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GETTING TO NET ZERO EMISSIONS

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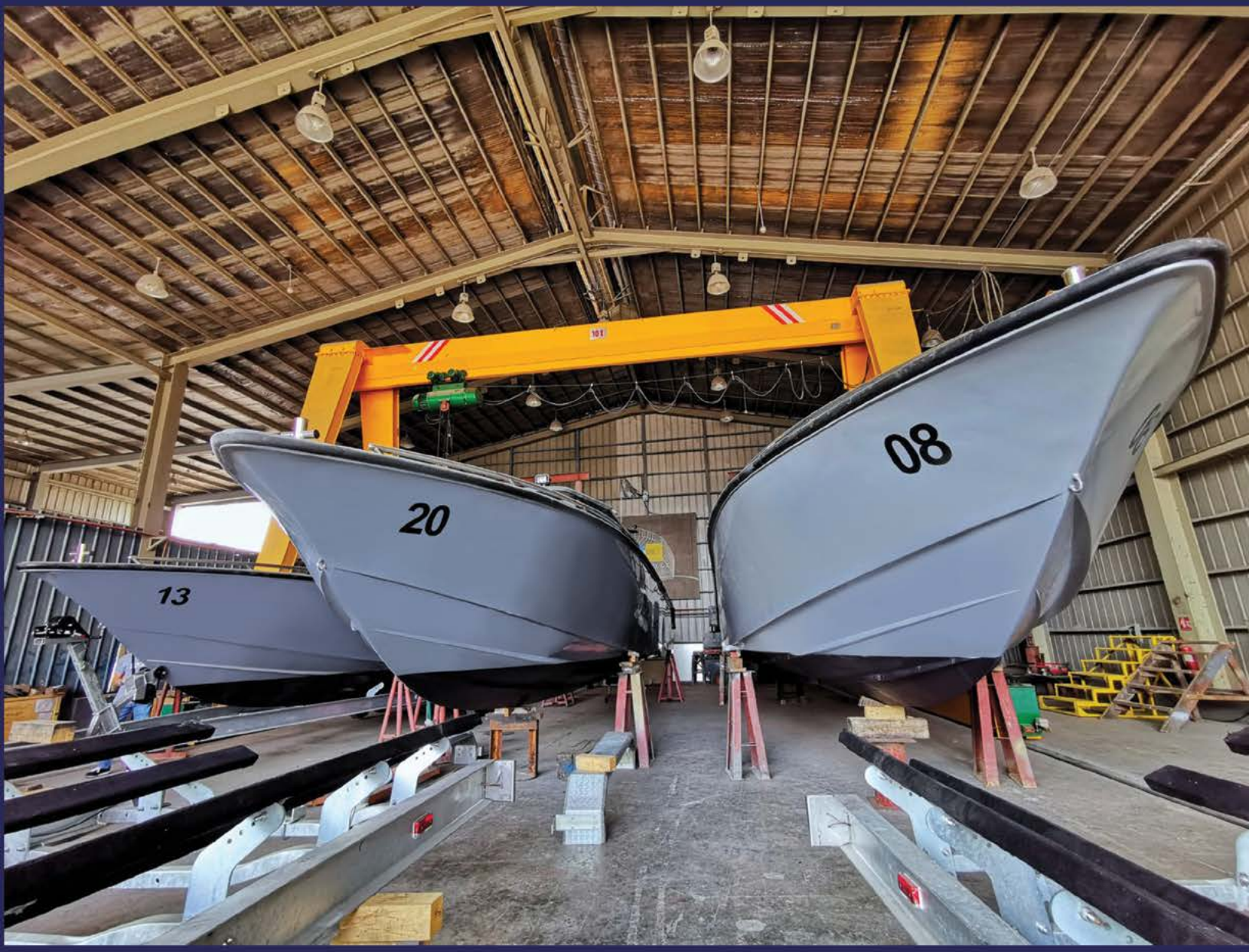

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ABOUT THE COVER

The shipping industry contributes to almost 3% of global greenhouse gas (GHG) emissions annually. If it were a country, the shipping industry would be considered the 6th largest emitter. This form of transport, however, is central to the movement of goods, with around 90% of global trade carried on ships, and private and public stakeholders are working hard to figure out how to make it more sustainable globally. Maritime decarbonization is the process of reducing GHG emissions from the global maritime sector, with an overall goal of placing the sector on a pathway that limits the global temperature rise to 1.5-degrees Celsius. For the shipping industry to meet that 1.5 degrees Celsius target in line with the Paris Agreement, the shipping industry must meet its 2030 breakthrough goal of having scaleable zero-emission fuels make up 5% of the international shipping fuel mix. The use of low carbon alternative fuels can effectively solve the current environmental and energy problems. At present, the alternative fuels available for ships include liquefied natural gas, liquefied petroleum gas, methanol, biodiesel, hydrogen, ammonia. Some shipbuilders are introducing offshore wind sails. Currently, the shipping industry is partially on course, but there are a few bottlenecks to tackle to ramp up more impact as 2030 is fast approaching.


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RESTRUCTURING DEFENSE FORCES FOR MARITIME DOMAIN PROTECTION

by VAdm Emilio C Marayag Jr AFP(Ret)

One of the pillars of the 1995 and the amended AFP Modernization Law is force restructuring and organizational development. The original law focused on external defense given the transfer of the Internal Security Operations (ISO) from the AFP to the newly created Philippine National Police. Through Congressional Joint Resolution No. 28, the ground forces were supposed to be reorganized into 3 infantry divisions and 8 separate infantry brigades. However, the ISO responsibility was reverted back to the AFP and the force restructuring program never took place. More infantry divisions and brigades were activated, as well as joint command headquarters.

The recent frequent intrusions and eventual control of some of the nation's maritime areas by a neighboring state and the dwindling elements of the local communist movement, including the death of its top ideologue, are positive indications that defense forces need to be restructured to prevent further diminution of food and mineral resources in our maritime areas.

Napoleon Bonaparte once postulated *"the tactics of war should be changed every 10 years to retain its superiority."* Those "tactics," likely referring to doctrines, normally lead to force restructuring and organizational development. Revisionist states like China and Russia, understand this fully as they find ways to seek additional power or influence over other states. For example, China in 2017 restructured its ground force-centric, infantry-heavy, and low-technology military into a joint-command, networked, and high-technology force. It reduced its manpower by 13%, created the PLA Rocket Force, Strategic Support Force, Logistics Support Force, and harnessed civilian science and technology for integration into military operations. It reorganized its army divisions and regiments into brigades for operational flexibility, and strengthened its maritime forces by putting its Coast Guard (CCG) and People's Armed Forces Maritime Militia (PAFMM, or CMM) under the Military Commission for better command and control. China's concept of modernization includes testing and application of military theories, reviewing and refining organizational structure, training units, educating military personnel, and improving weaponry. On the other hand, the Russian invasion of Ukraine threatens peace and stability in Europe and the whole world in general. Russia's failure to decisively defeat Ukraine's defense forces reflects its rigid, outdated doctrines that makes victory difficult to predict.

In the January 2023 issue of Maritime Review, retired Air Force Major General Melchor Rosales wrote an article on the need to "reshape" AFP, the operational plan to defend our patrimony. He introduced a formula: "EOP = 2I + D + CGZ" as a basis to enhance defense forces' capability. EOP means Expanded Operational Paradigm; 2I represents the core functions of the AFP: counter Insurgency and counter Invasion; D refers to building up Deterrence capabilities to prevent further maritime encroachment; and CGZ stands for Counter Gray Zone capabilities. The 2Is are the AFP's principal missions. The D and CGZ are the proposed additional missions.

The above proposal will not totally diminish counter Insurgency, counter Invasion, and counter gray zone efforts on land territories but will give more focus to defend the maritime zones where substantial natural resources are found. It will allocate some naval and air force personnel, defense equipment, tools and platforms to enhance maritime domain awareness to prevent more intrusions and to counter gray zone operations under a joint command set up.

A new joint command will have geographic areas reckoned from the edge of the territorial sea up to the EEZ and ECS. It will concentrate on sovereignty patrols and countering gray zone operations within our maritime borders. In case of encountering unfriendly naval and air forces the proposed joint command will employ available platforms and weapons while waiting for more suitable delivery platforms and lethal munitions. This joint command will formulate counter gray zone operating doctrine to serve as the authority to train, deploy and employ forces assigned to it. With maritime areas beyond territorial sea outside the responsibility of existing unified commands, counter insurgency operations and training and organizing the police forces to assume internal peace and security duties will be hastened. Land-based counter-gray zone concerns can then be fully addressed. Likewise, the training and preparation of our reserve forces for counter invasion will be expedited.

