renewables.

A GROUNDBREAKING COLLABORATION TO ADVANCE CNSL AS A SUSTAINABLE MARINE FUEL

In a groundbreaking collaboration with industry giants such as maritime advisory organisation Lloyd's Register FOBAS, engine manufacturer Wärtsilä, and biofuel supplier ACT Group, UECC is leading the charge in critically assessing and evaluating a Cashew Nut Shell Liquid (CNSL)-based biofuel.

As part of this partnership, ACT Group created a CNSL-based biofuel known as FSI.100, demonstrating their commitment to innovation and sustainability. This was achieved through a rigorous development process, which included extensive engine testing and a meticulously controlled supply chain, earning the trust of UECC. Following thorough testing on various blend combinations, FSI.100 received approval from engine manufacturers as a 30% blend component in an ISO 8217 DMA grade distillate fuel oil to carry out sea trials, representing a significant stride in the progression of sustainable marine fuels.

FSI.100 addresses concerns about the popularity and suitability of CNSL-based biofuels. It also offers compelling advantages: a certified sustainable, fully controlled supply chain that ensures traceability and accountability from the point of origin to extraction, conversion, and consumption. This approach enhances confidence in CNSL-derived marine fuels, reduces waste, and promotes resource efficiency, aligning with circular economy principles in the maritime sector. Additionally, FSI.100 utilises sustainable land use practices and exhibits high-quality maritime fuel properties, such as ultra-low sulfur and winter spec pour points. It also delivers significant greenhouse gas savings, with well-to-wake emissions reductions of 90% (9.50gCO_2eq/MJ) compared to conventional maritime fuels.

The joint efforts between UECC, LR FOBAS, Wärtsilä, and ACT Group have resulted in structured and phased processes that include

extensive engine test bench trials and analytical assessments to evaluate the suitability of CNSL-based FSI.100 blends in both residual and distillate fuel oils for marine applications. This diligent approach aligns with UECC's commitment to sustainability and responsible business practices.

An important milestone for the maritime industry was accomplished when the collaboration resulted in the provisional acceptance of CNSL-based FSI.100 as a 30% blend component in a distillate DMA marine fuel oil, cleared by OEM, Class, and flag Administrations for sea-trial stages. This achievement underscores the importance of transparency and rigorous evaluation in the adoption of sustainable shipping fuels.

FLEETZERO SECURES INVESTMENT FROM MOL PLUS TO ACCELERATE THE ELECTRIFICATION OF THE MARINE INDUSTRY

Fleetzero Inc. announced a strategic investment from MOL PLUS, the venture capital division of MOL (Mitsui O.S.K. Lines, Ltd.) GROUP. This partnership underlines a shared commitment to advancing decarbonisation and the widespread adoption of electric vessels in the marine industry.

As a leader in marine battery solutions, Fleetzero's mission is to decarbonise shipping without a green premium. The company specialises in creating marine battery systems with unparalleled energy density, affordability, and safety—key factors historically challenging marine electrification. With Fleetzero's advanced batteries, developing large electric vessels capable of medium-to-long-distance transport is now a reality.

The investment by MOL PLUS marks a significant milestone for Fleetzero, enabling the company to expand its operations and impact. With the support of MOL PLUS, Fleetzero will continue to develop its LeviathanTM battery system and explore integrating these systems into MOL Group's fleet. This collaboration is set to catalyse the industry's transition to electric vessels as Fleetzero and MOL PLUS work together to foster partnerships and navigate entry into new markets.

METHANOL-READY NOTATION RECEIVES DNV APPROVAL

Bergen Engines, a leading manufacturer of medium-speed engines and generating sets, announced the approval of its methanol-ready statement for marine engines by DNV.

Both Hapag-Lloyd and IKEA are committed to leading the way in environmentally conscious practices, setting a benchmark for the industry.

Methanol, a versatile and sustainable fuel when produced from renewables, offers numerous advantages for Bergen medium-speed engines. Its efficient combustion properties reduce emissions and contribute to enhanced engine performance – just one of the ways Bergen Engines is working towards a sustainable future.

In addition to methanol, research is underway for other alternative fuels for Bergen Engines. Building upon its success in hydrogen blending, the company aims to develop a 100% hydrogen-fueled engine by the end of this year. Simultaneously, ongoing research continues to assess the feasibility of utilising ammonia as a primary fuel source, further expanding their green solutions portfolio for land and marine-based applications.

HAPAG-LLOYD AND IKEA COLLABORATE TO ADVANCE CLEANER SHIPPING

Hapag-Lloyd has entered a cooperation with IKEA Supply Chain Operations to decarbonise the Hapag-Lloyd container shipments originating from Asia, marking an important step towards a more sustainable maritime industry.

For the period March 2024 to February 2025, both companies have agreed to use Hapag-Lloyd's highest product option for biofuels "Ship Green 100", which relies on waste- and residue-based biofuel instead of conventional marine fuel oil. The expected result for IKEA during this period is a CO_2 emission reduction of around 100,000 tonnes.

The IKEA goal is to reduce the relative GHG emissions from their product transportation by 70% by 2030 and to only use zero emission heavy duty vehicles and ocean vessels by 2040.

This partnership represents a significant step forward in the maritime industry, where collaboration and innovation intersect to create a greener, more sustainable future for global shipping. Both Hapag-Lloyd and IKEA are committed to leading the way in environmentally conscious practices, setting a benchmark for the industry.

Hapag-Lloyd has launched the Ship Green product to offer its customers emission-reduced ocean transports. Based on biofuel, Hapag-Lloyd's customers can choose between 100%, 50% or 25% CO_2e emission avoidance. Ship Green is available for all shipments, including standard, reefer, hardtop, or tank equipment.

On the occasion of the Green Solution Day, a technical seminar organised by HD Hyundai Electric on 25 April 2024 at the Marriot Hotel in Athens, Naftika Chronika talked with Kai Jeong, HD Hyundai Electric's Vice President of Rotating Machinery/Marine Equipment Sales, who presented the seminar's topics and his views on the maritime industry's current and future challenges.

WE HOPE TO MAINTAIN OUR OUTSTANDING COOPERATION WITH THE GREEK SHIPPING INDUSTRY

Kai Jeong,
Vice President,
Rotating Machinery/Marine Equipment,
at HD Hyundai Electric Co.
talks to Panagiotis Korakas

❶ What is the purpose of the Green Solution Day?

The primary purpose of our technical seminar is to promote our latest advanced technologies and products to the Greek shipping community. Over the past decades, Greek shipping has been leading the global maritime industry. As a matter of fact, Greek shipowners are currently playing a central role in the shipping industry's transition regarding carbon emission reduction and the use of eco-friendly technology. They are also a key player in the shipbuilding industry. In this context, we have prepared a technical seminar to introduce our company's new technologies so that our customers can better understand how to move forward with future changes and regulations. With our products, they can enjoy significant technical advantages, making their operations even more efficient.

❷ Can you tell us more about HD Hyundai Electric and its products?

Our company, HD Hyundai Electric, is a division of the HD Hyundai Group and has been providing marine electrical equipment to shipowners globally, including Greek shipowners, for many years. Our main products are generators, motors, switchboards, and transformers for marine electrical applications.

It is worth mentioning that, thanks to the Greek shipowners' support and preference, HD Hyundai Electric was able to become one of the leading companies in marine electrical supplies. Now, our efforts are focused on improving our product quality to meet our customers' expectations and satisfaction.

❸ What is your opinion on the current challenges facing the marine and shipping industries?

It is a well-known fact that the marine and shipping industries are currently facing more challenges than ever before. The first and most important challenge is that of environmental regulations. Exhaust gases produced by vessels release various particles into the air, including nitrogen oxides (NOx), sulfur oxides (SOx), and carbon dioxide (CO_2), which have a tremendous impact on our climate and public health. That is why the International Maritime Organisation (IMO) has tightened its regulations, aiming to significantly reduce GHG emissions by at least 50% by 2050. Following this development, shipowners have begun the gradual decarbonisation of their fleets, which can be achieved through alternative fuels, retrofitting, or eco-friendly systems like our shaft generator.

Digitalisation is another major issue. The maritime industry is currently leading a digital revolution with the introduction of various digital solutions and the use of AI technology. The transition towards a more digitalised and automated industry is definitely accelerating. Digital technologies and solutions are used to increase competitiveness and enhance operational efficiency within the industry. They are also implemented to spur the industry along the decarbonisation path, ultimately aiming for zero emissions from international shipping.

❹ What are the seminar's main topics?

We are constantly improving our technology, taking it to higher levels through our numerous certifications. At the same time, we would like to present our efforts to Greek shipowners, demonstrating how we create added value for our products beyond market demand.
During the seminar, we will introduce our shaft generators, which, in my opinion, are the most efficient way to enhance a vessel's Energy Efficiency Design Index (EEDI) and lower its carbon emissions. Then, we will present the technical benefits of our Intelligent Motor Control Unit (IMCU) and our Hi-PDS (Preventive Diagnosis System), which aim to facilitate the transition toward digitalisation.
During our last session, we will present our Alternative Maritime Power (AMP) system, which we believe will be greatly appreciated by our customers following the latest guidelines for electrical shore connections to ships.

❺ What are your expectations from the Greek shipping industry? What are the company's future plans?

We have always had the support of the Greek shipping industry. We hope to maintain this outstanding cooperation and support from our Greek customers by providing electrical technologies of the highest quality and efficiency.

Looking ahead, the maritime energy transition will not only concern shipowners and operators. It will be at the core of almost every challenge the shipping industry will face in the coming decades. Therefore, we plan to place our electrical applications at the centre of the green energy transition.

❻ The South Korean shipbuilding industry's current strategic focus is on building containerships and LNG carriers. How does this decision affect HD Hyundai Electric's marine equipment manufacturing strategy?

Korean Shipyards have an excellent track record. HD Hyundai Electric is also focusing its strategy on building containerships and LNGCs by providing more efficient products that are compatible with these kinds of vessels.
Based on our technological development, we have also been attempting to provide our services to the Chinese shipbuilding industry. Although Chinese shipyards focus on other ship types like tankers and bulk carriers, they also have to adapt to eco-friendly technologies.
To what extent does HD Hyundai Electric aspire to use AI to optimise its products' design and manufacturing processes?
As I have already mentioned, digitalisation and AI development are necessary for more efficient ship operations. HD Hyundai Electric implements such technologies not only in its Marine Department but also for industrial applications and purposes. These technologies are of paramount importance for the industry's future. In previous years, numerous sensors were required for different marine operations. Now, we use more advanced and efficient smart ship solutions to monitor any issues as soon as they occur. These kinds of technologies also reduce the need for many electrical engineers onboard.

❼ Over the last few months, HD Hyundai Electric has taken a keen interest in offshore wind power projects. Is wind energy a viable solution for the energy transition of power generation in South Korea?

The Korean peninsula is not that large, and our country needs more clean energy available. Therefore, I believe more green energy projects must be developed in South Korea. Wind energy is one of these options. However, developing these kinds of green energy projects requires multifaceted decisions, which in turn depend on financial factors. Our company had been investing in wind turbines up until 2010, but then it stopped. Nowadays, we are once again interested in this kind of green energy, and we are ready to produce wind turbines and play our part in reducing carbon emissions.

It is well understood that there is no silver-bullet solution for alternative fuels in shipping. Shipowners and operators know they must make their decisions based on the specific needs of their business. In contrast, when it comes to selecting lubricants, it can often be easy to focus only on elements like cost and lose sight of the longer-term value high-performance products can provide. Marcus Schaerer, General Manager Services and Technical at Shell Marine, explains why that approach can create issues for businesses and how Shell Marine finds the right solutions to match their unique needs while futureproofing their operations.

THE IMPORTANCE OF SELECTING THE RIGHT LUBRICANTS

(AND HOW TO MAKE THE RIGHT CHOICE)

Marcus Schaerer,
General Manager Services and Technical at Shell Marine

talks to Giannis Theodoropoulos

❶ Why is it such a challenge to select the 'right' lubricant for each vessel?

Shipping is a hugely diverse sector, and that diversity makes finding a silver-bullet solution for any aspect of a vessel's operations near impossible. I doubt we'll ever see a single solution that could work for every shipowner or operator, especially as the sector has changed so rapidly over the last decade. New engines, new fuel types, and new challenges are presented by the need to reduce carbon footprints. All of these are driving a rethink of how we approach shipping operations – and the lubricants needed to keep vessels running smoothly.

❷ Why can shipowners and operators not afford to make the wrong call on lubrication?

If you make the wrong call, you're looking at using lubricants that can make your operations less efficient and cost-effective in the long run. That's why operators should be careful about using cost as the main driver for their decisions.

For example, the practice of lubricant switching (moving between Base Number (BN) 40 and BN 100 products to address deposits in newer, more efficient engine designs) is far from ideal. It can reduce onboard efficiency by making crews work harder to protect engines. It can also cost more to purchase two different cylinder oils. That's one potential negative impact of the lubrication decisions you make.

Similarly, you could end up facing more downtime and higher costs from additional maintenance if you select a lubricant that doesn't address engine deposits adequately.

❸ So, how can operators make the 'right' call for their vessels?

I think the first step is for operators to gain that understanding of the impact their operations have on their engines – and the lubrication requirements that impact can create. It is something they can work closely with suppliers to achieve (and I would readily encourage them to do so). If you do not have the in-house knowledge or experience in marine lubrication to feel confident in your selection, it's vital to collaborate with a partner that can provide that expertise and support.

It is also important to find a supplier whose capabilities you can have great confidence in. You want a supplier that has worked alongside OEMs to develop products that meet their specifications, and overcome the challenges involved in that process. In our case, we collaborated closely with MAN Energy Solutions (MAN ES) on creating a proprietary formulation for the new Category II BN 40 cylinder oil, Shell Alexia 40 XC. The product solved a challenge for both MAN ES and operators who want to meet the requirements of OEMs.

❹ What makes Shell Alexia 40 XC so different from other cylinder oils?

One key element is that there is no need to switch between high-BN and low-BN lubricants to protect engines. Designed for low-speed, two-stroke marine engines using low-sulphur fuels, Shell Alexia 40 XC is a BN 40 product that's 30% cleaner than Category I BN40 cylinder oils while offering the same cleanliness as Category II BN100 products.[1,2] This means it can help minimise deposits, control wear and prolong component life – all while improving the efficiency of onboard operations by removing the need to switch between BN 40 and BN 100 products.

Our team of scientists and seafarers has worked closely with MAN ES at every step along the way. It means that Shell Alexia 40 XC has not only met the required specifications but has received a full No Objection Letter from MAN ES. This demonstrates their confidence in the product and shows that operators can trust it to deliver for their vessels.

❺ What other elements do operators need to consider when selecting lubricants?

Managing a vessel's engine is not like putting oil into your car where you leave it for around 15,000km before changing it. Shipping engines consume oil all the time. They're constantly injecting lubricants – and they have a lost-lubrication system.

To maintain the optimum performance of the engine, you need, among other things, to be monitoring for wear metals in the used oil that can indicate wear on the engine itself. This can be a lot of work for crews if not done efficiently.

You also need to adjust how much of the lubricant you inject into the power cylinders of the engine for optimal performance. After all, if you use more than is needed for your engine, that's an inefficient way of operating that can cost you more over time.

This is where lubrication monitoring services like Shell LubeMonitor come in. As well as helping you find the right feed rate and potentially reduce oil consumption, effective monitoring can help you to reduce downtime and maintenance costs by mitigating the impact of engine wear on your vessel operations.

❻ How can lubricants like Shell Alexia 40 XC help operators today while setting them up for success with future fuels?