Many security analysts view that gray zone operations cover not only the maritime domain (island building, occupation, maritime militia, blockage) but a lot more like election meddling, economic coercion, cyber espionage, debt dependency, forced technology transfer and others. The gray zone operators employ tools such as proxy forces, information warfare (using the mainstream and social media to sow doubt, dissent, misinformation and build false narratives), corruption of politicians, economic means (cutting energy supply, infrastructure projects without viable economic returns and employing their own workers), and shaping the civil society (Confucius Institutes, Russian Orthodox Church).

China's gray zone strategy in South China Sea consists of 4 reinforcing actions:

- ignore the 2016 Arbitral Ruling;
- reinforce control of occupied and artificially built islands employing its Coast Guard and Maritime Militia;
- use economic leverage to demand compromise; and
- squat in the occupied features and wear off other claimants.

To China, gray zone operations are meant to maintain stability, protect its "rights," and are considered essential to its security and guarding operations.

To counter gray zone operations these security analysts also point out that upon spotting the gray zone actions, responding boldly will minimize their effects. They suggest several techniques:

- transparency to draw attention to the coercive actions;
- deterrence;
- preparation and preemption to expose the action; and
- integrated actions using the "whole of society" approach, including strengthening national identity, with early and bold action.

Some members of The Maritime League are consistently voicing out the importance of following the rule of law, the need for transparency in government actions to counter China's gray zone tactics, and the benefits of having a defense ally and security partners. Sadly, some media commentators and academics appear biased in supporting non-Filipino narratives by highlighting the disadvantages of fulfilling our defense treaty obligations while overlooking the creeping invasion of our maritime zones and setting aside the favorable population support to the rule of law and to our ally.

The force restructuring and organizational development entail consolidation of maritime forces. China has 3 seagoing forces: PLAN, CCG and CMM,k under one command and control body, the Military Commission. The country has 2 but with separate command and control. Barely ten years after China consolidated its maritime forces it had established "command" of the South China Sea threatening freedom of navigation therein and continuing its creeping invasion. Among the claimant nations, Indonesia and Vietnam made significant bold responses –burning fishing boats and using naval ships to confront the CCG and CMM– that deter further Chinese presence in their maritime areas.

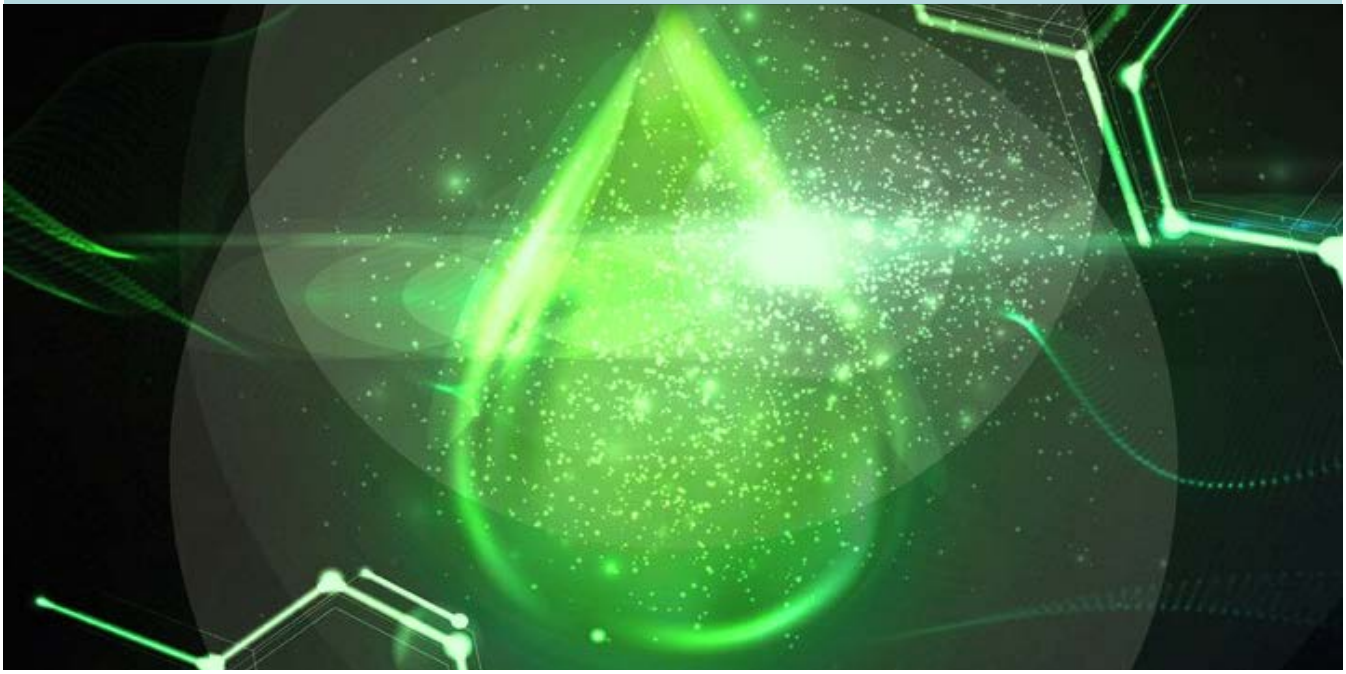
Up north, the Japanese self-defense and maritime safety assets challenge CCG and CMM ships to assert their position against poaching their borders. Our only defense ally has been asserting the freedom of navigation provision of the UNCLOS and other international laws. Some EU nations have sent their naval contingents to send a strong message that the rule of law must be upheld by the international community.

With growing support from other friendly nations, we must show our unequivocal position that we are also prepared to do our share by restructuring our defense forces. The PCG may have to be transferred to the National Defense Department and further to the AFP in the interest of efficiency, effectiveness, and economy. The U.S. Coast Guard used to be with the Treasury Department, was then moved to the Department of Transportation, and finally to the Department of Homeland Security in 2001. The maxim of Napoleon Bonaparte on "changing tactics in war every 10 years … to retain superiority" may be a thing to ponder, and the sooner the better. Ω

THE 'FOURTH PROPULSION REVOLUTION' AND PREPARING FOR A GREEN MARITIME INDUSTRY

by Standard Club

How the maritime industry is tackling the issue of becoming greener, two industry experts offer their insights on alternative fuels and decarbonization in shipping.



Decarbonization is fast approaching. All industries are having to adapt and maritime is no different. International, national and regional regulations are in progress, alternative fuels in development and operational practices under scrutiny.

David Roberts, Managing Director of Standard Asia, sat down with Professor Lynn Loo, CEO of the Global Centre for Maritime Decarbonization (GCMD), a Singapore based NGO formed last year, to discuss the "the fourth propulsion revolution" and its implications for shipping in the latest Alongside podcast.

Professor Loo, explained that her center's mission is to help the international shipping sector eliminate its greenhouse gas emissions. *"We do this by helping shape future fuel standards by financing first-of-a-kind projects. And by piloting low carbon solutions and technologies under real-world operation conditions and the ideas,"* Professor Lynn said.

David added that the IMO's intentions signaled that the industry and the club needed to "develop its own expertise in this important area so that we're in a position to advise and assist our members in the transition."

GCMD is looking for support to participate in pilot schemes ranging from low-level financing to active involvement in new energy trials. *"We are a group of engineers and scientists. So we can do the due diligence, understand the pain points and scope pilots so we can address these,"* Professor Lynn added.

Members of Standard Club, a specialist marine and energy insurer, are being offered guidance and assistance by the club in adopting alternative fuels.

Administrative hurdles. Many parts of the industry are "ready for the transition," David Roberts explains. Others, however, are less ready. Nevertheless, the extent of the challenge is significant, which is why Standard Club has been promoting a collective response.

Professor Lynn Loo

"We're trying to make up for lost time by doing a whole load of stuff in a concise period," David Roberts told the podcast. According to David Roberts, a high proportion of the Standard Club members show they are either ready or will shortly be prepared in anticipation of the January 2023 deadline. But financial and logistical challenges remain.

Professor Lynn Loo explained that there is a reliance on stakeholders and external players for shipping to decarbonize.

Zero carbon fuels are a final goal and green hydrogen, in particular, has many end applications for every industry. One is to generate green fuels, whether ammonia, methanol, or any synthetic fuels, for the shipping sector.

The drive towards green fuels is thus a double-edged sword. Shipping firms have every interest in taking the necessary steps, but the development of many of these energy sources is coming from elsewhere.

"We're sort of at the mercy of players outside the sector. It requires us to think about new infrastructure because these are new fuels that we've not used as bunker fuels before," Professor Lynn said. David Roberts added that the new technologies and fuels, while available, are still effectively experimental.

GCMD is trialing some, but the infrastructural base is not currently sufficient to deal with them, and global-scale revision is a challenge in itself. Vessels and ports across the world are built to rely on traditional energy and a move away from that will require new technologies, ship and engine designs.

"We're going through effectively a fourth propulsion revolution. First, the world developed through coal, and steam, then to oil, and now we're looking at zero-carbon fuels," David Roberts said. All of these logistical challenges are present even before one considers the financial cost and who is willing to be the first to trial these new energies.

"This is why organizations like GCMD are so important," Professor Lynn said.

GCMD is looking at ammonia as a potential future for your green shipping. The first engine is said to be available in 2024, and the first ship in 2025. Ammonia has been widely hailed as a potential escape from fossil fuel entanglement, but the lack of safety associated with bunkering ammonia as a marine fuel has historically been problematic.

"We realized quickly that we can't actually do a pilot to bunker ammonia because there are no safety guidelines associated with bunkering ammonia and using ammonia as a fuel," Professor Lynn said.

This is a microcosm of the problems the industry faces: from testing a new fuel to drawing up basic safety guidelines for its use, there are many hurdles to be jumped before a new fuel type can be adopted.

Adapting insurance. *"The P&I Club system has been going for about 150 years; we have adapted our cover always to meet the needs of new challenges, new situations, for the protection of our members,"* David Roberts said.

David Roberts

The primary risks of introducing new fuels are injury, illness or death risks to the crew. Others are pollution, environmental damages, fines, and other related penalties imposed by international authorities for breach of the statutory requirements.

P&I coverage is already set up to respond to many extreme situations. However, there is an issue that emerging risks and potentially unforeseen risks are not considered. This is where the flexibility of mutual insurance is most essential.

"If it becomes necessary to tweak or enhance the cover that we give to respond to, to particular risks that we don't yet fully understand or not fully be aware of, at this point in time, then we would consider such adjustments," David Roberts added.

Brighter shores. Rather than frustration, there is broad enthusiasm for the green shift, the experts said. If anything, IMO targets are being criticized for not being harsh enough, which could result in late compliance.

Professor Lynn explained that GCMD intends to accelerate their journey towards alternative fuels. The question of decarbonization is no longer "if." It's "how fast."

"There is optimism in saving the planet," David Roberts said. "Higher oil and gas prices will probably spur increased exploration and development, but by 2050, we should be looking at a situation where at least half of global energy supply is coming from non-fossil fuels."

"It is very much about partnership. We live in an ecosystem, a maritime ecosystem, and indeed a wider economic, financial ecosystem, and we all have to support each other," David Roberts added.

Professor Lynn agreed, referring back to the integrated nature of maritime.

"Shipping is such an integral part of the global supply chain. If we don't decarbonize, many sectors can't decarbonize," Professor Lynn said.

"Alongside developing alternative propulsion, both GCMD and Standard Club have the ability to raise awareness," she added.

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Source: *https://www.standard-club.com/knowledge-news/the-fourth-propulsion-revolution-and-preparing-for-a-green-maritime-industry-4754/*

THE SUSTAINABILITY IMPERATIVE

by Watson Farley and Williams

Following the successful launch in February 2021 of our award-winning in-depth report The Sustainability Imperative, now more than ever we are seeing how the maritime sector is exposed to the impact of global mega-trends such as climate change and the rise in international trade tensions.

Exploring how those within the industry – owners, charterers, financiers and investors – grapple with the current and anticipated environmental, social and corporate governance challenges, and what they mean for the industry, forms the basis of our follow-up report.

The opinions of circa 500 industry participants have once again been surveyed and we are excited to share these insights with you in our highly anticipated report The Sustainability Imperative – Part 2.

The Sustainability Imperative – Part 1. Sustainability concerns have rocketed up the shipping agenda over the past decade, with environmental, social and corporate governance (ESG) issues already influencing financing decisions, fleet renewal and regulatory change across the industry.

Decarbonization of shipping is by far the most complex and pressing area. Most of the focus to date has been on the 'E' in ESG, but the 'S' (Social) and 'G' (Governance) elements also present growing challenges to the industry in areas such as transparency, diversity and crew welfare.

Some of these problems are down to simple organizational choices, but the environmental challenge – principally the reduction of CO_2 emissions – is too large for any one company, even any one set of stakeholders, to address.

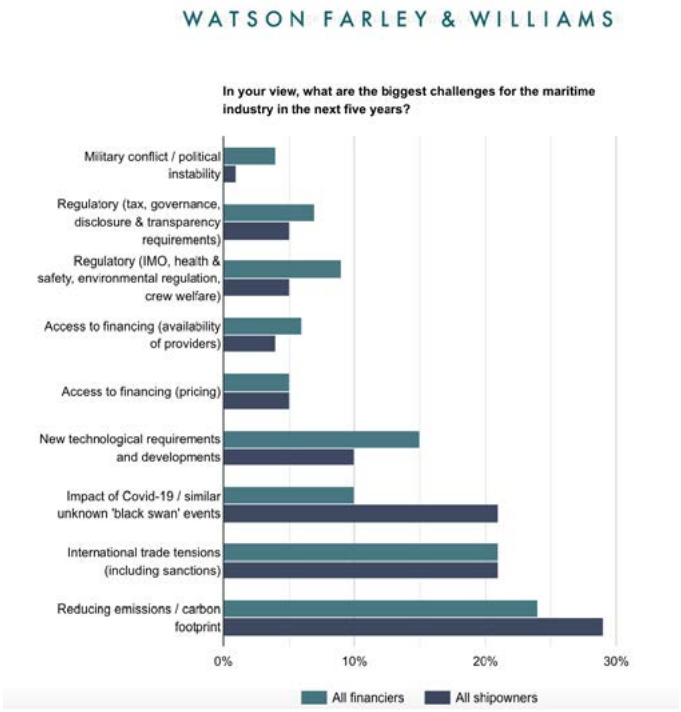

Chart by Visualizer

There are significant technological, financial and regulatory hurdles to clear before shipping has a viable path towards the International Maritime Organization's goal of 50% lower greenhouse gas emissions by 2050, including the recurring question of who shoulders the risk and cost of developing new technologies.

Moreover, shipping faces structural upheaval. Longstanding pressures on smaller shipowners to consolidate may become difficult to ignore in the pursuit of a sustainable industry, while the privacy traditionally embraced by sections of the industry may come under pressure from demands for greater transparency from investors, lenders, regulators and customers.

KEY CONTACTS

GEORGE PALEOKRASSAS *SR PARTNER NEW YORK*

"We decided to focus our global maritime report on the single most important issue affecting the industry – sustainability."
~ George Paleokrassas

Drawing on a series of in-depth interviews and a global survey of 545 senior industry leaders, thi***s*** report examines the shipping world's views on sustainability and governance and what actions it is taking as result. It also asks how these issues might affect the way the shipping sector finances itself and even the very structure of the industry.

LINDSEY KEEBLE *MANAGING PARTNER LONDON*

"The survey points to a wider willingness to collaborate and form joint ventures to share the financial burden of decarbonizing shipping."
~ Lindsey Keeble

90%
of financiers are either going beyond standard governance checks, or are planning to do so in the near future.

SIMON PETCH *PARTNER LONDON*

"There is preference across the board for government support in funding research into alternative fuels and increased efficiencies. That said, public funding for shipping has always been a challenge given the global nature of the industry."
~Simon Petch

The Report Highlights 6 Key Findings:

1. Reducing carbon emissions is the main and most immediate challenge, though trade tensions, Covid-19 and access to finance are also important;
2. Financiers attach more importance to sustainability issues than operators do;
3. Despite commitment to sustainability, traditional ship finance banks have a limited appetite for funding new clean-technology upgrades themselves – or accommodate their financing by others;
4. Decarbonization looks set to drive greater cooperation among industry participants;
5. Industry looks to governments to lead the funding of clean technology and fuel research; and
6. Shipowners are wary of committing to many new green technologies.