The only guarantee we have in shipping is that things will continue to change – and change at pace. As the adoption of low- and zero-emission fuels becomes more widespread, the requirements for cylinder oils will shift.

When you look at liquefied natural gas (LNG), for example, there's a potential long-term pathway from its current form to bio-LNG through to synthetic e-LNG. To ensure the protection of your engines when using future fuels and to future-proof your lubricant choices, you might want to consider a high-performance product like Shell Alexia 40 XC, which is compatible with LNG, bio-LNG, and e-LNG. OEM recommendations will be a key consideration here as well. As I have mentioned already, Cat. II BN 40 cylinder oils represent a sturdy option for existing low-sulphur fuels – including LNG, ethane, methanol and LPG.

Whatever the future holds for shipping, I am looking forward to the challenge of figuring out how to help operators get the most from their vessels.

Disclaimers

1. Based on results of field trials conducted in collaboration with MAN ES in which Shell Alexia 40 XC oil was tested against a Category I BN 40 cylinder oil (Vessel TS Sydney (Songa Toscana)).
2. Based on results of field trials conducted in collaboration with MAN Energy Solutions (MAN ES) in which Shell Alexia 40 XC oil was tested against a Category II BN 100 cylinder oil (Vessel Mingzhou); based on testing procedures for Category II cylinder oils by MAN ES, approved Category II cylinder oils have a cleaning ability equal to or better than a classical BN 100 cylinder oil.

Biofouling management and clean hulls gain increased recognition as means to reduced cost and emissions amid the introduction of green regulations such as CII and EU-ETS.

SHIPSHAVE ITCH™ KEEPS HULLS CLEAN FOR FUEL SAVINGS AND EMISSION REDUCTION

Proactive hull cleaning is proven to be one of the easiest and fastest routes to improve fuel efficiency and reduce emissions.

Marine biofouling resulting from the build-up of micro-organisms, plants, and algae on a ship's hull leads to increased drag in the water that requires burning more fuel to maintain speed, leaving more GHG emissions in its wake.

This makes the hull of a vessel a battleground for efficiency, with IMO research indicating a 0.5mm slime layer covering up to 50% of a hull surface could increase GHG emissions by 25 - or even higher depending on ship type, speed, and other parameters.

Norway's Shipshave is spearheading a green revolution in hull cleaning with its unique In-Transit Cleaning of Hulls (ITCH) solution that has been developed to minimise the environmental footprint of vessels and capture potential fuel and emission savings.

The IMO estimates hull biofouling management can cut emissions by 5-25%, a figure confirmed by Shipshave's experience with shipowner clients from real-life operations with the ITCH.

The semi-autonomous hull-cleaning robot, deployed by the crew from a portable winch mounted on the forecastle deck, swipes up and down the hull underwater using soft brushes to smoothly remove biofouling during a voyage and maintain hull performance at a relatively low cost. This also saves time on port turnarounds and reduces off-hire deviations to carry out traditional hull cleaning.

Furthermore, laboratory testing has confirmed the ITCH cleaning process safeguards hull integrity with minimal impact on coatings, as even high-quality coatings still require cleaning.

A comparative analysis of different hull anti-fouling strategies conducted for the IMO's GloFouling study showed that regular proactive hull cleaning of a bulk carrier over a five-year period resulted in a fuel saving of 10,000 tonnes versus a do-nothing strategy, and 4,000 tonnes versus reactive cleaning.

As well as reducing fuel costs, the consequent cut in emissions also reduces exposure to the EU ETS and aids CII compliance by optimising hull performance.

"With the ITCH, we are redefining hull maintenance with innovative technology to maintain clean hulls for the sake of the environment, regulatory compliance, and efficiency," says Shipshave's CEO Aage Hoejmark.

Aage Hoejmark, CEO of Shipshave

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Founded in 1988, Global Maritime Consultants Group (GMCG) has established itself as a premier global network, providing a wide array of solutions to the maritime and offshore industries.

GMCG: A TRUSTED PARTNER OF THE MARITIME COMMUNITY

and engineering to registration, surveying, and eventual decommissioning. Each phase is meticulously managed with a deep commitment to regulatory compliance and risk management.

More specifically, GMCG's services include the following:

- Marine Services - Offering ship registration, marine surveys, and technical consultancy to ensure vessels are safe, compliant, and efficiently operated.
- Offshore Engineering - Providing engineering solutions for offshore projects, including design, project management, and support for oil & gas as well as renewable energy sectors.
- Maritime Training - Delivering specialised training programmes, including STCW courses and bespoke training solutions

With over 35 years of experience, GMCG specialises in delivering comprehensive services tailored to overcome the complex challenges encountered by shipowners and operators worldwide.

GMCG's service portfolio encompasses marine services, offshore engineering, and specialised training programmes. GMCG's dedication to quality, efficiency, and innovation sets us apart in the industry. Operating from 19 offices globally, GMCG ensures local expertise and robust support across major maritime hubs from Limassol to Shanghai. Its strategic locations enables GMCG to offer seamless services that support the entire lifecycle of a vessel, from design

The extensive network of the company provides a unique blend of global reach with local presence, ensuring responsive and personalised service delivery. This capability allows GMCG to address the specific needs of its clients with precision, providing solutions that are both effective and sustainable.

GMCG is dedicated to continuing its support for the maritime community by developing solutions that not only meet current demands but also anticipate future challenges. Its goal is to ensure a safer, more efficient maritime industry, and to support its clients in achieving their operational objectives with excellence and reliability.

JOIN GMCG AT POSIDONIA 2024 (HALL 1, STAND 356) - YOUR GATEWAY TO MARITIME EXCELLENCE.

Dimitri Tsiftsis discusses the Bahamas Maritime Authority's PSC performance, the impact of geopolitical disruptions on Bahamian-flagged ships, and the registry's future plans regarding innovation and sustainability.

THE BMA IS COMMITTED TO INNOVATION & SUSTAINABILITY

by **Dimitri Tsiftsis**, Regional Director-Greece at The Bahamas Maritime Authority

PSC performance

The BMA is committed to ensuring that all Bahamian ships are always fully compliant with International Convention requirements and national regulations and fully supports the objectives of the PSC process in eliminating sub-standard shipping when applied in a fair and equitable manner. The Bahamas has improved its PSC detention rate significantly and remains on the whitelists of the major PSC MoU regions, except for the USA, where, due to an unusually high number of detentions in 2022, the 3-year detention average is just above the 1.0% criterion for QUALSHIP 21, at 1.016%. The BMA remains focused on ensuring The Bahamas remains on all whitelists and regaining QUALSHIP 21 status at the earliest opportunity.

The impact of geopolitical disruptions on seaborne trade

The escalation of hijackings and attacks in the Red Sea is a matter of concern for us all, and we have put our full support behind the IMO as it tackles these threats to safe and secure navigation and the right of innocent passage, avoiding the compromise to the marine environment. In terms of The Bahamas fleet, we are doing our utmost to support our seafarers, liaising closely with relevant authorities to bring any detained crew home safely, proactively engaging in the regulatory process, and disseminating any new information and guidance to our shipowners so that they can take appropriate actions, where needed.

Diversity and inclusion as vital factors of sustainable development

The BMA believes that diversity and inclusion remain vital factors for sustainable development and is committed to ensuring that the organisation is open to all. The UN Sustainable Development Goal 5 – Gender Equality – is of vital importance for the future of our industry, and the BMA believes that if more women are encouraged to take on positions of responsibility, it will lead to a stronger maritime sector.

Future plans

The BMA is committed to innovation and sustainability in the shipping industry and is dedicated to consistently high standards and excellent service. To that end, it is continuously developing new technology and tools to support its fleet and actively exploring opportunities to enter new shipping sectors that align with our strategic goals.

The BMA has recently launched a comprehensive reporting portal for the use of managers and owners. The system digitalises the entire reporting process, eliminating the need for duplicate information and guiding the user through each reporting stage. Not only does this system assist shipowners and managers, but it will also provide information on accident trends so that, when necessary, the BMA may alert its owners.

We believe that through collaborative efforts and embracing technological advancements, we can contribute to a more efficient and responsible maritime future.

Jotun, one of the world's leading paints and coatings manufacturers, announced the grand opening of its first retail Jotun Performance Coatings store in Greece, located at the prestigious Vanos S.A. premises in Perama.

GRAND OPENING OF JOTUN'S PERFORMANCE COATINGS STORE AT VANOS' PREMISES IN PERAMA

This groundbreaking initiative marks a significant milestone in Jotun's expansion strategy, which aims to provide unparalleled service and innovative solutions.

Situated at the esteemed Vanos S.A. premises, this new facility signifies a strong collaboration between Jotun and Vanos S.A., reflecting their shared commitment to innovation and customer service. The store features state-of-the-art facilities and is equipped with the latest technology, including an advanced Multicolor automatic color tinting machine (MCI), ensuring customers access cutting-edge coating solutions.

Jotun's automatic color tinting machines are uniquely designed so retailers can mix thousands of custom colors for customers in the store. With the inclusion of the MCI machine, customers who visit the Jotun store at Vanos S.A. can now benefit from enhanced efficiency and convenience in accessing Jotun's comprehensive range of performance coatings.

The partnership between Jotun and Vanos S.A. is built on their shared vision of providing quality products and services that exceed customer expectations. With the grand opening of this new store, both companies look forward to further strengthening their cooperation.

Once best known for its leading position as a ballast water treatment system manufacturer, ERMA FIRST now oversees a portfolio of sustainable marine solutions, including technologies that help ship operators to cut emissions while the need to burn fossil fuels continues.

EMISSIONS MILESTONES FOR ERMA FIRST

by **Konstantinos Stampedakis,**
Co-Founder & Managing Director
of ERMA FIRST

ERMA FIRST Co-Founder & Managing Director Konstantinos Stampedakis stresses that the Greek company is intensely focused on helping shipowners decarbonise their operations over the next 15 to 20 years with a portfolio of sustainable future-proof solutions.

Long-term view

An offshoot of longstanding marine technology developer Environmental Protection Engineering (EPE), which has been in operation since 1977, ERMA FIRST was set up in 2009. Today, it retains its commitment to provide solutions to meet shipping's full ballast water treatment systems needs, at a time when most competitors are quitting the market.

"Our commitment is to offer unparalleled long-term cooperation and stellar support to our BWTS customers"., said Mr Stampedakis.

The commitment to collaborating with owner is characteristic of the ERMA FIRST position on energy saving devices and emissions, added Mr Stampedakis.

"We know alternative green fuels will be the eventual solution to maritime decarbonisation, but for the next 15 to 20 years the majority of vessels will continue to burn fossil fuels while facing increasing challenges to cut emissions from regulations such as the CII, EEXI and EU ETS. "Decarbonisation targets for 2030, 2040 and finally 2050 are eminently achievable if all stakeholders act sooner rather than later. We passionately believe there is a lot of room for technologies to deliver operational improvements that reduce fuel consumption and vessel emissions".

Konstantinos Stampedakis is clear that despite slow progress in ports setting up cold ironing facilities to connect ships to shoreside mains electricity or offload captured and stored carbon, owners need to start investing in existing technologies that can help reach approaching decarbonisation targets.

When the cap fits

An immediate step owners can take to cut fuel use and emissions by 2% to 3% is to fit a boss cap fin (BCF). Installed at the hub of a ship's propeller a BCF effectively utilises water swirl, while its fins catch and absorb the rotating water force. Together they reduce energy loss by weakening the propeller hub vortex, boosting thrust and improving propulsion efficiency.

But there are hundreds of different propeller and ship types and sizes, making it prohibitively expensive to design bespoke BCFs for individual vessels and limiting the effectiveness of off-the-shelf models.

The innovative modular design behind the ERMA FIRST FLEXCAP overcomes this issue. At least 22 different models are possible from combining various fins, caps and flanges.

"We can adjust the angle of the fins, or the selection of the cap based on a specific vessel's needs," said Mr Stampedakis, "giving a bespoke propeller cap at the cost of an off-the-shelf model".

Broader perspective

ERMA FIRST's efforts to help owners use innovative but practical and marinised solutions to achieve looming targets for ship decarbonisation cover operations in port and at sea.

Emissions restrictions in ports are ramping up fast, with selected Californian ports already requiring 80% of berthed container, reefer and cruise ships' power to come from a shore-based source.

In Europe, the 'Fit for 55' legislative package contains proposals for ports to have cold ironing infrastructure in place by 1 January 2030 for passenger and container ships of over 5,000gt. China already requires ships on international voyages to use the equipment if it is installed.

ERMA FIRST BLUE CONNECT is an alternative maritime power system which enables vessels to connect to a port's electrical grid to run onboard services, systems and equipment.

BLUE CONNECT has received approval in principle (AiP) from leading classification society Bureau Veritas and is also recognised as an Energy Saving Device by DNV. The first installation of BLUE CONNECT will be made this Fall, while ERMA FIRST has received orders for six to eight units to be delivered by the end of the year.

At sea, the focus has been on onboard carbon capture and storage (OCCS) as a method of reducing ship emissions, with two versions of the same system – named ERMA FIRST CARBON FIT - under development.

An Amine Absorption version is aimed at deep-sea ships with the system capturing CO_2 through well-established technology which absorbs CO_2 from the flue gas and stores it in a liquid state. This reduces the volume for long distance voyages. In this case, the technology has secured AiP from Lloyd's Register and DNV.

A simpler Calcium Hydroxide-based version is aimed at shortsea vessels. In this case, the organic alkali absorbs CO_2 from flue gas in a specially designed reactor and dehydrated calcium carbonate slurry is stored onboard until its disposal at authorised facilities.

ERMA FIRST is aiming to install pilot units in August 2024, with commercial sales following from the second half of 2025, with clients indicating intent to place orders.

Under normal operating conditions OCCS systems are expected to cut emissions by 15% to 30%, said Mr Stampedakis.

Technical answers

Ballast water treatment remains a major focus of ERMA FIRST's sustainability drive, with Mr Stampedakis seeing the potential for stricter regulations ahead that will require continuous investment in systems development.

Whatever the requirement, ERMA FIRST's sustainable solutions have been built through a blend of in-house experience and new expertise.

SHIPPING MARKET ANALYSIS

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Tankers Analysis
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LNG/LPG & Containers Analysis
Dimitris Stratikopoulos

Editorial Coordinator
Martha Gkorila

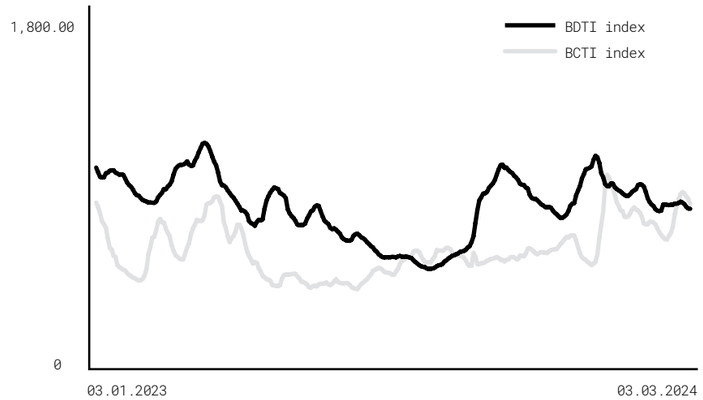
With the 2030 emissions reduction targets rapidly approaching and the growing awareness of geopolitical threats and climate change, 2024 has provided a clear view of what lies ahead.