Our follow up report The Sustainability Imperative – Part 2, available to download here, shows growing collaboration between industry participants on sustainability. Just over two years later, the industry has a better idea of the trade-offs necessary to achieve net zero, although most of the practical work still lies ahead, and regulatory and technology uncertainties remain. This new research seeks to understand how attitudes have evolved, who is shaping today's ESG agenda and how sustainability squares with new geopolitical challenges.

62%
of shipowners are likely or very likely to form joint ventures to fund innovation in the next five years.

KEY TAKEAWAYS

Drawing on a series of in-depth interviews with shipowners, charterers and financiers and a global survey of nearly 500 executives and senior managers across those communities, our key findings of The Sustainability Imperative - Part 2 are:

Source: **https://www.wfw.com/reports/the-sustainability-imperative/**

SHIPPING INDUSTRY CAN SAVE $50B THROUGH FOUR ENABLERS OF OPERATIONAL EFFICIENCY

by Global Maritime Forum

A new insight brief series from the Global Maritime Forum identifies four actions that maritime and shipping industries can take now to support shipping's transition to a sustainable and resilient zero-emission future.

"We need to clean up shipping supply chains and optimize our operations. To do this, we must collaborate, standardize, and be transparent. Let's share the benefits of slowing down and let's collectively make a difference," says Eman Abdalla, Global Operations & Supply Chain Director at Cargill Ocean Transportation, one of the largest transporters of dry and bulk cargo in the world.

The shipping industry is facing a major transformation as it is working towards full decarbonization by 2050. Short-term actions that improve the operational efficiency of existing vessels – saving fuel, money, and time through changes in ship speed and performance – can play a critical role in reducing emissions today, while also preparing for a more manageable long-term transition which will involve more expensive zero-emission fuels and eventually a price on carbon.

Zero-emission fuels and technologies are imperative for the decarbonization of the industry, but they are not commercially available at scale today. Cutting down on fuel costs by improving the operational efficiency of fleets will be a prerequisite for the adoption of more expensive zero-emission fuels and a foundation for green corridors –routes between major port hubs where zero-emission solutions are supported and shown.

Maximizing vessel and fleet performance through operational efficiency can reduce annual fuel costs by $50 billion at today's prices, according to research. That means up to 20% of fuel costs will be saved and even more if combined with energy-efficient technologies. The research suggests optimizing operational efficiency has potential to reduce annual emissions by more than 200m tons of CO^2. Unlocking this potential is not simple, yet capitalizing fully on operational efficiency will be a prerequisite to achieve 2030 and 2050 emissions reduction targets in line with the Paris Agreement's 1.5 C° ambition.

This **insight brief**, the result of over a year of industry input, provides an overview of the short-term opportunities and barriers to operational efficiencies and takes systems view to explore the role of operational efficiency measures as enablers of shipping decarbonization in the longer term.

Four types of solutions are identified in the brief: (1) better transparency and standardization of performance data; (2) scaling up pilots and best practices; (3) contractual changes to encourage virtual arrival practices when there is a delay at the discharge port; and (4) policies and regulations to enable new business models. Each of these enablers will be explored in the upcoming insight briefs which will dive deeper into the identified solutions and enablers.

The International Maritime Organization (IMO) is expected to adopt a revised greenhouse gas emissions strategy at the MEPC 80 meeting in July 2023 –the most important climate meeting for shipping. While the industry is unsure if the outcome of MEPC 90 will result in the adoption of a low-ambition or high-ambition strategy, the need for short-term operational efficiencies will be crucial for the transition.

"The operational performance of vessels and entire fleets presents a huge opportunity to the shipping industry, but it will require unprecedented levels of disruptive thinking to break through from dialogue to action."
Randall Krantz, Senior Adviser on Decarbonization, Global Maritime Forum

The Global Maritime Forum is an international not-for-profit organization committed to shaping the future of global seaborne trade to increase sustainable long-term economic development and human wellbeing. To serve its mission, the Forum convenes leaders from across the maritime community with policymakers, NGOs, experts, and other influential decision-makers and opinion shapers from all geographies in a community of purpose to discuss collective challenges and to work together on developing new solutions and recommendations for action. To do so, the Forum identifies, develops, and shares new insights and key issues on the global agenda and facilitates collaborative projects and initiatives that can deliver long-term impact and sustainable change. Download the full insight brief **here.** Ω

Source: *https://www.globalmaritimeforum.org/press/shipping-industry-can-save-50-bn-through-four-enablers-of-operational-efficiency*

FUTURE FUELS AND TECHNOLOGY PROJECT TO INFORM GHG STRATEGY

by IMO

The decarbonization of international shipping is a priority for IMO and by mid-2023, IMO aims to have in place a revised and more strengthened Strategy on Reduction of Greenhouse Gas (GHG) Emissions from Ships.

A new IMO project aims to provide an assessment of the state of availability and readiness of low- and zero-carbon ship technology and marine fuels, in order to help inform Member States as they work towards the revision of the IMO GHG Strategy.

The key commitment of the Initial Strategy, adopted in 2018, is to phase out GHG emissions from international shipping as soon as possible.

Embracing technological innovation along with the transition to low- and zero-carbon fuels and/or alternative energy sources will be required to achieve this ambition. Such changes also require consideration of issues such as safety and regulation, pricing and infrastructure availability, lifecycle emissions, supply chain constraints, and the existence of any barriers to adoption.

The preparedness and availability of low and zero-carbon marine fuels will be assessed by the new project

With this in mind, IMO's Marine Environment Division has launched a project providing technical analysis related to the feasibility of pathways to shipping decarbonization.

The Future Fuels and Technology for Low- and Zero-Carbon Shipping Project (FFT Project) is a partnership project being implemented by IMO with funding from the Republic of Korea. Expected to run until 2025, it consists of three main phases:

- A study of current and projected global uptake and dissemination of low- and zero-carbon marine technology and fuels;
- Identification of and support for incentives and regulatory mechanisms, including safety and training issues, to promote the uptake of alternative fuels and technology including mid- and long-term reduction measures; and
- Promotion of technological cooperation –for example, through pilot projects– and organization of outreach activities to reinforce mutual understanding and cooperation between developed and developing countries and the global shipping industry.

Readiness and availability of alternative energy options

In June 2022, MEPC 78 noted the need for more information to support the revision process of the Initial GHG Strategy.

To that end, the first phase of the FFT Project includes an assessment of the state of readiness and availability of low- and zero-carbon ship technology and marine fuels.

The study will evaluate demand as well as capacity developments related to low- and zero-carbon technologies, whilst also assessing their commercial and technological preparedness. The latter will be analyzed using three scenarios of possible ways to reduce CO2 emissions by 2050:

- IMO's Initial Strategy Scenario (IMO);
- Net Zero Emission Scenario (NZE); and
- Zero by 2050 Scenario (ZERO).

This research, due to continue until June 2023, is funded by the Voyage Together Trust Fund and IMO's voluntary multi-donor funding mechanism, the GHG TC-Trust Fund. The results will be made available and may inform discussions on GHG reduction goals in the Revised IMO GHG Strategy.

IMO has contracted Ricardo-AEA Ltd and DNV to undertake the research study.

Future fuels and technology online information hub

A comprehensive website is being developed, which is intended to act as a dedicated online hub for IMO members to find and share information and data on the uptake of alternative fuels and new technology as part of the decarbonization of shipping in the mid and long-term scenarios.

The site will provide easy access to materials of particular use to developing States on the latest advances in the decarbonization of the maritime sector. It will also provide education and training materials, as well as details of related activities and events. Ω

FUTURE FUELS & TECHNOLOGY PROJECT FOR LOW/ZERO CARBON SHIPPING

Source: *https://www.imo.org/en/MediaCentre/PressBriefings/pages/Future-Fuels-and-Technology.aspx*

ALTERNATIVE FUEL USE - REGULATORY STATUS MAPPED

by IMO

Ammonia, hydrogen, ethane and Dimethyl Ether (DME) are among the alternative marine fuels which may need future regulatory work. This assessment is the result of a regulatory mapping exercise conducted by the Alternative low- and zero-carbon fuels workstream of the GreenVoyage2050 Global Industry Alliance to Support Low Carbon Shipping (Low Carbon GIA), with inputs and contributions from the International Chamber of Shipping (ICS).

The assessment of how alternative marine fuels and energy converters feature in key IMO Conventions and regulatory instruments aims to inform and support IMO member States and the wider maritime sector in identifying and addressing potential regulatory challenges that could be encountered when considering the use of a particular alternative marine fuel.

The outcome of the mapping exercise can be found on the GreenVoyage2050 website in a tabular format using a traffic light colour coding system that depicts the current regulatory readiness levels categorized as Low, Medium, and High. The categorisation was agreed by members of the Alternative low- and zero-carbon fuels workstream of the Low Carbon GIA.

Principal IMO Conventions examined included the International Convention for the Safety of Life at Sea (SOLAS), the International Convention for the Prevention of Pollution from Ships (MARPOL), the International Bulk Chemical Code (IBC Code), the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code) and the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code).

Fuels and energy sources considered include the conventional fuels diesel/gas, oil/fuel oil, bio/synthetic liquid diesel fuels, methanol (C3OH), ethanol (C2H5OH), dimethyl ether (DME or C2H6OH), propane (C3H8) and butane (LPG or C4H10), methane (CH4/LNG), ethane (C2H6), ammonia (NH3), and hydrogen (H2).

This mapping exercise has identified some areas where further regulatory work may be required by IMO, but potentially also by other standardization and certification organizations. Some of these areas include the further development of safety guidelines for on-board use of alternative fuels, matters related to quality of alternative fuels, lifecycle GHG emissions and development of engine standards and assessing the possible impacts and risks of spills of alternative marine fuels.

The Low Carbon GIA, which brings together leading ship-owners and operators, classification societies, engine and technology builders and suppliers, big data providers, oil companies and ports, recognizes that IMO has already initiated concrete work to address a number of these matters, whereas some others require concrete proposals to advance discussions in the different IMO bodies.

It should be noted that the identification of a low regulatory readiness level for a particular fuel does not necessarily indicate a potential barrier for the uptake of the fuel, but simply identifies scope for future work to be done by IMO and other stakeholders as appropriate.

Tore Longva, Lead of the Low Carbon GIA Alternative low- and zero-carbon fuels Workstream said:

"Under this work stream, Low Carbon GIA members from across the industry have contributed their expertise to undertake several activities to-date to support the adoption of alternative fuels for low carbon shipping. This regulatory status assessment with respect to the use of alternative fuels represents a crucial piece of work undertaken by the Low Carbon GIA to support IMO Member States in identifying potential regulatory gaps which will need to be closed in the future."

In the context of the recently launched Future fuels and technology for low- and zero-carbon shipping Project (FFT Project), IMO is addressing a number of the identified regulatory gaps in support of discussions in IMO's regula tory committees.

The Low Carbon GIA is a public-private partnership that operates under the framework of the GreenVoyage2050 Project. The aim of the Low Carbon GIA is to develop innovative solutions to address common barriers to decarbonizing the shipping sector.

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Source: *https://www.imo.org/en/MediaCentre/Pages/WhatsNew-1841.aspx*

GMF EVALUATES MULTI-FUEL CHOICES ON THE PATH TO NET ZERO

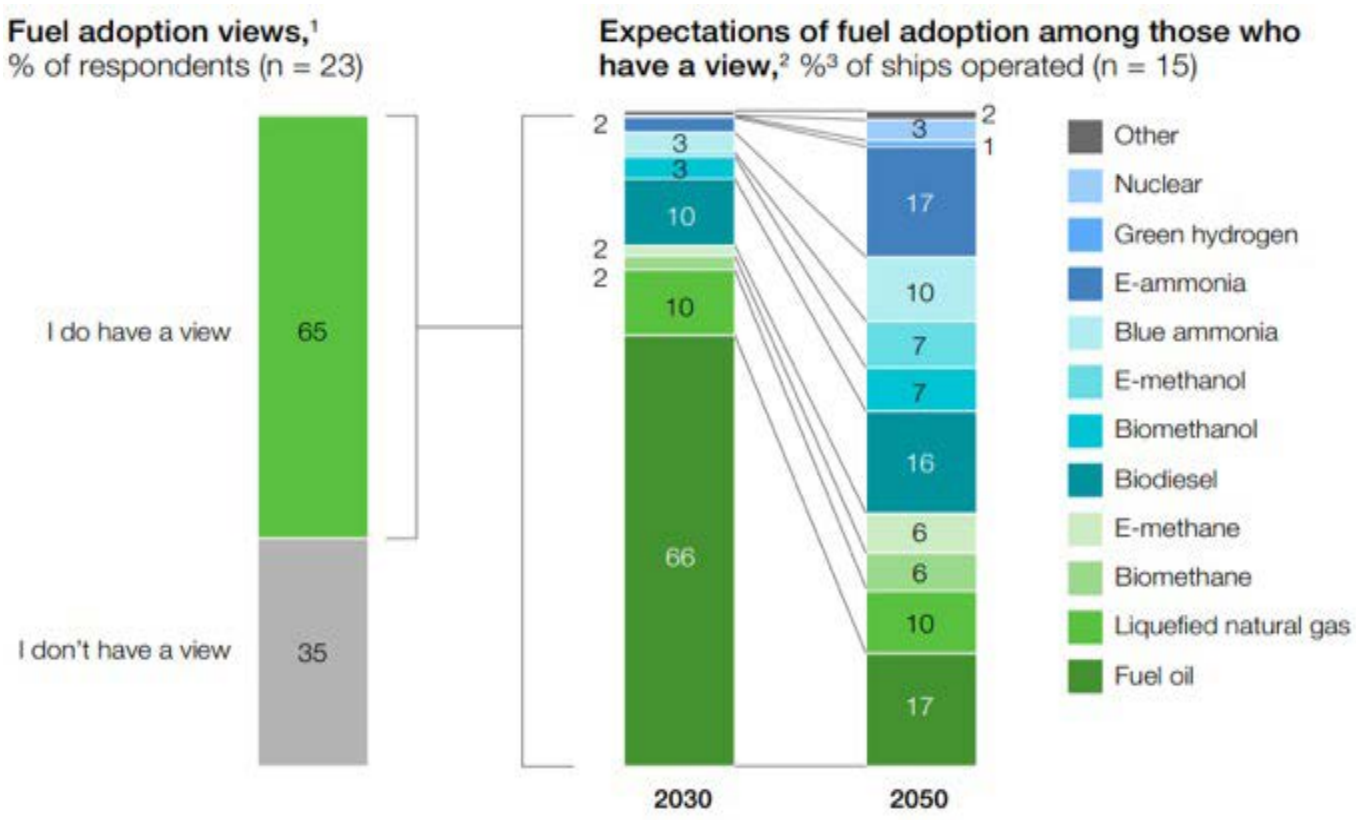
by SAFETY4SEA

Global Maritime Forum (GMF) released a study in which a multi-fuel future for the shipping industry on the path to zero emissions is evaluated. To understand how shipping industry leaders are thinking about future fuels and what their plans and projections are to adopt cleaner fuels and efficiency-boosting technologies, the Global Maritime Forum, the Global Centre for Maritime Decarbonization, and the Mærsk Mc Kinney Møller Center for Zero Carbon Shipping conducted a survey of major shipping companies, with analytical support by McKinsey & Company.

Surveys like this play a crucial role to inform the industry and public, and support shipping's transition to a zero-emissions future … said Professor Lynn Loo, CEO of the Global Centre for Maritime Decarbonization.

The most striking result from the survey is a multi-fuel future: the need to prepare for fleets operating on three or more fuel ''families.'' The most common mix by 2050 represented by 4% of respondents is a fleet concurrently running vessels on fuel oil/ biodiesel, methane, methanol, and ammonia—a step-change in fuel diversity.