The necessity of implementing new revenue models to meet the 2030 climate objectives has been highlighted in the first four months of this year. The dynamics of the sector are changing due to transparency, as benchmarking against sustainability and ESG standards is becoming more common. Furthermore, there is a discernible trend in the shipping industry towards using technology to streamline various operations.
The global fleet's ability to move goods has decreased due to infrastructural inefficiencies and greater travel distances caused by geopolitical conflicts, sanctions, and climate-related disruptions. In spite of this, most segments have seen extended periods of high freight and second-hand prices since the early 2020s, and fleet utilisation remains strong. Orderbooks are typically low to moderate, with the exception of gas carriers and containers. The ClarkSea Index shows freight rates are among the highest recorded since 2000, with rates in the top 25%. Some categories recorded a drop in profits between April 2023 and April 2024 despite the Dry Bulk Index's significant increase. Over the past year, second-hand vessel prices rose by 9% to levels not seen since the mid-2000s. While supply is growing faster than demand, the market is still performing quite well, partly because longer travel lengths are offsetting the slower volume growth. These trends are accelerated by geopolitical tensions, which lower fleet capacity and result in longer voyages.

TANKER MARKET

Freight Market

In January, the global crude tanker map and flows underwent another restructuring due to the ongoing Red Sea crisis and recent international sanctions against Russia. OPEC projects an increase in global oil demand driven by the booming Chinese economy. The ongoing Red Sea crisis has benefited the product tanker market due to the increased diesel and fuel supplies to the EU. However, freight costs, delivery times, and product prices have been dramatically impacted.
In February, the tanker market recorded high freight rates, especially in the product sector, marking a departure from previous downward trends. This surge was primarily attributed to the ongoing crisis in the Middle East and rising bunker prices. Additionally, impending US sanctions on Venezuela's oil industry raised concerns about potential disruptions to oil supply, adding further complexity to market dynamics.



Graph 1: Baltic Dirty Tanker and Clean Tanker Index

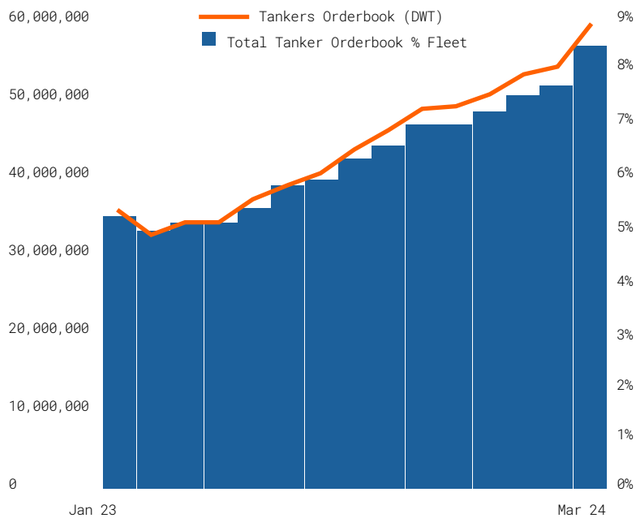
March witnessed dynamic activity across the tanker market. Positive freight market prospects were anticipated despite challenges, with rising costs for crude tankers and declining rates for product tankers.
In April, analysis pointed towards a potential rise in demand for crude and product tankers, driven by geopolitical tensions and increased orders. Emerging oil markets like Namibia could offer new opportunities for the tanker industry, with significant hydrocarbon potential attracting major investments.

Newbuilding - Sales & Purchase

During January, shipbuilding recorded a surge in orders for various vessel types, including VLOCs, despite the holiday season. This indicated shipowners' confidence in methanol as a fuel for a future with lower carbon emissions. In February, the newbuilding market experienced a slowdown compared to the robust activity seen in the sale and purchase (S&P) market during this period.
In March, tanker ordering, especially for VLCCs, surged, led by Greek companies investing in environmentally friendly vessels with scrubbers and LNG capabilities. Robust sale and purchase (S&P) activity, particularly in the Capesize and Newcastlemax segments, highlighted the Greek buyers' predominance.
In April, there was a noticeably strong demand for modern tankers, as indicated by the increased shipbuilding activity and high interest in vessels for sale.

Demolitions

In January, the ship recycling market experienced a downturn due to a lack of vintage tonnage on offer.
In February and March, the ship recycling market faced challenges marked by stagnation and cautious trading in key regions such as India, Bangladesh, Pakistan, and Turkey. Owners hesitated to scrap vessels due to improving freight rates and rising second-hand values, limiting vessel sales, particularly of older units.
Despite the challenges, including a downturn in ship recycling rates, a rebound was anticipated in March and April, driven by upcoming newbuilding deliveries and changes in consumer behaviour.

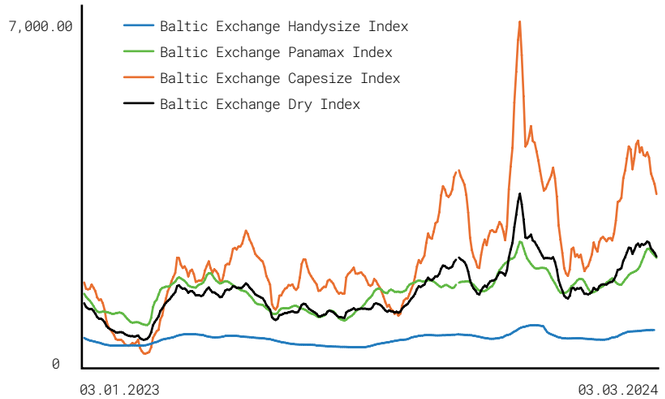


Graph 2: Orderbook for Tankers

DRY BULK MARKET

Freight Market

After four months of terrorist attacks against ships in the Red Sea, bulk carrier traffic through the Suez Canal fell below 2022 levels, as only six Ultramaxes crossed the canal in the first week of February. Russia's coal exports decreased by 14% in February because of the EU's sanctions. However, the Russian government has decided to increase coal exports to China.



Graph 3: Baltic Indices

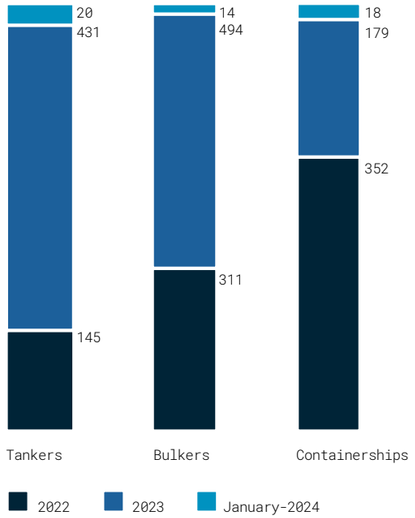
From February 2023 to February 2024, the amount of $/day (dollars per day) for Capesizes almost doubled. During March last year, the Baltic Dry Index fell to a low level due to a slowdown in global economic growth. On 1 March, we can point out the lowest point of BDI - > 1,111 units. During March 2024, the BDI was at consistently elevated levels. On 9 April, the BDI marked its lowest point at 1,571 units. Meanwhile, Houthi forces announced that they had launched rockets against British and Israeli ships, a fact that instantly affected the dry bulk sector.

Newbuilding - Sales & Purchase

At the beginning of 2024, second-hand bulk carriers established a clear lead over tankers. In the first week of 2024, 20 bulk carriers (Handysize, Supramax, Panamax, and Post Panamax carriers) changed hands against only 8 tankers.

In February, the sale & purchase market for bulk carriers continued to rise, and, as a result, 100 vessels changed hands, which is double the number compared to the same period last year.

Greek shipowners focused on the dry bulk sale & purchase market and managed to buy 33% of the Capesizes and 28% of Supramaxes. It should be mentioned that during March, sales of dry bulk vessels increased by 267% (annual levels).

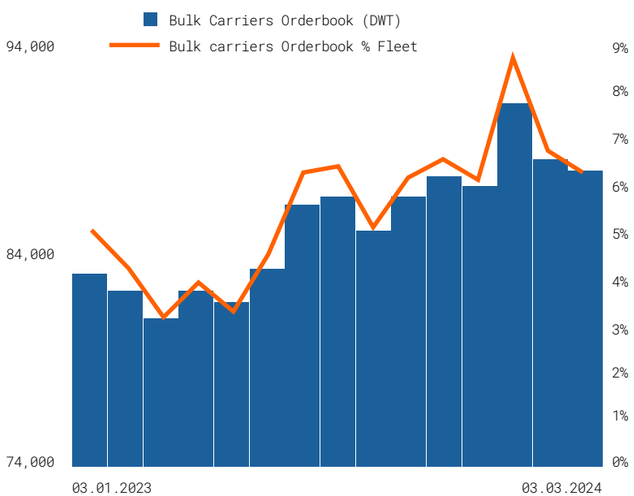


Graph 4: Newbuilding Sales

In contrast with the S&P market, shipowners placed the fewest orders for bulk carriers since 2002. In April, the newbuilding market picked up, while the demand for dry bulkers remained at high levels.

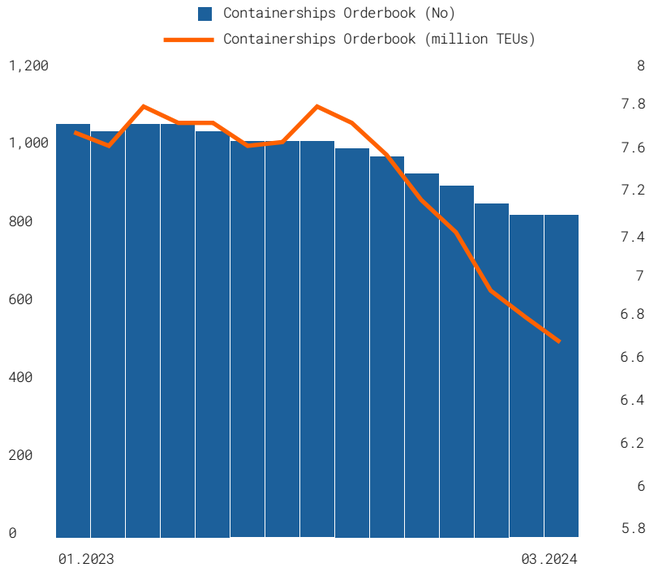
Demolitions

In January, only 4 bulk carrier demolitions took place. Similarly, in February and March, 11 bulk carrier vessels were scrapped (9 in Bangladesh and 2 in other ship recycling facilities).



Graph 5: Orderbook of Dry Bulk Carriers

CONTAINER MARKET



Graph 7: Containerships Orderbook

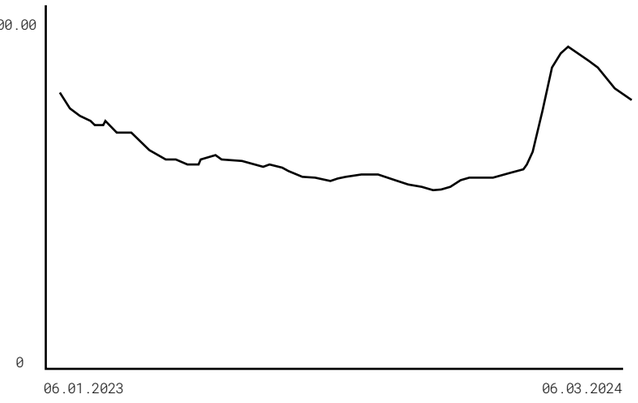
Freight Market

China's price index for export container shipping increased by 36.2% month over month in January 2024, according to data from the Shanghai Shipping Exchange.

According to a multinational supply chain based in the United States of America, 389 ships carrying more than 5.4 million TEUs, or 22% of the world's total tonnage, have chosen to cease sending vessels to the Red Sea, thus increasing the average travel time by up to 25%.

Generally, attacks on ships in the Red Sea region have resulted in a 300% increase in container rates. Since there is still a shortage of more than 5,500 TEUs, charter rates are rising quickly.

In April, charter prices dropped, with fluctuations occurring on specific routes. As a result, investment interest in acquiring containerships slowed significantly due to market challenges.



Graph 6: CCFI

Newbuilding - Sales & Purchase

Due to generally softening markets, the "wait-and-see" attitude of buyers, and limited liquidity, second-hand prices continued to decline in Q4 2023; by the end of December, the containership Second-hand Price Index had dropped by 8% to 52 points. Due to disruptions in the Red Sea and improving time charter rates, there was a resurgence of interest in the containership sale and purchase market.

The boxship industry fleet is experiencing a rapid expansion, with an additional 8% growth predicted for 2024 on top of the 8% growth recorded in 2023, when deliveries reached a record 2.2 million TEU for the entire year after reaching 0.6 million TEU in Q4. It is expected that deliveries will keep increasing rapidly, setting a new record in 2024 (2.7 million TEU).

As of early 2024, the boxship orderbook stands at 6.9 million TEUs, 11% less than the record set in August 2023 but still more than the nominal 2008 TEU. The Q1 2024 Containership Newbuild Price Index closed at 105 units, up 38%, following a slight increase (with prices rising in the larger sizes but remaining stable in the feeder sector).

Demolitions

Recycling is anticipated to increase in 2024 because of strong supply growth and the effects of environmental regulations; however, a portion of this increase in demand is expected to be caused by higher charter rates and increased demand for units during the disruption of the Red Sea.

LNG/LPG MARKET

Freight Market

Given that supply dynamics are anticipated to have an effect, the LNG shipping market may be entering a period of lower freight rates. In 2023, the United States emerged as the leading supplier of gaseous fuel, with being by far the largest importer.

The main factor driving these gains is that freight rates are still high enough to offset the costs of rerouting ships out of the troubled Red Sea, where attacks on commercial vessels continue. It is not expected that the shipping industry will experience major structural changes despite these difficulties.

In April, rates for vessels of around 160,000 cubic meters held firm at $35,000 per day in both the eastern and western regions of the Suez Canal, marking the lowest levels in about a year. The period also witnessed notable shifts in LNG trade routes and demand patterns, characterised by increased imports in Asia contrasted with subdued imports in Europe.

Newbuilding - Sales & Purchase

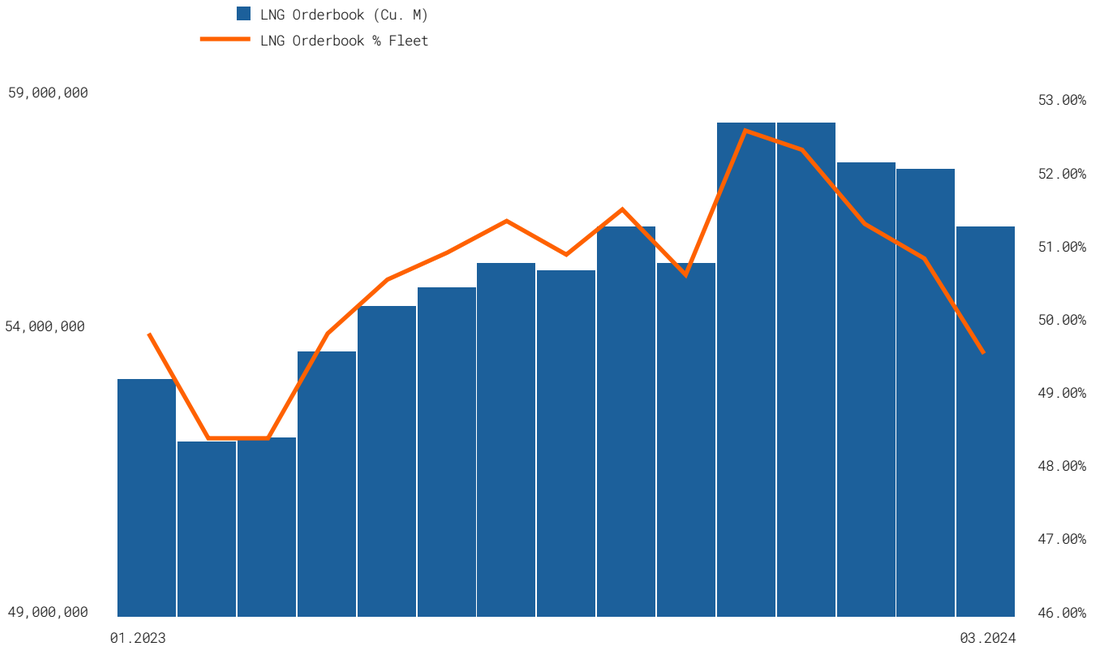
Greek owners have placed orders for 52 LNG carriers amounting to $13.6 billion. The number of ships and value in the Greek orderbook correspond to 13.5% and 14.3%, respectively, of the tonnage under construction. The fleet of LNG carriers increased to 751 units with a capacity of 112.5 million m3 as of the beginning of 2024. This comes after 41 units of 5.7 million ft3 capacity were delivered in 2023. Ten vessels with a capacity of 1.1 million ft3, consisting of three conversions and seven demolition sales, were removed from the fleet.