Two-thirds of shipping company respondents have views on what their fuel usage will look like in 2030 and 2050, although expectations vary:



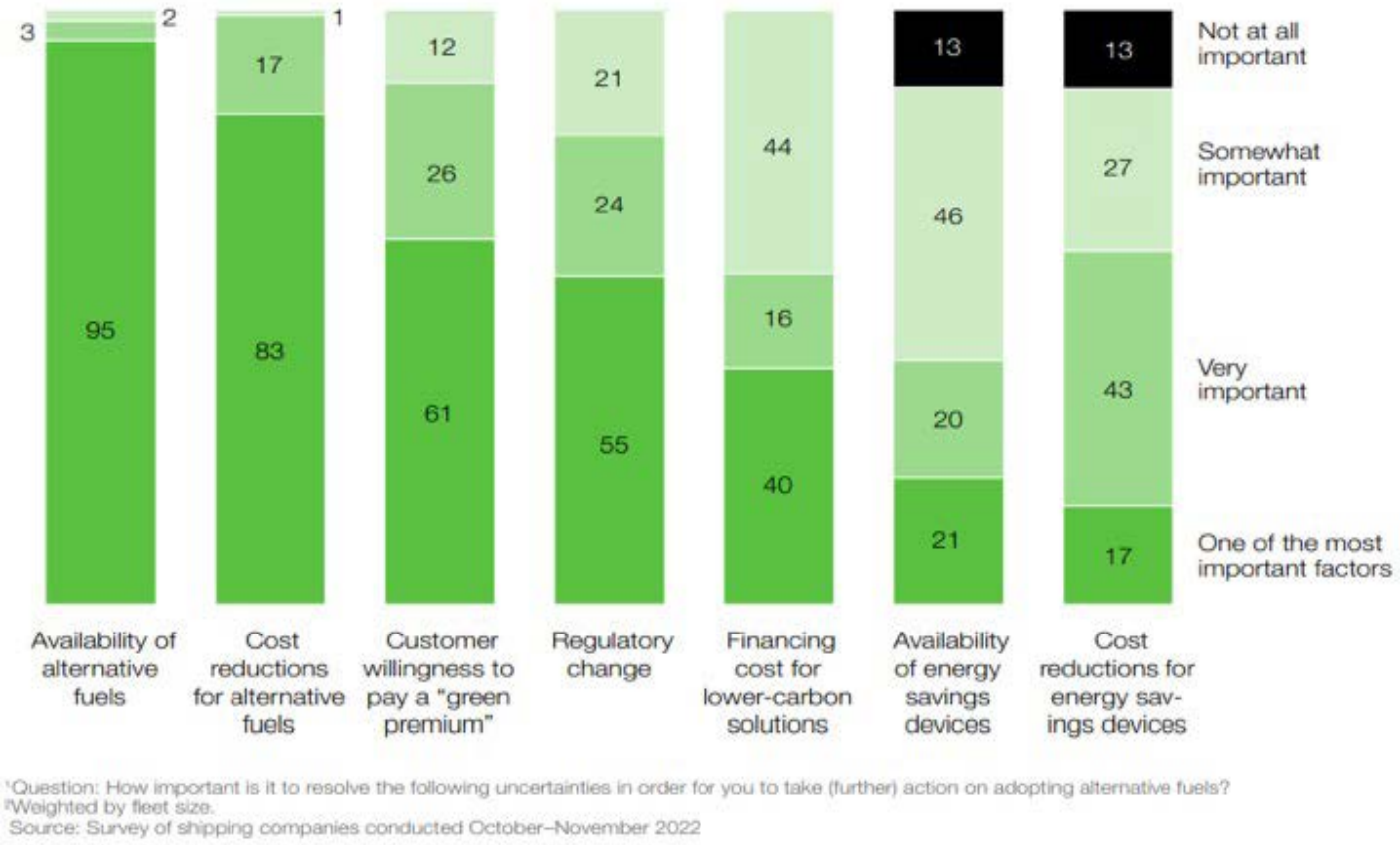
[1]Question: Do you have a view on what types of fuel your fleets will run on in 2030 and 2050?
[2]Question: What is your expectation of your fleet's adoption of the following fuels?
[3]Weighted by fleet size.
Source: Survey of shipping companies conducted October–November 2022

Photo Credit: GMF

The industry will need to think strategically about how to operate multi-fuel fleets and green fuels must be introduced in a safe and cost-efficient manner to make them the preferred alternative to current petroleum products.
… said Bo Cerup-Simonsen, CEO of the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping

Other findings from the survey suggest that internal combustion engines will remain the preferred technology through 2050, and that the speed of shipping industry's adoption of alternative fuels will be a function of the cost gap with fossil fuels and the degree of availability of such greener alternatives at ports worldwide.

Fuel availability and cost, customer willingness to pay, and regulatory change are top priorities for shipping companies.



[1]Question: How important is it to resolve the following uncertainties in order for you to take (further) action on adopting alternative fuels?
[2]Weighted by fleet size.
Source: Survey of shipping companies conducted October–November 2022

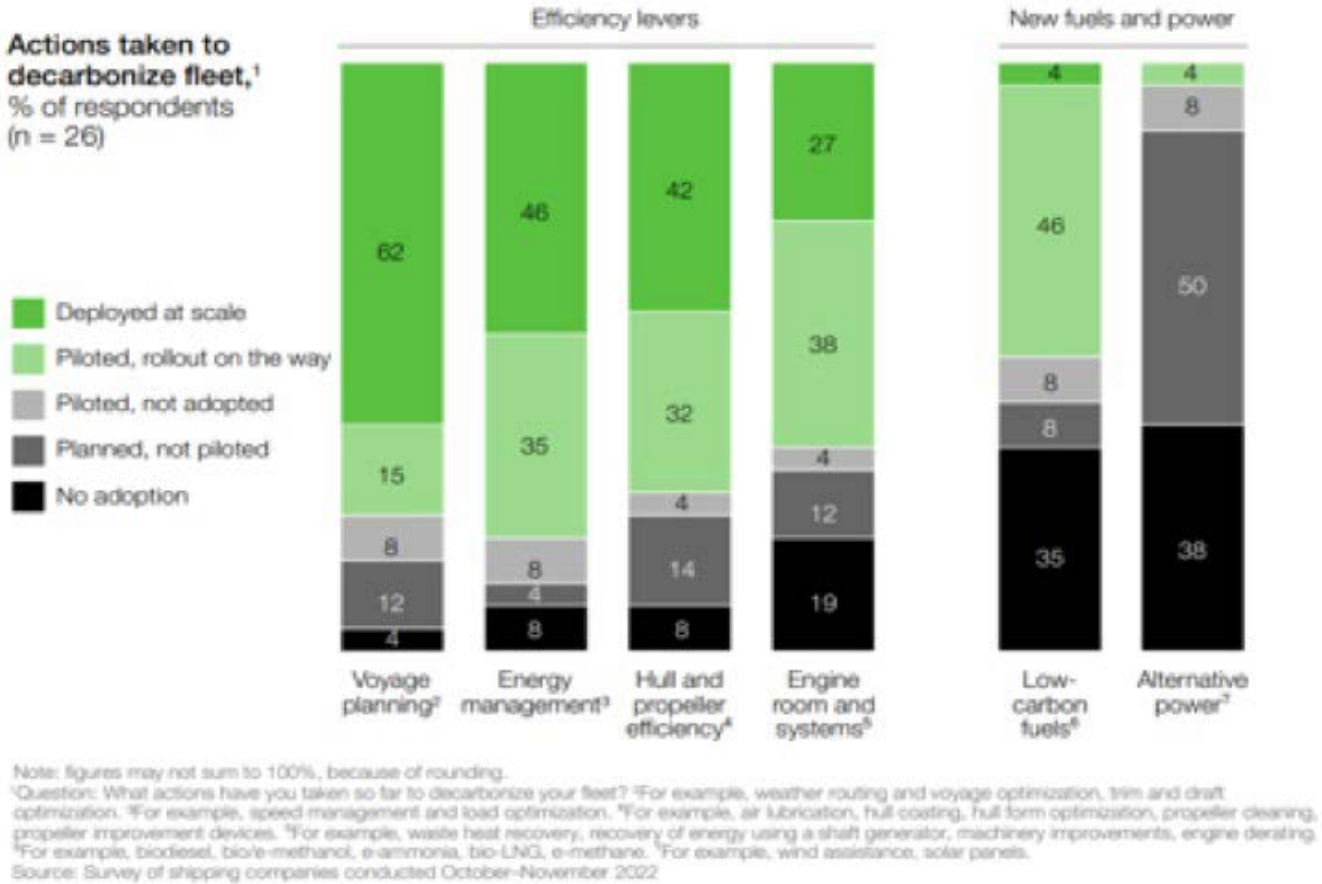
Photo Credit: GMF

Shipping companies should strongly consider doing more to encourage among their customers a greater willingness to pay for green shipping services. More transparency about the life cycle greenhouse-gas footprint of different fuels might help give customers confidence to pay for greener services, potentially paired with a "book and claim" system to ensure integrity, the report highlights.

- **Fuel producers.** Future fuel scenarios will be determined by both the demand side and the supply side. Choices made by fuel providers will play a major role.
- **Ports** (and the bunkering companies that operate within them). Ports and bunkering providers might prioritize making individual fuels available in the near term—due to the existence of nearby production facilities, participation in green corridors that require use of particular fuels, or national decarbonization plans and incentives. But in the longer-term, ports that wish to attract the greatest possible number of future vessels should prepare for the need to offer multiple fuel types.
- **Policy makers and regulators.** The single most important factor in fuel choice will likely be the rate of decarbonization required by regulators. Policymakers and regulators can help close the cost gap between green fuels and fossil fuels and create a "level playing field" for all shipping companies to accelerate their adoption of green fuels.

The role of regulators will be crucial in this process, in particular the outcome of the ongoing negotiations at the IMO
… said Johannah Christensen, CEO of the Global Maritime Forum.

Shipping companies report widespread adoption of efficiency levers, but few have taken actions to adopt new fuels and alternative power systems.



Note: figures may not sum to 100%, because of rounding.
[1]Question: What actions have you taken so far to decarbonize your fleet? [2]For example, weather routing and voyage optimization, trim and draft optimization. [3]For example, speed management and load optimization. [4]For example, air lubrication, hull coating, hull form optimization, propeller cleaning, propeller improvement devices. [5]For example, waste heat recovery, recovery of energy using a shaft generator, machinery improvements, engine derating. [6]For example, biodiesel, bio/e-methanol, e-ammonia, bio-LNG, e-methane. [7]For example, wind assistance, solar panels.
Source: Survey of shipping companies conducted October–November 2022

Photo Credit: GMF

The companies surveyed roughly represent twenty per cent of the world's total fleet capacity; they own and operate container ships, tankers, dry bulkers, gas carriers, car carriers, cruise ships, tugs, and offshore vessels. The survey paints a multi-fuel picture of the industry that is striking. The onus is on each shipping company to develop its own proprietary view of its future fuel mix in line with its business strategy and decarbonization ambitions.

To reach a zero-emissions future, the industry needs a more ambitious regulatory framework with clear reduction targets and supporting policies to close the cost gap between green fuels and the fossil fuels that currently power the global fleet.

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Source:
https://safety4sea.com/gmf-evaluates-multi-fuel-choices-on-the-path-to-net-zero/?utm_source=newsletter&utm_medium=email&utm_campaign=SAFETY4SEA+Morning+fix+12%2F05%2F2023++++

BEACON EXPO 2023

Maritime League

In response to the growing opportunities in shipbuilding and waterfront development, The Maritime League as the organizing body, in partnership with the Department of Transportation (DOTr) and its attached agencies, will be hosting the BEACON EXPO 2023 on 6-8 September, 2023 at the SMX Convention Center, Mall of Asia Complex, Pasay City, Philippines. This Conference and Exhibition, consistent with the League's objectives, aims to advance the interests of the Philippine maritime industry, promote maritime development and safety through better information, cooperation, and synergy of effort among the stakeholders of the maritime industry.

BEACON EXPO 2023 will be showcasing the following event highlights:
More than 5,000 trade visitors and 150 exhibiting brands!
3–day Maritime Conferences
B–Level and C-Level Conference Attendees

BEACON EXPO 2023 will feature discussions on the latest issues and developments in the Maritime, Oil & Gas, and Defense Industries.

Some quick facts about the Philippines Maritime and Shipbuilding Industry:
The Philippines is ranked 4th in the world in Shipbuilding and 1st in South East Asia per the UNCTAD June 2022 report.
Maritime transport is the backbone of international trade and a key engine driving globalization and competitiveness. Around 80% of global trade by volume and over 70% by value is carried by sea, as per the UNCTAD estimate.

A copy of our BEACON EXPO 2023 event brochure is inserted in the Maritime Review for your perusal.

As of mid-January 2023, there are currently 20 corporations that have reserved a booth at the BEACON EXPO 2023.

To book your booth, please feel free to contact us by phone at **8 7157412** or email to: **mlbeacon2023@gmail.com** for more information.

Thank you and we look forward to welcoming you to the **BEACON EXPO 2023!**

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MARINA PARTNERS WITH UPOU TO ELEVATE DELIVERY OF MARITIME EDUCATION AND TRAINING

by MARINA

The Maritime Industry Authority (MARINA), represented by Administrator Atty. Hernani N. Fabia and OIC Executive Director of the STCW Office, Mr. Samuel L. Batalla, forged a Memorandum of Understanding for institutional partnership with the University of the Philippines Open University (UPOU) represented by Dr. Melinda dela Peña Bandalaria, UPOU Chancellor and Dr. Joane V. Serrano, UPOU Dean for Faculty of Management and Development Studies.

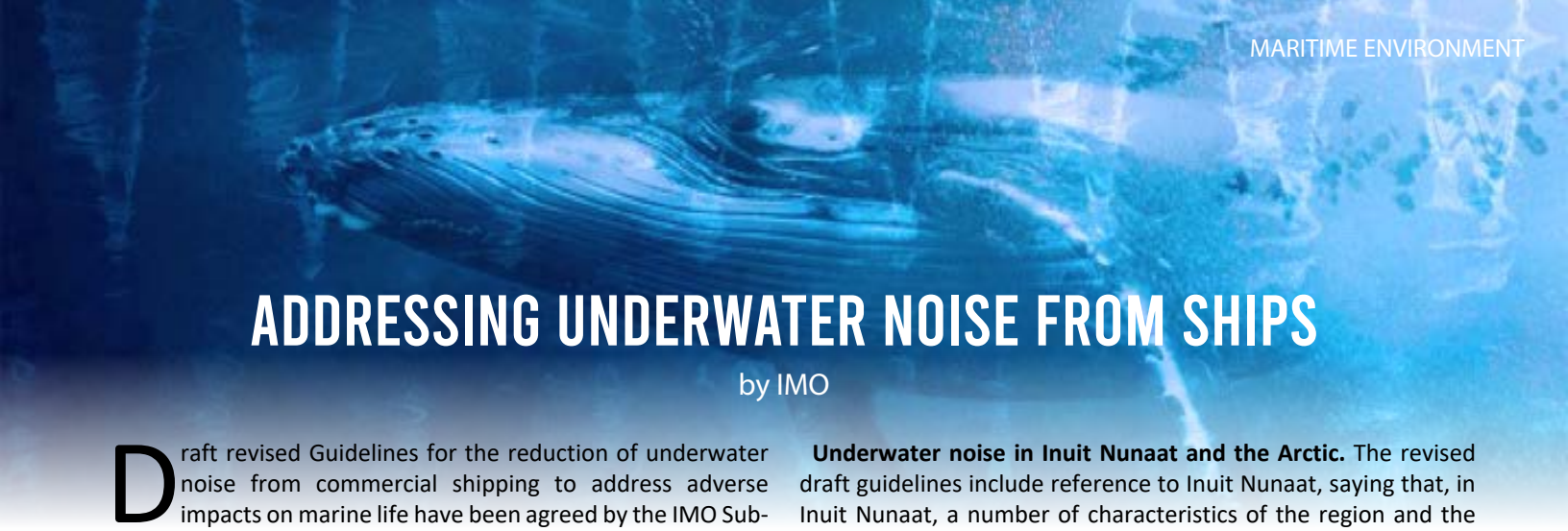
The MOU objectives include joint academic activities including webinars and other trainings; collaborative researches; consultancy and other technical services; and resource and information sharing. Further, the MOU aims to elevate the delivery of maritime education and training through open and distance learning.

The historic signing of MOU on 02-March-2023, coincides with UP Open U's celebration of its 28th Anniversary.

In a statement, Administrator Fabia said *"The MARINA and UPOU both recognize the significant contribution of the maritime industry, especially our seafarers, in nation building."* He also lauded UPOU's commitment to being a "University of the Future" which reflects the institution's commitment to excellence and innovation.