Due to very firm contracting in recent years, a record 89 vessels with a capacity of 13.2 million m3 are scheduled for delivery this year. With only two units in the small LNG carrier sector, contracting activity is still minimal. Following the delivery of eight units totalling 1.3 million m3, the LNG carrier fleet increased to 760 units at the beginning of March, or 113.9 million m3, representing a 1.2% capacity increase since the beginning of the year.

In April, a surge in LNG carrier orders, particularly at the Hanwha Ocean shipyard in South Korea, saw contracts for 12 vessels secured in a short time span.

Demolitions

As of July 2023, no ships have been sold for scrap, indicating that LNG carrier demolition is still occurring at low volumes. Demolition and conversion sales of steam turbines could increase if this year's softer markets hold, especially when units return from long-term charters.



Graph 8: LNG Carriers Orderbook

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COMMODITIES

DRY BULK CARGOES

Edited by: Giannis Theodoropoulos

COAL

China shields its coal market

Beijing is moving ahead with setting up a coal production reserve system by 2027, aiming for energy security through more flexible coal supplies.

According to a document jointly released by the National Development and Reform Commission and the National Energy Administration of China, the country will strive for self-sufficiency by creating an annual reserve of 300 metric million tonnes of coal by 2030.

The creation of the system aims to quickly release coal production capacity in extreme situations, such as severe fluctuations in the international energy market, adverse weather conditions, and drastic changes in supply and demand stability, ensuring sufficient coal supplies in such conditions.

The new system will also make better use of coal's supporting role in power generation, China's National Energy Administration noted.

Indian coal demand on the rise

India has reportedly had to sacrifice hydropower generation in fiscal year 2023 (which ended on 31 March) as increased energy needs drove it into the arms of coal.

In particular, a Reuters report stated that India's hydropower output recorded the sharpest decline in the last 38 years. In a broader context, 8.3% of the country's total energy production in the previous fiscal year was hydroelectric. This level is well below the 2020 ten-year average of 12.3%.

This development has been attributed to the decrease recorded in the construction of new hydro infrastructure and the unusually low monsoon rainfall in India, which depleted water resources.

On the other hand, in the last fiscal year, power generation from coal in India grew by 13.9%. The country's growing energy needs are pushing it to the easy and reliable option of coal.

Vietnam doubles coal imports under fear of blackout

Vietnam's Q1 coal imports doubled compared to the same period in 2023 as the government tried to reassure foreign investors that factories would not face a repeat of last year's power shortages.

The Southeast Asian country has been under increasing pressure since last summer when it was unable to guarantee a continuous power supply during a prolonged heatwave. In fact, some factories were forced to temporarily suspend production.

During a recent meeting with foreign investors, Vietnamese Prime Minister Pham Minh Chinh reassured them that last year's blackouts would not be repeated. Vietnam's inability to harness renewable energy makes coal imports a one-way street.

According to customs data, coal imports, mainly from Australia and Indonesia, were up by roughly 88% as of 15 March compared with the same period last year. In the first two months of the year, output from domestic mines also rose 3.3 per cent, which, according to official estimates, typically meets about half of Vietnam's demand.

IRON ORE-STEEL

The short-term outlook for steel demand

The World Steel Association (worldsteel) has recently released its Short Range Outlook (SRO) steel demand forecast for 2024 and 2025. worldsteel forecasts that this year, demand will see a 1.7% rebound to reach 1,793 Mt. Steel demand is forecast to grow by 1.2% in 2025 to reach 1,815 Mt.

Commenting on the outlook, Dr Martin Theuringer, Chairman of the worldsteel Economics Committee, said, "After two years of negative growth and severe market volatility since the COVID crisis in 2020, we see early signs of global steel demand settling in a growth trajectory in 2024 and 2025.

The global economy continues to show resilience despite facing several strong headwinds, the lingering impact of the pandemic and Russia's invasion of Ukraine, high inflation, high costs and falling household purchasing power, rising geopolitical uncertainties, and forceful monetary tightening. As we approach the end of this monetary tightening cycle, we observe that tighter credit conditions and higher costs have led to a sharp slowdown in housing activity in most major markets and have hampered the manufacturing sector globally. While it seems the world economy will experience a soft landing from this monetary tightening cycle, we expect to see global steel demand growth remaining weak and market volatility remaining high on lagged impact of monetary tightening, high costs and high geopolitical uncertainties".

worldsteel expects that steel demand in China in 2024 will remain around the level of 2023 as real estate investments continue to decline, but the corresponding steel demand loss will be offset by growth in steel demand coming from infrastructure investments and manufacturing sectors. For 2025, worldsteel sees China's steel demand returning to a downtrend with a 1% decline.

This projection suggests that by 2025, China's steel demand will be significantly lower than the recent peak demand year, 2020. This projection is also in line with worldsteel's view that China might have reached its peak steel demand, and the country's steel demand is likely to continue to decline in the medium term as China gradually moves away from a real estate and infrastructure investment-dependent economic development model.

Steel demand will see a 1.7% rebound to reach 1,793 Mt in 2024.

For 2023, worldsteel's apparent steel use (ASU) estimate for China is based on official statistics and suggests a 3.3% drop. That represents a downward revision of the 2023 estimate for steel demand growth rate by around 5 percentage points from the previous forecast made in October 2023. Chinese steel demand in Q4 last year had indeed been weaker than what worldsteel expected back in October 2023. However, indicators of major steel-using sectors suggest that the actual steel demand was better than the estimated ASU.

Worldsteel's projections for the world, excluding China, suggest a broad-based growth in steel demand at a relatively strong level of 3.5% per annum over 2024-25.

- India has emerged as the strongest driver of steel demand growth since 2021, and the recent projections suggest Indian steel demand will continue to charge ahead with 8% growth in its steel demand over 2024 and 2025, driven by continued growth in all steel-using sectors and especially by continued strong growth in infrastructure investments. In 2025, the demand for steel in India is projected to be almost 70 million tonnes higher than in 2020.
- Other emerging parts of the world, such as MENA and ASEAN, are expected to show accelerating growth in their steel demand over 2024-2025 after a significant slowdown over 2022-2023. worldsteel observes that mounting difficulties in the ASEAN region, such as political instability and erosion of competitiveness, might lead to a lower trend in steel demand growth going forward.
- The developed world is also expected to show a strengthening recovery with 1.3% in 2024 and 2.7% in 2025, as it is expected that steel demand will finally show a meaningful pick up in the EU in 2025 and continued resilience in the US, Japan, and Korea.

The EU (and the UK) remains the region that is currently facing the biggest challenges. The region and, in particular, its steel-using sectors are challenged on a multitude of fronts – geopolitical shifts and uncertainty, high inflation, monetary tightening and partial withdrawal of fiscal support, and still high energy and commodity prices. The persistence of these downside factors resulted in a major drop in the region's steel demand in 2023 to the lowest level since the year 2000 and substantial downward revisions of the forecast for this year. After only a technical rebound in 2024, the region's steel demand is expected to finally show a meaningful recovery with a 5.3% growth in 2025. The forecasted steel demand for the EU in 2024 is only 1.5 Mt higher than the pandemic trough in 2020.

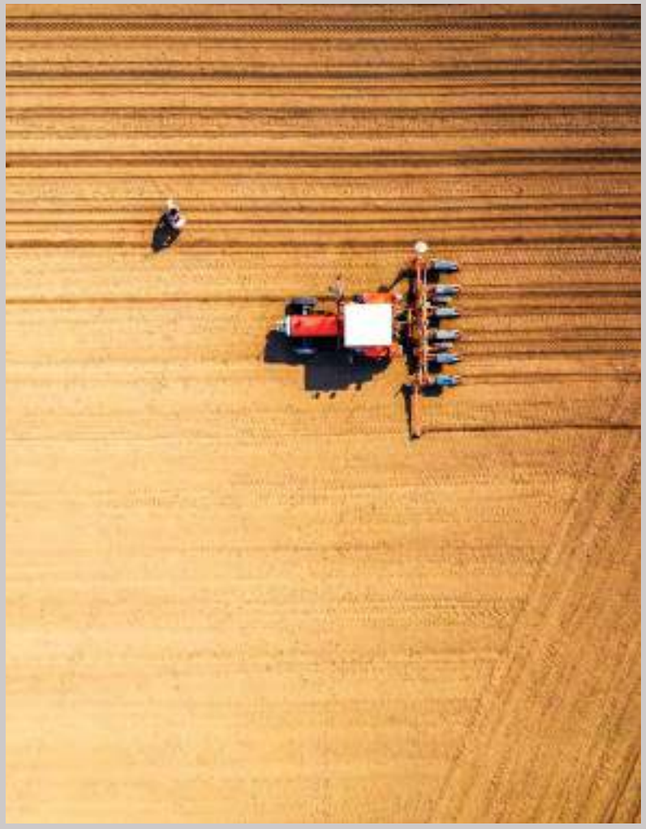
In stark contrast with the EU, the US steel demand continues to show healthy fundamentals for steel demand. The country's steel demand is expected to quickly return to a growth path in 2024 after a sharp drop led by the housing market slowdown in 2023 thanks to strong investment activity, which received a boost from the Inflation Reduction Act and a gradual recovery in housing activity.

GRAINS

The effects of climate change on US corn and soybean yields

Although US corn and soybean yields have doubled since 1970, the damaging effects of extreme weather events such as droughts and floods have slowed yield gains and interrupted decades of rapidly rising agricultural productivity. Such extreme weather events are expected to become more common, according to the United Nations' Intergovernmental Panel on Climate Change (IPCC). A recent study by USDA's Economic Research Service (ERS) modelled how climate-linked changes in temperatures and precipitation, especially east of the 100th meridian where farms are predominantly rain-fed, might affect future US corn and soybean yields and what that would mean for markets and trade through the middle of the next decade. Using 2016 as a base year, the model estimated an increase in US corn yields but a decrease in soybean yields by the year 2036. These changes would also affect exports of US corn and soybeans. In the model, corn exports are projected to increase by 0.36 per cent by 2036, compared with 2016, while soybean exports drop by 1.17 per cent, causing a total decrease of as much as $256 million by 2036 for the two crops.

US corn yields were estimated to increase 3.1 per cent by 2036, representing historically slow yield growth compared with previous decades. In contrast, soybean yields were projected to reverse their multidecade growth trend and decrease by 3.0 per cent. With the yield changes, the use of land in corn and soybean production also was expected to shift. US corn producers were expected to plant fewer acres of corn because of increased yields, for an estimated 0.11 per cent net increase in projected US corn production by 2036. Soybean producers, however, were projected to increase acreage, offsetting the impact of the expected yield decrease and resulting in a net production increase of about 1 per cent by 2036.



Some States were expected to feel the effects of climate change on yields more profoundly than others. Declines in productivity were concentrated in the central States, where corn and soybean yields were projected to decrease by 14.5 per cent and 7.1 per cent, respectively. Climate-linked yield declines in Kansas, Nebraska, Oklahoma, and North and South Dakota were the most extreme, projected as great as 25.4 per cent for corn and 43.4 per cent for soybeans. Balancing those expectations, yields were expected to increase in four States in the Corn Belt, the region that produces about 80 per cent of US corn and soybeans. On average, yields in Illinois, Missouri, Iowa, and Wisconsin were projected to increase 5.7 per cent for corn and 1.2 per cent for soybeans by 2036. Outside the Corn Belt, small, mostly offsetting yield losses and gains for both crops were projected.

The yield results also have implications for US exports of corn and soybeans. By 2036, exports of corn were projected to increase by the equivalent of $63 million (in 2016 dollars), with additional shipments to China ($18 million), Mexico ($9 million), Japan ($4 million), South Korea ($4 million), and other countries ($28 million). Exports of soybeans, however, were projected to decline by $319 million across all trading partners. A $171 million reduction in soybean exports to China, where US market share of soybean trade has retracted in recent years, was the largest projected decrease. The United States contributed more to the global corn supply than China, India, and Russia combined in 2020. US soybean production was exceeded only by Brazil's harvest that year, making the United States a top producer and exporter of corn and soybeans.

The latest projections on grains

Entirely because of a downgraded outlook for maise, tied mainly to rising disease and drought stress in parts of the southern hemisphere, the recent International Grains Council's forecast for 2023/24 total grains (wheat and coarse grains) production is cut by 3m t m/m (month-on-month), to 2,301m. Consumption is raised by 3m t m/m, mostly on an upward adjustment for wheat. With smaller supply and increased uptake, the projection for closing stocks (aggregate of respective local marketing years) is lowered by 8m t to 591m. The outlook for trade is lifted again, now seen at a three-year peak.

The 2024/25 grains supply outlook is slightly tighter compared to last month's initial projections. In addition to a smaller carry-in, the production forecast is cut by 10m t, to 2,322m, predominantly due to a smaller US maise figure, but with total output still seen at a new peak. Despite a scaled-back outlook for consumption, mainly for US feed/residual use, end-season carryovers are placed 9m t down m/m, at 592m, seen fractionally higher y/y (year-on-year).

With customs data pointing to bigger than anticipated dispatches to key markets more recently, the outlook for world soybean trade in 2023/24 is uprated slightly to around 167m t, albeit still representing a 3% y/y decline. Tentative projections for supply and demand in 2024/25 are broadly intact, including record production, consumption, stocks and trade.

There are only marginal adjustments to the rice supply and demand balance sheet for 2023/24, with global end-season reserves seen 1m t higher m/m, at 167m (-4m). Trade is forecast unchanged from before, at 50m t, modestly lower y/y. A reduced figure for China trims the 2024/25 global production forecast by 1m t m/m to 520m (512m), but, with consumption cut, inventories are uprated slightly. The Council's expectations for trade in 2025 (Jan/Dec) are maintained at about 50m t, steady y/y.

WET BULK CARGOES

CRUDE OIL

Oil demand growing at a slower pace as post-Covid rebound runs its course

Global oil demand growth is currently in the midst of a slowdown and expected to ease to 1.2 million barrels a day (mb/d) this year and 1.1 mb/d in 2025 – bringing a peak in consumption into view this decade, according to the International Energy Agency (IEA). This is primarily the result of growth normalisation following the disruptions of 2020-2023 when the COVID-19 pandemic shook oil markets and then the global energy crisis sparked by Russia's invasion of Ukraine.

Despite the forecast deceleration, this level of oil demand growth remains largely in line with the pre-COVID trend, even amid muted expectations for global economic growth this year and increased deployment of clean energy technologies.

In both 2022 and 2023, global oil consumption rose by more than 2 mb/d as economies continued their recoveries from the COVID-19 shock and saw spikes in personal mobility, along with exceptional releases of pent-up demand for travel and tourism. While there are reasonable grounds for uncertainty about how complete the global recovery is, both oil demand data and mobility indicators suggest that its pace has slowed sharply and that the period of demand growth above the historical average is coming to an end.

While IEA expects growth in oil consumption in 2024 and 2025 to remain robust by historical standards, structural factors will lead to a gradual easing of oil demand growth over the rest of this decade. Continued rapid gains in the market share of EVs, particularly in China; steady improvements in vehicle fuel economies; and, notably, efforts by Middle Eastern economies, especially Saudi Arabia, to reduce the quantity of oil used in power generation are together expected to generate an overall peak in demand by the turn of the decade.

Oil remains extremely important to the global economy, and across some of its key applications, alternatives still cannot easily be substituted. In the absence of additional energy and climate policies and an increased investment push into clean energy technologies, the decline in global oil demand following the peak will not be a steep one, leaving demand close to current levels for some time. Nevertheless, cooling Chinese demand growth and considerable progress on the deployment of clean energy transition technologies mean that the oil market is set to enter a new and consequential period of transformation.

The US reimposes sanctions on the Venezuelan oil industry

After a careful review of the current situation in Venezuela, the United States determined Nicolas Maduro and his representatives have not fully met the commitments made under the electoral roadmap agreement, which was signed by Maduro's representatives and the opposition in Barbados in October 2023. Therefore, General License 44, which authorises transactions related to oil or gas sector operations in Venezuela, expired on 18 April.

"Despite delivering on some of the commitments made under the Barbados electoral roadmap, we are concerned that Maduro and his representatives prevented the democratic opposition from registering the candidate of their choice, harassed and intimidated political opponents, and unjustly detained numerous political actors and members of civil society", announced the US Department of State. "We again call on Maduro to allow all candidates and parties to participate in the electoral process and release all political prisoners without restrictions or delay".

In order to implement an orderly process following the expiration of General License 44, the United States will issue a 45-day wind-down license. Treasury's Office of Foreign Assets Control also will consider requests for specific licenses to continue activities beyond the end of the wind-down period on a case-by-case basis.

"We will continue to support Venezuelans' aspirations for a more democratic, stable, and prosperous Venezuela. We and our partners in the international community urge Maduro to uphold all the commitments made under the electoral roadmap established by the signatories of the Barbados Agreement", concludes the statement of the US Department of State.

Is Namibia the next OPEC+ member?

The OPEC+ group, which in recent years has faced the withdrawal of Angola and other countries, is considering Namibia for possible membership as the African country's oil output prospects are excellent.

African industry sources told Reuters that in recent years, TotalEnergies and Shell have made discoveries estimated at 2.6 billion barrels, laying the foundations for African country to set up production in 2030.

OPEC+ would initially focus on getting Namibia to join its Charter of Cooperation, a group that engages in dialogue on energy markets. It is reminded that Brazil joined the Cooperation Charter last January. However, high-ranking officials of the African Chamber of Energy stressed to Reuters that ultimately, OPEC+ is aiming for Namibia's full membership in the organisation.

OPEC Secretary-General Haitham Al Ghais was quoted as saying in February that the organisation was holding talks with several nations on joining the charter without naming them. Coincidentally, however, Al Ghais, at that time, had met with Namibia's Minister of Mines and Energy, Tom Alweendo, at a conference in Nigeria, where the prospect of cooperation between OPEC and the African country under the umbrella of the Cooperation Charter was raised.

EU oil import dependency at its highest in 2022

The EU's import dependency for the entire family of crude oil and petroleum products surged to a

US LNG exports averaged 11.9 billion cubic feet per day in 2023.

new record high of 97.7% in 2022. This increase came after a significant decline in import dependency in 2021 to 91.6%.

The import dependency recorded in 2022 resulted from a combination of changes in net imports (+9.5%), with imports rising by 4.9% and exports declining by 1.7%, and gross available energy going up by 2.8%, according to Eurostat's data. The increase in dependency was also driven by a stock buildup of 8.3 million tonnes of oil equivalent (Mtoe). The buildup helped refill some of the crude oil and petroleum used up in 2021 when the biggest yearly usage (20.2 Mtoe) was recorded. Restocking in 2022 contributed to the increased import dependency.

The dependence on imported crude oil, an essential primary commodity for the petrochemical industry and the production of transport fuels, also increased in 2022, reaching 97.6%.

Higher demand for fuels in the transport sector contributed to an increase in crude oil usage. Motor gasoline consumption increased by 6.3%, and kerosene-type jet fuel consumption rose by 32.5% in 2022 compared with 2021.

The increase in import dependency coincided with considerable changes in import origins. In May 2022, the European Commission implemented the REPowerEU plan to reduce its dependency on Russian fossil fuels. In 2022, imports of oil and petroleum products from Russia decreased by 24.57 million tonnes. Increased imports from Saudi Arabia, the United States and Norway compensated for this decrease.

Chevron exits Myanmar amid humanitarian crisis

US oil major Chevron has confirmed its withdrawal from the Yadana gas field in Myanmar more than two years after condemning violence and human rights violations and announcing its intention to exit operations due to the fragile political situation.

Chevron sold its 41.1% stake in the Yadana natural gas field to the remaining shareholders, Thailand's PTT Exploration and Production and Myanmar's state oil and gas company, Myanma Oil and Gas Enterprise (MOGE).

"Our withdrawal reflects our intention to exit Myanmar in a controlled and orderly manner, following the February 2021 coup and the ongoing humanitarian crisis," a Chevron spokesman said, according to a Reuters report.

Myanmar has been in crisis since the military overthrew the elected government in 2021. Human rights groups and United Nations experts have accused Myanmar's military of committing atrocities against civilians in its effort to crush resistance.

LIQUEFIED NATURAL GAS (LNG)

Global LNG market could split if an EU carbon tax is imposed on imports

The global liquefied natural gas (LNG) market could be transformed and potentially bifurcated if the European Union (EU) extends its carbon taxes to include LNG imports, according to Wood Mackenzie's latest Horizons report.

The EU has extended its Emission Trading Scheme (ETS) to shipping, meaning that LNG cargoes into Europe will be subject to a carbon tax from 2024. The report, titled "Call of duties: How emission taxes on imports could transform the global LNG market," concludes that if the trading bloc goes further and tightens its methane regulation or includes LNG in its Carbon Border Adjustment Mechanism (CBAM) – effectively placing an import duty on LNG at prevailing ETS carbon prices – then Wood Mackenzie predicts that the global LNG market would split.

"If the EU decides to apply these levies, then this will push European gas prices up but also bifurcate the global LNG market, creating a two-tier LNG market," says Massimo Di Odoardo, Vice President of Gas & LNG Research at Wood Mackenzie. "If taxes were limited to the EU, or even extended to Japan and South Korea, trade flows would likely be optimised elsewhere to mitigate the impact".

The report adds that while LNG players are actively working to reduce the greenhouse gas (GHG) footprint of their projects, the reluctance from buyers to pay a premium for lower-emission LNG has so far curbed sellers' appetite to commit to major investments to reduce carbon intensity.

The report adds that not all LNG projects are equal. Methane, measured in kilograms of carbon dioxide equivalent (kg CO_2e), accounts for 5% to 15% of the overall carbon intensity in LNG projects outside the US. However, for LNG projects in the US, methane can account for as much as 25% to 40%. This is mainly due to higher levels of methane losses caused by the extensive use of pneumatic devices and compressors associated with shale gas production.

US the top LNG exporter in 2023

The United States exported more liquefied natural gas (LNG) than any other country in 2023. US LNG exports averaged 11.9 billion cubic feet per day (Bcf/d)—a 12% increase (1.3 Bcf/d) compared with 2022, according to data from our Natural Gas Monthly.

LNG exports from Australia and Qatar—the world's two other largest LNG exporters—each ranged from 10.1 Bcf/d to 10.5 Bcf/d annually

between 2020 and 2023, according to data from Cedigaz. Russia and Malaysia were the fourth- and fifth-highest LNG exporters globally over the last five years (2019–23). In 2023, LNG exports from Russia averaged 4.2 Bcf/d, and exports from Malaysia averaged 3.5 Bcf/d.

US LNG exports increased in the first half of 2023 after Freeport LNG returned to service in February and ramped up to full production by April. Relatively strong demand for LNG in Europe amid high international natural gas prices supported increased US LNG exports during the year. US LNG exports set monthly records late last year: 12.9 Bcf/d in November, followed by 13.6 Bcf/d in December. The US Energy Information Administration (EIA) estimates that utilisation of US LNG export capacity averaged 104% of nominal capacity and 86% of peak capacity across the seven US LNG terminals operating in 2023.

Similar to 2022, Europe (including Türkiye) remained the primary destination for US LNG exports in 2023, accounting for 66% (7.8 Bcf/d) of US exports, followed by Asia at 26% (3.1 Bcf/d) and Latin America and the Middle East with a combined 8% (0.9 Bcf/d).

In 2023, Europe (EU-27 and the UK) continued to import LNG to compensate for the loss of natural gas previously supplied by pipeline from Russia. Europe's LNG import capacity continued to expand, and it will increase by more than one-third between 2021 and 2024.

The countries that imported the most US LNG were the Netherlands, France, and the UK, with a combined 35% (4.2 Bcf/d) of all US LNG exports. LNG imports increased in the Netherlands after the Gate LNG regasification terminal was expanded, and two new floating storage and regasification units (FSRUs) were commissioned. Germany began importing LNG in 2023 when three new FSRUs were commissioned.

In Asia, Japan and South Korea each received 0.8 Bcf/d of LNG exports from the United States, the fourth- and fifth-highest US LNG export volumes by country in 2023. Japan, China, and India increased LNG imports from the United States by a combined 0.6 Bcf/d compared with 2022. The Philippines and Vietnam started importing LNG in 2023; the Philippines imported LNG cargoes from the United States only in October and November.

In Latin America, US LNG exports to Brazil continued to decline last year as Brazil continued to primarily use hydropower for electricity generation. US LNG exports to Brazil peaked in 2021 when the country experienced its worst drought in more than 90 years.

Papua New Guinea's Kumul sells its first spot LNG cargo

Papua New Guinea's national oil and gas company Kumul Petroleum Holdings Limited recently announced that for the first time, it was directly marketing Liquified Natural Gas on the 'spot' market from its share of product from the PNG LNG Gas Project that was not committed to long term sales agreements.

The deal, which was confirmed last month, is to sell 144,000 m3 of LNG on FOB terms to PetroChina International Corporation Limited after a tender process held in February. The Wudang is currently at the PNG LNG Project wharf at Caution Bay, being loaded.

KPHL managing director Wapu Sonk said, "Today marks an important milestone for our company. It is the first time for Kumul Petroleum to market our equity share of LNG production from the PNG LNG Project, which is above the long-term Sales Purchase Agreement volumes".

"Kumul Petroleum has a 16.77% share in the PNG LNG Project, and this entitles us to sell approximately 14 LNG cargoes over the next four years. Also, once we conclude the acquisition of an additional 2.6% of the PNG LNG Project, this will provide us with more LNG to sell on the spot market".

"Kumul Petroleum's direct selling of its share of the PNG LNG Project production is a significant achievement for the company and the country". Mr. Sonk said.

"We are currently in talks with other potential buyers who will be purchasing LNG shipments from us in the future".

The latest development on the energy front

Edited by: Giannis Theodoropoulos

ENERGY & NATURAL RESOURCES

EU INTRODUCES SOLAR CHARTER

The European Solar Charter, signed on 15 April 2024, sets out a series of voluntary actions to be undertaken to support the EU photovoltaic sector.

Solar energy, particularly photovoltaics (PV), is currently the fastest-growing renewable energy source in the EU. Last year, 56 GW of solar PV were installed in the EU, two-thirds of it on rooftops, empowering consumers, protecting them from high electricity prices, and reducing land use. The installations in 2022 and 2023 saved the equivalent of 15 billion cubic meters of Russian gas imports in total, mitigating the risk of disruption of gas supplies to the Union. In addition, the sector provides around 650,000 jobs, 90% of which are on the deployment side, and this number is projected to increase to around 1,000,000 by 2030.

Achieving the 2030 EU target of at least 42.5% renewable energy by 2030, with an ambition to reach 45%, will require further acceleration in the deployment of renewable energy, including solar energy.

The bulk of the demand for solar modules in Europe is covered by imports from a single supplier, China, a concentration that creates short-term risks for the resilience of the value chain and long-term risks for price stability for solar panels due to dependencies on suppliers outside of Europe. Access to affordable solar modules from a diversity of sources, as well as a resilient, sustainable, and competitive European solar value chain, are therefore necessary to achieve a deployment rate in line with the above targets while enhancing the security of supply and mitigating the risk of supply chain disruptions.

However, European solar module manufacturers have recently faced a particular challenge due to the combination of import dependency and a sharp drop in the prices of imported panels. In 2023, the solar photovoltaic sector in the EU and globally saw the prices of the panels plummet from circa 0.20 €/W to less than 0.12 €/W. This unsustainable situation is weakening the viability of existing European production and jeopardises planned investments for new manufacturing plants announced over the last two years. As a consequence, some European companies have either reduced their operations, announced that they would prioritise production in other international markets, in particular the US, or even announced their closure.

Over the last few years, the EU has taken initiatives to strengthen its support of the European solar PV manufacturing sector, which includes several globally competitive companies in several steps of the value chain.

The European Solar PV Industry Alliance (ESIA), launched in December 2022 to reinforce the cooperation within the industry, set itself the target of 30 GW of production capacity along the value chain, an objective considered achievable by 2030. The ESIA pipeline includes more than 20 projects, including several at a multi-GW scale. The Net-Zero Industry Act (NZIA), on which a political agreement was reached in February, aims to ensure that the Union's overall strategic net-zero technologies manufacturing capacity, including solar PV, approaches or reaches at least 40% of the annual deployment needs by 2030. The act includes concrete measures, such as accelerated permitting or market access facilitation through the use of non-price criteria in public procurement, renewable energy auctions and other support schemes.

However, further urgent action is needed in the short term to address the crisis in the European manufacturing industry.

All relevant stakeholders – the Commission, the Member States and the companies active along the European solar PV value chain - should ensure that the green transition and the European industrial objectives go hand in hand, accelerating the deployment of renewables while at the same time enhancing the EU's security of supply by supporting the competitiveness of the sector and the jobs it creates in the EU.

To this end, the European Solar Charter sets out immediate actions to be taken by the Commission, the EU Member States, and the representatives of the solar PV value chain, particularly wholesale distribution and manufacturing parts, to be implemented in order to ensure full compliance with EU competition law and state aid rules.

2023: THE BEST YEAR EVER FOR NEW WIND ENERGY

The global wind industry installed a record 117GW of new capacity in 2023, making it the best year ever for new wind energy. Despite a turbulent political and macroeconomic environment, the wind industry is entering a new era of accelerated growth driven by increased political ambition, manifested in the historic COP28 adoption of a target to triple renewable energy by 2030.

The GWEC's Global Wind Report 2024 highlights increasing momentum in the growth of wind energy worldwide:

-Total installations of 117GW in 2023 represents a 50% year-on-year increase from 2022

-2023 was a year of continued global growth – 54 countries representing all continents built new wind power
-GWEC has revised its 2024-2030 growth forecast (1210GW) upwards by 10% in response to the establishment of national industrial policies in major economies, gathering momentum in offshore wind and promising growth among emerging markets and developing economies.
Still, the wind industry must roughly triple its annual growth from a level of 117 GW in 2023 to at least 320 GW by 2030 to meet the COP28 and 1.5C degree pathway targets.
The Global Wind Report provides a roadmap for how this can be done. GWEC calls on policymakers, investors, and communities to work together across the key areas of investment, supply chains, system infrastructure and public consensus to set the conditions for wind energy growth to take off through to 2030 and beyond.

BALTIC SEA COUNTRIES PLEDGE CLOSER COLLABORATION TO SECURE CRITICAL OFFSHORE ENERGY INFRASTRUCTURE

The Energy Ministers of 8 Baltic Sea countries – Lithuania, Denmark, Estonia, Finland, Germany, Latvia, Poland, and Sweden agreed on the Vilnius Declaration, pledging closer collaboration to secure critical offshore energy infrastructure in the Baltic Sea region. This comes after the Russian invasion of Ukraine and various acts of sabotage to energy infrastructure in the Baltic Sea have created new security concerns. The signatories commit to deter possible malign activities against offshore and underwater infrastructure within NATO and the EU.
On Wednesday, 10 April, eight Baltic Sea countries, the European Union and representatives of NATO, the European Agency for the Cooperation of Energy Regulators (ACER), European transmission system operators (TSOs) and the European wind industry met in Vilnius for the Baltic Sea High-Level Energy Security Meeting 2024.
The Baltic Sea countries have embarked on a rapid expansion of offshore wind and transmission capacity, and already in 2023, Lithuania, Denmark, Estonia, Finland, Germany, Latvia, Poland, and Sweden committed to increasing offshore wind in the Baltic Sea from 3.1 GW today to 19.6 GW by 2030.
The Vilnius Declaration agreed today reaffirms the countries' determination to rapidly implement the actions outlined in the EU Wind Power Package to unlock the Baltic Sea's "vast untapped resources of offshore wind". The countries pledge to decarbonise their energy systems "as soon as possible". They want to collaborate in phasing out Russian fossil fuels and replacing them, in particular, with competitive and homegrown renewables.
The signatories acknowledge the "immense potential" of offshore wind in the Baltic Sea for decarbonisation, diversification, electrification, and the production of renewable hydrogen. They want to develop a strong and resilient wind energy supply chain in the Baltic Sea countries to meet the expected increased demand for offshore wind projects. This includes investments in grids and port infrastructure.

MOL INAUGURATES THE LARGEST GREEN HYDROGEN PLANT IN CENTRAL AND EASTERN EUROPE

MOL Group has handed over a 10-megawatt capacity green hydrogen plant in Százhalombatta, which is the largest in Central and Eastern Europe. The €22 million investment makes fuel production more sustainable: the plant will reduce the Danube Refinery's carbon dioxide emissions by 25,000 tonnes. MOL will be able to produce 1,600 tonnes of clean, carbon-neutral green hydrogen per year, which opens a new chapter in the hydrogen economy. The investment is in line with the MOL Group's SHAPE TOMORROW corporate strategy to make the region more sustainable, competitive, and self-sufficient.
MOL Group's goal is to provide the solutions for

65% of LNG cargoes came to Greece from the USA.

tomorrow: the green hydrogen plant in Százhalombatta, with a 10-megawatt electrolysis unit created by Plug Power, produces around 1,600 tonnes of clean, carbon-neutral green hydrogen per year. The €22 million investment will reduce the carbon footprint of the Danube Refinery by more than 25,000 tonnes of carbon dioxide per year. The new technology will gradually replace the natural gas-based production process, which currently accounts for one-sixth of the MOL Group's total carbon dioxide emissions. The plant will start producing in the second half of 2024, and MOL will use the green hydrogen primarily in its own network for fuel production.

Plug Power's electrolysis equipment uses electricity from renewable sources to break down water into hydrogen and oxygen. This means that no polluting by-products are generated, and, in fact, the plant produces 8-9 tonnes of pure oxygen per tonne of hydrogen. The US company has offered MOL an innovative and reliable technology: the hydrogen generators, optimised for the production of pure hydrogen, have almost 50 years of operational experience.

GREECE: THE RETURN OF THE NATURAL GAS MARKET TO ITS PRE-CRISIS LEVEL

Domestic natural gas consumption in Greece has recorded an increase compared to last year, as per DESFA's data, with consumption data for the first quarter signalling the return of the natural gas market to its pre-crisis level, as the impact of the war in Ukraine has begun to recede.

Specifically, according to DESFA's relevant data for the period of January – March 2024, total natural gas demand decreased by 8.63%, reaching 16.51 Terawatt hours (TWh) from 18.07 TWh in the corresponding period of last year, due to the significant decrease in exports by 94.89% to 0.29 TWh from 5.68 TWh. Exports have decreased in the first quarter of 2024 due to Bulgaria's increasing gas imports from Türkiye. On the contrary, a significant increase was recorded in domestic natural gas consumption by 30.91%, reaching 16.22 TWh from 12.39 TWh in the first quarter of 2023.

In terms of natural gas consumer categories, electricity production units continue to represent the largest part of total consumption, covering 55.49% of domestic demand. Compared to the previous year, demand from electricity production units increased by 29.5%, reaching 9.00 TWh from 6.95 TWh. A significant increase of 237.84%, compared to the first quarter of 2023, was recorded in natural gas consumption by industries and CNG refuelling stations directly connected to the NNGTS, amounting to 2.5 TWh, which corresponds to almost 15.41% of domestic demand. Consumption from distribution networks in the first quarter of 2024 reached 4.72 TWh, which increased by 0.43% compared to last year, covering 29.10% of total demand.

Regarding the contribution of the remaining entry points during the first quarter of 2024, Sidirokastro covered 43.8% of imports (7.25 TWh), recording a significant increase of 113.86% compared to the first quarter of 2023. LNG continues to play a crucial role in gas imports. The Revithoussa LNG terminal (Agia Triada Entry Point) remained a key gateway for the country, covering about 39% of total imports.

Additionally, in the period January-March 2024, approximately 6.93 TWh were unloaded from 9 tankers compared to approximately 9.51 TWh from 13 tankers in the corresponding period of the previous year. More than 65% of LNG cargoes came from the USA, reaching 4.54 TWh, compared to 3.98 TWh in the same period last year. In second place were imports from Russia (1.91 TWh), followed by Algeria (0.48 TWh). The Nea Mesimvria entry point, through the TAP pipeline, covered 17.5% of imports (2.90 TWh). Finally, no quantities of natural gas passed through the Kipoi entry point at the Greek-Turkish border.

MASDAR AND EGA TO EXPLORE THE JOINT DEVELOPMENT OF RENEWABLE ENERGY PROJECTS

Abu Dhabi Future Energy Company PJSC – Masdar, one of the world's largest clean energy companies, and Emirates Global Aluminium (EGA), the largest 'premium aluminium' producer in the world, agreed an alliance to work together on aluminium decarbonisation and low-carbon aluminium growth opportunities.

The signing was witnessed by His Excellency Dr Sultan Al Jaber, UAE Minister of Industry and Advanced Technology and Chair of Masdar. Masdar and EGA will explore the joint development of renewable energy projects, with potential battery storage and green hydrogen production and storage, to support the decarbonisation of EGA's existing operations in the UAE and any future operations in the country.

The two companies will also work together internationally to find opportunities through which Masdar will support EGA to power new aluminium production facilities with renewable energy sources.

Aluminium production is energy-intensive, and generating the electricity required using fossil fuels accounts for about 60 per cent of the global aluminium industry's greenhouse gas emissions.

Legendary shipowners and milestone events in the history of Greek shipping

LEGENDS & MILESTONES

Edited by: Panagiotis Korakas

MAY 2024

The world’s “fastest super tanker”: The “Chrysanthy L." was built in the Kawasaki shipyards for a company under the management of Costas M. Lemos, in 1955. The vessel’s impressive capacity of 39,000 dwt and speed of around 18 knots captivated the global shipping community’s interest.

Promotional advertisement published in the 15 July 1968 issue of Naftika Chronika in view of the first Posidonia Exhibition, which took place between 2 and 8 June 1969.

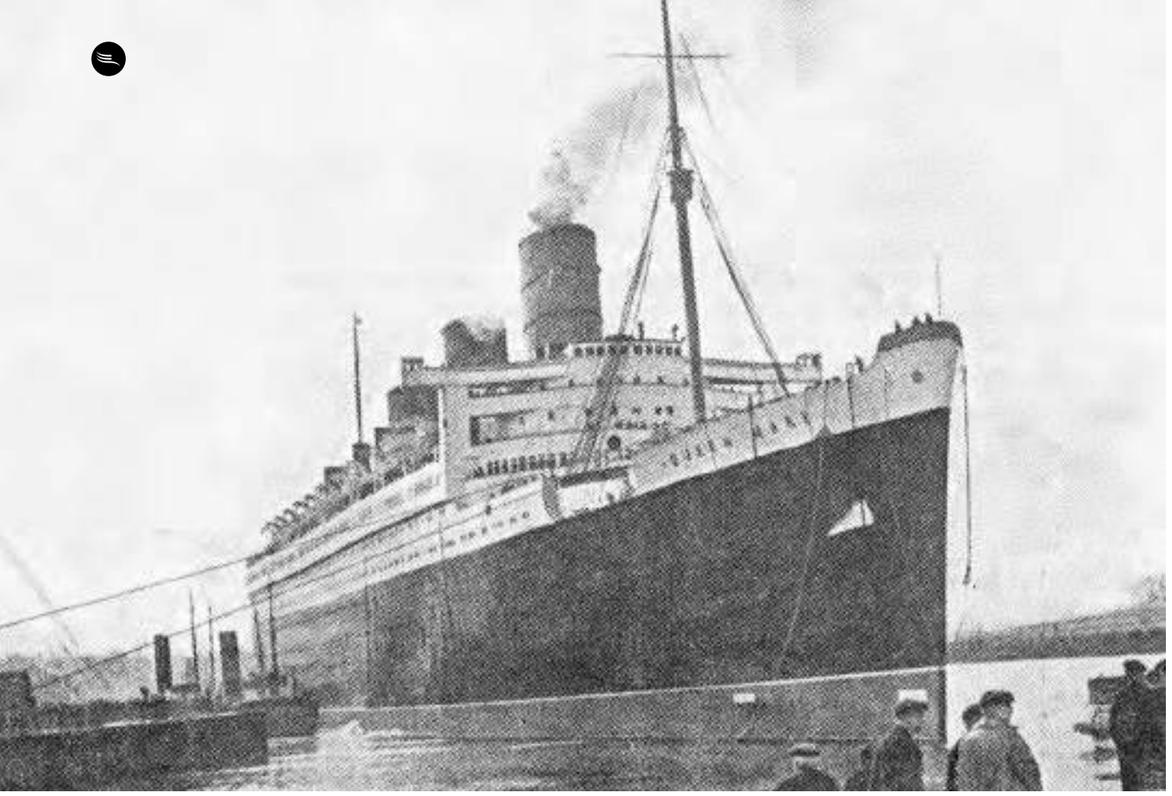
The statue of the ancient Greek god Poseidon photographed during the first Posidonia Exhibition of 1969, which took place at the Zappeion Megaron.

The “Esso Scotia” under construction in the A.G. Weser shipyards in Bremen.
The photo was taken on 1 April 1969, a few weeks before the ship’s launch on 31 March 1969. The vessel was built for Esso London, and its capacity of 255,000 dwt made it the biggest tanker built at a European shipyard at the time.

Aerial view of the Skaramangas shipyards as presented in the 1 January 1962 issue of Naftika Chronika.

Named after the small town of Svedborg in which Maersk was founded in 1904, the “Svendborg Maersk” was the company’s first containership. Built in 1974 by the Ishikawajima-Harima shipyards in Japan, this highly automated vessel would signal a new era for the Danish shipping company.

The “Litva,” a Soviet passenger ship entering the harbour of Venice.
As mentioned in the 1 August 1963 issue of Naftika Chronika, this “highly-modern” vessel was built in East Germany in 1960 as part of the Soviet Union’s attempt to gain a commercial presence in the Mediterranean Sea.



THE RACE FOR THE BLUE RIBAND

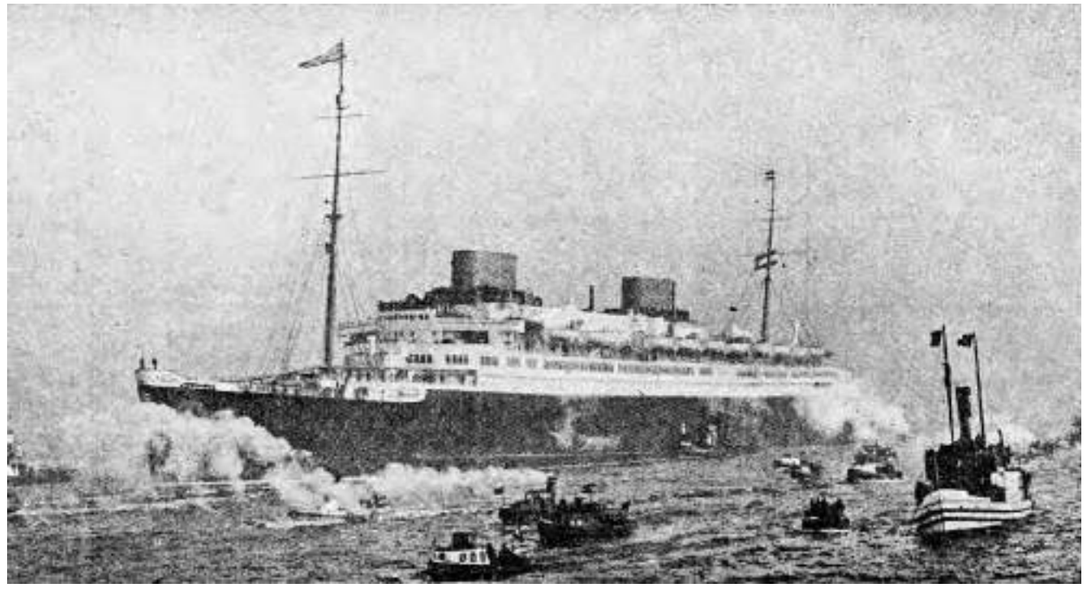
"COMMERCIAL MARITIME IMPERIALISM" AND THE OCEAN LINERS OF THE INTERWAR PERIOD

by Panagiotis Korakas

From its first publication in 1931 but also during the interwar period, Naftika Chronika magazine, although primarily focused on the Greek shipping industry and the challenges it was facing during that era, always kept a watchful eye on all the news related to international developments of the global shipping industry. Among other things, transatlantic passenger shipping, especially the booming North Atlantic Line that connected Europe to the New World, would feature frequently in the magazine's international news columns.

One of the most distinctive and captivating feature articles on this topic was published in the 15 August 1931 issue of Naftika Chronika, which focused on the so-called "commercial maritime imperialism" experienced during those years. More specifically, the article entitled "Millions of Pounds for the Blue Riband": The Dizzying Heights of Maritime Progress" presented an analysis of the global transatlantic shipping sector, showcasing the most important vessels in the worldwide fleet of ocean liners, the sector's current developments, and the upcoming newbuilding projects[1]. Another critical aspect of global transatlantic shipping also featured in the article was the direct decision of many -if not all- major governments whose companies were invested in the highly prestigious ocean liner passenger trade, to subsidise and support them heavily.

It is worth noting that in an era when printed publications in Greece were not heavily focused on printing photographs or did not have the means to do so, this particular feature included a vast array of images showcasing the impressive size of interwar ocean liners but also the prestige gained by the nations of the companies operating them and whose flags they were flying.



Left
The British ocean liner "Queen Mary" in the River Clyde in Scotland. The photograph was published in the 15 April 1936 issue of Naftika Chronika on the occasion of the vessel's imminent maiden voyage.

Right
The German ocean liner "Europa" as presented in the 15 August 1931 issue of Naftika Chronika.

1 *Naftika Chronika*, Issue No 16 (15 August 1931), p. 13.

2 Timothy Hatton, Time on the Crossing: Emigrant Voyages across the Atlantic, 1853 to 1913, IZA DP No. 16274, 2023, page 1.

3 Even then, safety issues regarding passenger jets would prolong the commercial exploitation of ocean liners for a few more years. Most consider the end of the ocean liner era to have culminated at the end of the 1960s right before the Boeing 747's first flights.

Reading through the 93-year-old article, the most important aspects of the transatlantic passenger trade become apparent: On one side, shipping companies were striving to offer luxurious conditions for passengers onboard their vessels. On the other hand, and perhaps more importantly, all stakeholders of transatlantic passenger shipping were trying to find ways to shorten the distance between Europe and North America.

During the 1930s, and with the world entering an unstable era both economically and politically, the prestige of having the world's fastest ocean liner flying your country's flag was of immense importance and constituted the driving force behind many ocean liner management companies' decision to order the design and building of majestic "giants of the high seas".

Transatlantic Passenger Shipping from the 19th century onwards

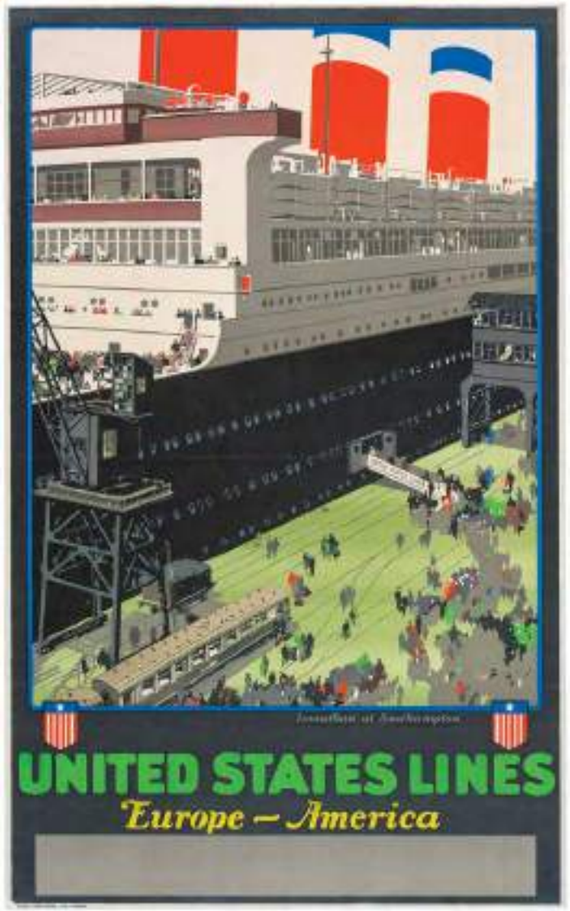
The modern age of the transatlantic passenger shipping era was officially inaugurated in 1838 after the completion of the historical voyage of the "Sirius", which was the first steam-powered vessel to traverse the Atlantic. In the following decades, the transatlantic passenger shipping sector flourished, being the primary facilitator of mass European immigration to the North American continent. During the first few decades of steam-powered transatlantic shipping, the protagonist title belongs to British liner companies. Between 1853 and 1913, more than 10 million UK citizens transited the Atlantic towards the US or Canada, with a large number of European immigrants emigrating to the New World via British ports[2]. This British dominance, represented most notably by companies like the Cunard Line and White Star Line, would not be challenged until the turn of the century.

What the 21st-century reader must comprehend is that, up until the introduction of commercial passenger jets in the 1950s[3], ocean liners were the only means available to anyone wanting to cross the Atlantic. These ocean liners, apart from their immense size and carrying capacity that captivated the general public's imagination, symbolised each nation's maritime prestige. As Naftika Chronika mentions about these vessels: Nothing else embodies the maritime greatness of a country than these "floating colossi", which traverse the oceans at dizzying speeds, encompassing the national prestige of the most powerful nations on earth.

From an early point in the history of transatlantic shipping, companies and passengers focused principally on the speed of vessels crossing the Atlantic. Very soon, the title of the fastest ocean liner to cross the Atlantic became a coveted status, and it was not long before the unofficial yet highly sought-after distinction of the Blue Riband became a driving force for competition in the North Atlantic.

The Blue Riband

The Blue Riband was a distinction awarded to the passenger ship with regular service across the Atlantic Ocean that would record the highest average speed during a trip. The term was originally used in horse racing and was more widely used after the beginning of the 20th century. Given that ocean liners followed different routes, the Blue Riband



The "Leviathan" at Southampton: An advertisment for United States Lines from the late 1920s (US National Archives and Records Administration).

accolade was based on average speed rather than a trip's total duration. Speed records for westbound and eastbound voyages were recorded separately, given that the more challenging westbound voyage that went against the Gulf Stream resulted in slower speeds.

As mentioned above, the first decades of transatlantic shipping were dominated by British companies. However, just before the turn of the 20th century, the construction of the German ocean liner "Kaiser Wilhelm der Grosse" in 1897, the biggest passenger vessel of its era and the first four-funnel liner in history, turned the tables, winning the Blue Riband in 1898. The speed record would go on to be broken by several German ocean liners, keeping the Blue Riband on a German vessel until 1907, when the "Lusitania" brought the title back to Britain. Two years later, the "Mauretania", with a record speed of 26.06 knots (48.26 km/h), would keep the record in British hands for over 20 years, with no other ocean liner managing to surpass that speed for the next two decades.

The competition for the Blue Riband was featured regularly in the pages of Naftika Chronika as maritime nations, especially in Europe, began to compete for this accolade, which would bring worldwide acclaim to vessels flying their flag, resulting in a fierce rivalry.

It is worth noting that the Blue Riband was not just a decorative accolade. As per Naftika Chronika's 15 June 1936 issue, the Blue Riband contributed significantly to securing clientele. Many passengers crossing the Atlantic wanted to experience the thrill of travelling onboard the fastest ocean liner in the world. This fact was commercially exploited as a marketing tool by companies managing vessels that were "reigning" holders of the Blue Riband[4].

The Race for the Blue Riband in the 1930s

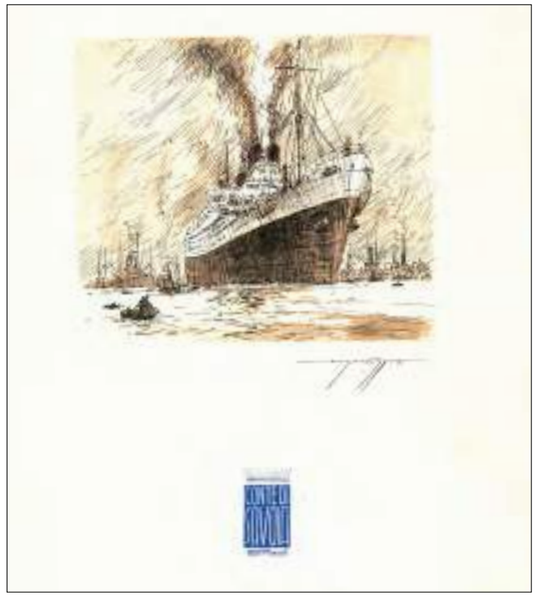
In 1929, the British record of the "Mauretania" was finally broken by Norddeutscher Lloyd's "Bremen" and "Europa" claiming the Blue Riband as their own in 1929 (27.83 knots - 51.54 km/h) and 1930 (27.91 knots - 51.69 km/h) respectively. Despite having lost, surrendered, or given all its pre-war vessels towards war reparations, the German passenger shipping industry was able to finance the construction of two "floating cities," the "Bremen" and "Europa," as mentioned by Naftika Chronika[5]. These ships were built without any subsidies from the German state, which was highly uncommon for the period's newbuilding projects[6]. At the time of writing, the magazine stated that, apart from their superior speed, these German ocean liners garnered a bigger percentage of passengers moving across the Atlantic compared to their British competitors. As German pride was restored, British maritime prestige was hurt.

This German "maritime victory" caused immense concern to the British maritime community, which saw a record of over 20 decades being broken by two state-of-the-art German ocean liners. That led the British Cunard Line to order a new "hyper-colossus" that would allow the company to compete with the newly built German vessels. When Cunard Line announced the construction of a new 73,000-tonne vessel, it was welcomed with enthusiasm by the British maritime community, who believed that the "Mauretania", which was built in 1907, was way past its glory days. The new "Cunarder" was none other than the "Queen Mary", one of Britain's finest ocean liners ever built. Construction on the ship, originally known as "Hull Number 534", began in December 1930 on the River Clyde in Scotland by the John

4 *Naftika Chronika*, Issue No 132 (15 June 1936), p. 12.

5 *Naftika Chronika*, Issue No 16 (15 August 1931), p. 14.

6 S. G. Sturmey, British Shipping and World Competition, The Athlone Press-University of London, 1962, p. 108.



The cover of the dinner menu presented to passengers of the "Conte di Savoia" on 26 March 1934. Aside from their speed, ocean liners of the period would be remembered for their elegant design and the luxurious amenities offered to passengers on board (D. Petritis family archive).

Brown & Company shipyard. After the feature's publication by Naftika Chronika, the effects of the Great Depression were felt, with work on the new "Cunarder" being halted in December 1931, merely a few months before its launching. Cunard Line turned to the British Government for a loan to complete the newbuilding, but it refused to assist the company. Finally, after the merger of the two competing companies in 1934, Cunard Line and White Star Lines[7], the government granted a loan sufficient to complete the "Queen Mary" and build a new sister ship[8].

After more than five years in construction, the "flagship" of Cunard-White Star Line, and essentially of British passenger shipping, was finally completed, and the vessel's maiden voyage took place on 27 May 1936. The "Queen Elizabeth", "Queen Mary's" sister ship, was completed in 1938.

In the context of the growing competition during the 1930s, which attracted the attention of both the shipping industry and the international community, new players entered the fray. France, Italy, and -to a lesser extent- the United States of America dynamically entered the "arena" of transatlantic shipping.

As far as France was concerned, the most important vessels flying the "Tricolore" were the luxurious "Île de France", managed by Compagnie Générale Transatlantique (CGT), and the "L' Atlantique" operated by Cie de Navigation Sud Atlantique. In 1931, construction began for the "Normandie", which was completed in 1934, with the vessel's first voyages commencing in 1935.

7 The company's name would remain Cunard-White Star Line until the end of 1949, when Cunard bought out a large majority of White Star, with the company hence named Cunard Line.

8 S. G. Sturmey, British Shipping and World Competition, The Athlone Press-University of London, 1962, p. 108.

Complementing the protagonists of "maritime commercial imperialism", Naftika Chronika also presented the efforts of Italy and the USA.

In an attempt to demonstrate its support for one of the country's most important industries, the Mussolini regime heavily subsidised Italian shipping interests, assisting several steamship companies by granting soft loans for the construction of newbuildings. Naftika Chronika reported at the time that approximately 1 billion Greek drachmas of the state's budget were spent to strengthen the Italian shipping and shipbuilding industry. This costly state support meant that Italian shipping gained a leading role in the Mediterranean Sea.

As far as the Atlantic Ocean front was concerned, the Italians were inspired by the presence of the German "giants" "Bremen" and "Europa" for their own newbuilding programmes: The Italian regime granted a loan of 300 million lire with a 20-year repayment option at only 2.5% interest to Navigazione Generale to build the "Rex" in Genova and to Lloyd Sabaudo to build the "Conte di Savoia" in Trieste. These two liner companies eventually merged, forming the Italia Flotte Riunite, which operated both vessels. The "Rex", with a capacity of 46.000 grt was the biggest ship built in Italy at the time, with Naftika Chronika predicting that it could contest German maritime superiority. On the other hand, the "Conte di Savoia" was designed as a luxury liner, being the first major liner fitted with gyroscopic stabilisers, an innovative technology at the time.

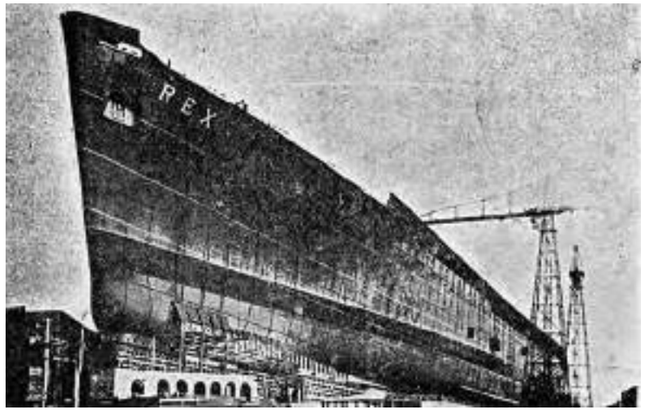
Last but not least, the USA was mainly involved in transatlantic shipping with the operation of the "Leviathan" (requisitioned ex-German Vaterland) under a government contract by the United States Line. Despite operating the "Leviathan" at a loss, thanks to intense international competition but also American prohibition laws that made selling alcohol on board illegal, the US Shipping Board decided to construct two 30.000-tonne ocean liners that would give the US a fighting chance in this "commercial war of the North Atlantic". When built, these vessels would be the "Manhattan" (delivered in July 1932) and the "Washington" (delivered in May 1933).

The 1930s: Quo Vademus?

The 1931 Naftika Chronika issue serves as a prime example of not only the importance of ocean liner passenger shipping at the time but also the incredible advancements that the sector had witnessed over the course of a few decades. Fifty years before the magazine's feature, crossing the Atlantic took approximately fifteen days. By 1931, the same trip took only four days and nights, which was an impressive advancement.

The feature concluded with an important question: Quo Vademus? Despite the dire consequences of the Great Depression, which had begun in 1929, most major nations involved in transatlantic passenger shipping were subsidising the construction of new, state-of-the-art ocean liners, which would bring prestige and hopefully attract international passengers. The magazine's concerns were mainly focused on the fact that the multitude of existing ocean liners from all countries involved in the North American Line would create numerous issues as soon as all the under-construction vessels began their journeys. Brand new, luxurious, and high-speed ocean liners would start their voyages, creating increased competition for existing vessels. Another issue raised by Naftika Chronika was the high value of the newbuildings and the state subsidies given to almost all companies, which heavily affected nations' economies.

We will never know whether the magazine's concerns were justified. The eruption of World War II saw many of the ships mentioned above requisitioned and used as troop carriers throughout the war. However, the 1930s was the decade in which the intense international competition for the Blue Riband was most prominent. With the exception of the US, all countries mentioned had at least one claimant to the Blue Riband. In 1933, the "Bremen" reclaimed the accolade from the also German "Europa". In the same year, the "Rex" brought the Blue Riband to the Italian flag. In 1935, it was the turn of the French maritime community to rejoice since the "Normandie" recorded a speed of 29.98 knots. Throughout those years, as stated above, the "Queen Mary", the much-awaited "New Cunarder", kept British hopes alive. After many attempts, all recorded in the bi-monthly features of Naftika Chronika, in August 1936, the "Queen Mary" crossed the Atlantic at a speed of 30.14 knots, bringing the Blue Riband back into British hands after years away from the spotlight. The record only lasted for about a year, with the "Normandie" reclaiming the prestigious accolade in July 1936 (30.58 knots). In August 1938, the "Queen Mary" won once again the Blue Riband with an average speed of 30.99, a record only broken postwar by the "United States" in 1952, which achieved an impressive 34.51 knots.



The Italian ocean liner "Rex" under construction in Genova (15 August 1931 issue of *Naftika Chronika*)

A shipyard worker photographed next to one of the "Rex's" anchors. The 15 August 1931 issue of Naftika Chronika showcased the colossal size of the ocean liners designed and built during the Interwar period.

In a decade that saw a series of global political, social, and economic challenges lead to the eruption of the biggest war humankind has ever seen, the competition between ocean liners might not seem pertinent to the modern reader. However, the government subsidies granted during that period have helped to paint a broader picture of one of the most important and coveted modes of transportation in the world at the time. The state of transatlantic shipping at that particular time becomes even more evident in the last paragraph of the 1931 Naftika Chronika article:

And yet all nations turn to the sea! "Sea behemoths" are, for them, the most beautiful manifestation of their maritime might. Their upkeep is not a mere calculation of shares or profits. As nations develop, they feel the need to demonstrate their strenuous efforts towards progress by displaying their proud "floating cities"as a reflection of the dizzying advancements in engineering and shipbuilding.

News from the aviation world

Edited by: Manos Charitos

AVIATION INDUSTRY

MORE AIRCRAFTS ARE LEASED THAN OWNED BY AIRLINES GLOBALLY

Airlines have a choice between buying their aircraft or leasing them. Leasing has emerged as the preferred option, rising from roughly 10% of the total fleet in the 1970s to 58% at the end of 2023, according to IATA. This most spectacular increase occurred between 1980 and 2010, and the share first crossed the 50% mark in 2004. In recent years, it has stabilised around the current 60% level, suggesting that this might be "the optimal" split between leasing and owning in the industry.

IATA says that leasing first took off in North America, where airlines were deregulated in 1978 (along with trucking, buses, and railroads). The subsequent increase in air traffic demand helped push the share of leased aircraft up from 20% to 50% over the decade that followed.

However, since then, the regions of Europe, Latin America, and Asia have taken to leasing to such an extent that their share of leased aircraft is now close to 70% of the total fleet, leaving North America far behind at 40% - down from 50% in 2010 and the lowest among regions.

A couple of reasons can explain the reason behind the lower share of leased aeroplanes in North America. Firstly, North American airlines have better access to capital markets and relatively cheap alternative financing options like corporate debt. Secondly, large legacy carriers, which historically hold the majority of the market share, directly own a sizeable portion of their aircraft fleet. Lastly, the relatively better financial performance of the North American region favoured the ownership model. On the other hand, the higher lease share displayed in other regions, except for Africa, appears to have enabled faster fleet renewal.

SINOPEC AND TOTALENERGIES INK AGREEMENT FOR SUSTAINABLE AVIATION FUEL PRODUCTION

China Petroleum & Chemical Corporation has inked a landmark head of agreement (HoA) with TotalEnergies in Beijing, embarking on a joint venture to produce sustainable aviation fuel (SAF) from waste oils at one of Sinopec's refineries. The partnership aims to achieve an annual production capacity of 230,000 tonnes, with the new production line operated jointly by both entities.

For years, Sinopec has been dedicated to advancing China's bio-jet fuel industry development. Bio-jet fuel is categorised under SAFs produced from renewable resources, offering up to over 50% reduction in CO_2 emissions throughout its lifecycle compared with conventional petroleum-based jet fuels. In 2009, Sinopec successfully developed its bio-jet fuel production technology, securing intellectual property rights and producing qualified bio-jet fuels for the first time in December 2011. April 2013 marked successful trial flights at Shanghai Hongqiao Airport; commercial flights between Shanghai-Beijing were conducted in 2015; transoceanic flights from Beijing-Chicago took place in 2017, making China the first Asian country and fourth globally possessing indigenous bio-jet fuel technology development capabilities.

In May 2022, China's inaugural industrial-scale bio-jet fuel facility commenced pilot production at Zhenhai Refining & Chemicals, achieving Asia's first Global RSB biomass-based sustainable aviation fuel certification later that year, followed by obtaining airworthiness certificates for domestically produced large-scale bio-jet fuels in September.

On the day of signing the jet fuel cooperation agreement with TotalEnergies, Sinopec also signed a Memorandum of Understanding with the Ministry of Commerce of Thailand in Bangkok to further strengthen product promotion and market expansion collaborations.

US DEPARTMENT OF TRANSPORTATION TO SUPPORT PASSENGER RIGHTS

US Transportation Secretary Pete Buttigieg announced the launch of the bipartisan Airline Passenger Protection Partnership with 18 state attorneys general to investigate airlines and ticket agents and hold them accountable when they violate aviation consumer protection laws. The partnership significantly expands the Department's oversight capacity by establishing a new fast-track system prioritising misconduct cases from state attorneys general who uncover unfair or deceptive airline practices. Through the partnership, the US Department of Transportation will provide state attorneys general with access to the federal complaint database and help ensure that airlines cooperate with state investigations.

"Consumers deserve to be treated fairly, know what they're getting, and get everything they pay for when they fly," said Colorado Attorney General Phil Weiser. "This agreement and partnership with the DOT will allow my office to directly serve Colorado consumers when they file complaints about unfair or deceptive airline business practices. It also creates a process to ensure the DOT prioritises the complaints we refer to them.

The partnership – memorialised in signed Memoranda of Understanding (MoUs) – will ensure that state attorneys general and the DOT's Office of Aviation Consumer Protection (OACP) are closely collaborating on complaints involving unfair or deceptive practices by airlines. Federal law places responsibility for addressing airline consumer protection matters with DOT. While state attorneys general receive consumer complaints regarding airline practices, airlines are not legally required to respond to state AG inquiries. The MoU incentivises airlines to be responsive to state attorneys general and enables the use of federal and state resources and expertise to protect the rights of the flying public.

Through this partnership, DOT and state attorneys general will work together to:

- Investigate airline complaints for unfair or deceptive practices
- Ensure airlines cooperate with state investigations
- Create a fast-track action system to prioritise misconduct case referrals
- Share access to the consumer complaint database

The new partnership will greatly improve DOT's capacity to protect airline passengers.

antaeus TRAVEL GROUP

THE NEW TRENDS IN THE MARINE TRAVEL INDUSTRY

An Interview with **George Chatzantonis**
Managing Director of Antaeus Travel Group

What are the current trends in the marine travel industry?

I would say there are four important trends.

Firstly, there is a trend towards Interconnection of Service & Technology.

Today, more than ever before, technology provides operational and cost-effective solutions to the crew travel industry. Our developing team and partners, with valuable feedback from our year-long clients in the maritime sector, have created desktop and mobile applications that provide cost-effective and seamless online solutions making our 24/7 service unique and the easiest to reach. Connecting our tools with any crew software available can lead to holistic crew & travel management efficiency.

Secondly how to find the Lowest Fare.

For me, the best available fares that truly reduce the expenses for a maritime company come only with proper automation and deep knowledge of how the ever-evolving airline market works. Automation offers quicker and transparent actions for both travel agencies and crew departments, while human travel agents' expertise gives solutions to the most difficult situations where availability is low, visa restrictions are on place and/or time differences do not allow "normal" operating conditions. At Antaeus, we invest in both. Initially, by training our people to understand the new trends of the airline industry and how their content distribution changes and operates. And secondly, by automating the processes between crew departments and travel agencies to achieve the most efficient outcome – stress free and low-cost operations for both.

Then, we have the changes in airline distribution, the so-called New Distribution Capability (NDC).

For over 15 years, the industry has been operating with the same 3-way structure. Travel agencies connected with reservation systems (GDSs) offer their content to shipping and oil & gas companies. In this structure, airlines pay a fee to the GDSs for their content to be distributed to the final consumer. Today this is changing. Airlines, trying to reduce their costs that reservation systems impose, invent new ways to distribute their marine travel availability and content, the NDC. Airlines develop and transmit their XML-based content and availability directly to travel agencies at a lower cost and no cancelation fees for marine travel tickets. The Antaeus team has invested in integrating NDC content into our automation strategy, leading to reduced travel costs and higher availability with all airlines, including low-costs.

And finally, CO_2 Emissions Reality.

Whether your company operates tanker, container and offshore vessels or cruise ships and yachts, emissions management towards a greener world plays a crucial role. At Antaeus, we have built reporting applications where your organisation's CO_2 emisssions are uploaded for easy tracking as well as fast offsetting.

Why would a shipping company choose to book with you? What differentiates you from other similar travel companies?

Our priority lies in maintaining a sole focus. We follow a family-centric approach to our operations, which embodies a significant principle for us. Which embodies a significant principle for us. As the younger generation, we remain receptive to learning from our experienced people and colleagues, who have been with us for over 25 years. Simultaneously, they are also open to understanding our perspective, saying yes to the direction in which the world is progressing and the new applications we have created in the last years. I would say we have achieved a total Interconnection of Service and Technology. What's interesting is how our company's values resonate across all our team members, regardless of their location within Antaeus offices. With a centralised operation and global presence in Athens, Manila, Miami, Limassol, and Basel, comprising over 75 individuals, our service embodies true 24/7 availability, personalised attention, and at the end cost efficiency. The above factors set our service apart.

How do you respond to the current industry trends?

Definitely by making those rapid changes a positive externality for our people, operations and services. As a 35-year-old family business that recently transitioned to the 2nd generation, how we provide our services will always be the competitive advantage for us. When I say how, I really mean who the person behind the daily emails and phone calls is or what online app we use to assist our clients in real time. For me, our people, their expertise, and our generation's vision for an automated human-to-human marine travel service are the drivers for growing and adapting. What we want to achieve here is bring the necessary information and content to our clients' screens. We want to do that in a fast, automated but still human-offered way as this is the only way to provide the best service that is available all year long.

At the end, we work with one motto: On Board – On Time – Anytime – Worldwide.

MARITIME NUMBERS

2.7%

the expected bulk carrier supply growth in 2024

29,585,451 TEUs

the capacity of the global container-ship fleet

28,000

the number of marine equipment man-ufacturers and technology providers that are part of the European industry

$13.6 billion

the value of orders secured by South Korean shipyards in the first quarter of 2024

40%

the Middle East's share in global oil exports

31.7 million people

the passenger traffic on cruise ships in 2023

>2,400

the number of vessels globally equipped to operate on LNG

73.9%

the percentage of the world's seaborne iron ore shipments bound for China

5,880

the number of tankers that comprise the global fleet

ATP

HIGHER STANDARDS

IOLCOS
HELLENIC MARITIME ENTERPRISES Co. Ltd

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Tel: +30 210 6233960, Fax: +30 210 6233970
e-mail :iolcos@iolcos-atp.gr, wwww.iolcos.eu

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piraeus@register-iri.com

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

THE MARSHALL ISLANDS REGISTRY

CAPABILITY

International Registries, Inc. and its affiliates (IRI) provide administrative and technical support to the Republic of the Marshall Islands (RMI) Maritime and Corporate Registries. Recognizing the specialized needs of the shipping and financial services industries across a broad commercial and economic spectrum, the RMI Registry (the "Registry") is one of the leading registries in the world surpassing 201.2 million gross tons at the end of March 2024. As of 31 March 2024, the RMI fleet had 1,506 vessels weighing 66.2 million gross tons that are either managed or owned by a Greek company, which is 32.9% of the total gross tons of the RMI fleet.

SUCCESS FACTORS

1. Employees with professional backgrounds in law, finance, ship management, seafaring, marine engineering, naval architecture, port State administrations, and Classification Societies, among others, are resourced based on their expertise, experience, and industry outreach.
2. IRI's ISO 9001:2015 certification ensures consistency among its network of 28 worldwide offices for registration and ongoing technical and operational support.
3. Decentralized operations provide customers with 24 hour worldwide service.
4. The RMI Maritime Administrator (the "Administrator") has authorized the major Classification Societies to act on its behalf, while maintaining its own technical team responsible for oversight of delegated functions, simplifying matters for owners/operators.
5. The RMI remains white listed with the Paris and Tokyo Memorandums of Understanding, and has maintained an unprecedented 20 consecutive years of QUALSHIP 21 status with the United States Coast Guard. This prestigious port State control record is achieved through the Registry's pre-registration vetting and assessment process, continuous monitoring of the fleet, and complimentary technical support to all RMI flagged vessels.
6. The RMI maintains an active delegation at the International Maritime Organization. This delegation plays a role in shaping future regulations, allowing the RMI to proactively manage the implementation of new requirements and provide relevant advice to owners/operators and other industry stakeholders.
7. The Administrator has experience with all major vessel types, with 5,620 vessels registered with the RMI as of 31 March 2024.
8. The RMI fleet is the youngest quality fleet in the world.[1]

[1] *Clarksons Research's World Fleet Monitor, Volume 11, No. 3 (March 2024).*

The **RMI Registry** is the **only registry globally** to achieve United States Coast Guard's **QUALSHIP 21** status for **20 consecutive years**.

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akéreon
business & IT consulting

Premium Maritime Email Services

akéreon is a business and information technology consulting company with the experience and expertise to leverage IT for business results. akéreon consultants have been serving the international shipping/maritime sector since 1990.
The company provides a wide spectrum of vertical email services for the shipping industry. The akéreon email services are fully managed services with human interaction, care and advice for the best practices in shipping. A professional helpdesk, experienced in shipping, is provided for assistance with every single message delivery and access to online self-service tools.
akéreon is the largest email provider in shipping, handling about 3.2 million messages per day and serving maritime companies in more than 30 countries around the globe.

Email Services
- Email hosting is a dedicated professional email service for maritime companies.
- Create as many company email accounts as you need, with instant setup within the day.
- Hosted service, neither hardware/software nor technical attendance or expertise is required.
- The users may use their mobile devices to check their email on the go, including tools such as Web-Mail, auto-forwarding, auto-reply and email filtering.

Protect your Company from Spam & Viruses
- Email protection service dedicated to shipping companies.
- Filters all spam and malicious messages, without losing any of your emails, akéreon makes sure that every message arrives on your server.
- DIY online tool for blacklisting, whitelisting, accessible from everywhere.

Outgoing Email for Shipping
- Managed email service ensuring that all your emails will reach their destination and will not be marked as spam or end up as undelivered messages.
- Dedicated professional email service for shipping companies, with no restrictions on the number of messages, the size of email, or the number of recipients.
- Email helpdesk and email control center are available to assist you in finding out when and how fast your emails were delivered, viewing all bounced and deferred addresses, and clearing the recipient lists from invalid/obsolete email addresses.

Email Disaster Recovery and Business Continuity
- Managed email service ensuring that you are continuously connected to your emails, even if your office server is down.
- Ability to retain messages for a long time, disaster recovery service is embedded.
- The service includes domain/email hosting and antispam/antivirus services as well.

Cloud Services
- Cloud backup services: easy and secure way for storing your day-to-day business data in an independent location, a private cloud infrastructure, uninterrupted service and accessible via any web connection.
- Cloud files: Synchronize files vessel - ashore - on the go, access via web, app for iOS and Android or desktop sync client, unlimited users, secure access via https://cloud.company.gr, reliable, always on, daily backup, administer your users and files directly.
- Cloud Server hosting: a managed service to host your Windows or Linux server for your main applications or as a fault tolerance solution, minimize your capex with minimal infrastructure costs.

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- Cloud Server hosting: a managed service to host your Windows or Linux server for your main applications or as a fault tolerance solution, minimize your capex with minimal infrastructure costs.

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