The partnership is in line with UPOU's mandate pursuant to Republic Act No. 10650 (Open Distance Learning Law) which has tasked UPOU to assist relevant national agencies, higher education institutions, and technical and vocational institutions in developing their distance education programs through training, technical assistance, research and other academic programs. Ω

Source: *https://marina.gov.ph/2023/03/02/marina-partners-with-upou-to-elevate-delivery-of-maritime-education-training-through-open-distance-learning/*



ADDRESSING UNDERWATER NOISE FROM SHIPS

by IMO

Draft revised Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life have been agreed by the IMO Sub-Committee on Ship Design and Construction (SDC 9), which met 23-27 January.

The draft guidelines recognize that commercial shipping is one of the main contributors to underwater radiated noise (URN) which has adverse effects on critical life functions for a wide range of marine life, including marine mammals, fish and invertebrate species, upon which many coastal Indigenous communities depend for their food, livelihoods and cultures.

These guidelines provide an overview of approaches applicable to designers, shipbuilders and ship operators to reduce the underwater radiated noise of any given ship. They are intended to assist relevant stakeholders in establishing mechanisms and programs through which noise reduction efforts can be realized.

These guidelines revise the previous guidelines (issued in 2014). They include updated technical knowledge, including reference to international measurement standards, recommendations and classification society rules. They provide sample templates to assist shipowners with the development of an underwater radiated noise management plan.

The draft guidelines will be submitted to the Marine Environment Protection Committee (MEPC 80), which meets from 3-7 July 2023, for approval. The draft guidelines were developed by a correspondence group with further work completed by a working group which met during the Sub-Committee session.

The correspondence group was re-established, to report back to SDC 10 in January 2024, to address the remaining work under the agenda item. It was, in particular, tasked with revising a flowchart on the URN Noise Management Planning process to reflect the Revised Guidelines, and the underwater noise management plan included in appendix 3, to be used as a tool for raising awareness. The group will also finalize and prioritize the provisional list of suggested next steps to further prevent and reduce underwater radiated noise from ships.

The Sub-Committee agreed a work plan which envisages, among other things, identifying ways to implement the Revised Guidelines and increase awareness and uptake; organizing an expert workshop on potential co-benefits and trade-offs that may exist between the reduction of underwater radiated noise from ships and energy efficiency; and developing a plan of action for further work.

Underwater noise in Inuit Nunaat and the Arctic. The revised draft guidelines include reference to Inuit Nunaat, saying that, in Inuit Nunaat, a number of characteristics of the region and the activities within could increase the impacts from underwater radiated noise. This includes potential for icebreaking activities, presence of noise-sensitive species, and potential interference with indigenous hunting rights.

Additional efforts to decrease impacts on marine wildlife are advisable for ships that operate in these areas, including particular attention to reducing the noise impact from icebreaking and implementation of operational approaches and monitoring.

Moreover, the working group developed separate draft guidelines for underwater radiated noise reduction in Inuit Nunaat and the Arctic, with a view to being utilized in the future by interested parties. The draft guidelines recognize Inuit Nunaat as a unique environment and adverse impacts to marine wildlife in this area from shipping noise may be significantly increased as a result. Sound levels throughout Inuit Nunaat are lower than elsewhere, making it more vulnerable to increases from industrial activity.

The Sub-Committee noted the draft.

GloNoise project. IMO's Department of Partnerships and Projects (DPP) later this year will commence a two-year GEF-UNDP-IMO project called the Global Partnership for Mitigation of Underwater Noise from Shipping (GloNoise Partnership), which is aligned with the current work on the review of the Guidelines for the reduction of underwater noise (MEPC.1/Circ.833) (pending approval by MEPC 80, these will then become the Revised Guidelines) and to consider next steps.

The GloNoise Partnership will establish a global stakeholders' partnership in order to address the major environmental issue of underwater noise from shipping. The partnership will include a strong developing countries' element as well as public-private engagement. The specific objective of the GloNoise Partnership is to assist developing countries and regions to raise awareness, to build capacity and to collect information to assist the policy dialogue on anthropogenic underwater noise from shipping. To support this process, data and analysis tools and capacity building materials will be developed, rolled out and implemented globally and in the participating countries.

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Source:
https://www.imo.org/en/MediaCentre/Pages/WhatsNew-1818.aspx

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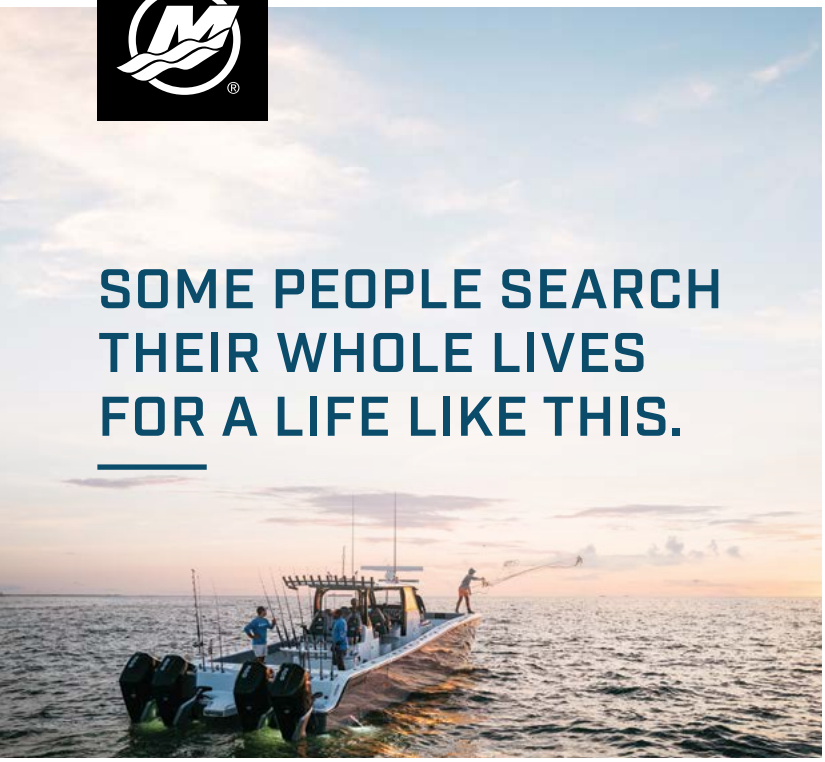
SOME PEOPLE SEARCH THEIR WHOLE LIVES FOR A LIFE LIKE THIS.



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MARITIME POLLUTION, MARITIME THREATS, AND PROTECTION OF THE MARITIME ENVIRONMENT

by Karl M Garcia

For decades, dynamite or blast fishing and cyanide fishing has been destroying our coral reefs , but up to this day it is still widespread though there are efforts to build artificial reefs in the Philippines, the root cause must still be eradicated.

CORAL REEFS ANNIHILATION

Cyanide fishing is harmful. "It is a deadly poison not only to people and fish, but also to other marine animals like corals," deplored Dr. Rafael D. Guerrero III, a fishery scientist with the National Academy of Science and Technology (NAST).

When people talk of corals, they usually think of those structures in the shallow waters of the seas. But these are actually remnants of fragile creatures called polyps, tiny animals that absorb calcium carbonate from seawater and excrete limestone, from which reefs are made.

The ornate, visually stunning structures are vital for the health of surrounding waters. They host microscopic organisms on which larger creatures feed and provide shelter for a variety of marine life like fish, lobsters, octopi, eels, and turtles.

Fishermen use cyanide illegally to catch fish that hide in coral reefs. A study commissioned by the Bureau of Fisheries and Aquatic Resources (BFAR) in 1982 established that two applications of cyanide on coral reefs four months apart caused high coral polyp mortality.

"Unlike blast fishing, which reduces corals into rubble," explains marine scientist Vaughan R. Pratt, "cyanide fishing keeps coral intact, but dead."

Fifty percent of the fish exposed to sodium cyanide die in the reef. The ones caught and later recovered are transferred to clean water, but they are doomed to die within weeks or months because of the damage caused by poison to their internal organs.

Another way to destroy the coral reefs is through Land Reclamation. For every addition of land, there are coral reefs and mangroves destroyed.

MANILA BAY LAND RECLAMATION

The environmental impacts and economic benefits must be balanced, but somehow the environmental impacts outweigh the economic benefits.

Land reclamation expands territories for residential, commercial, and industrial purposes, thus, promises the creation of economic opportunities through massive capital investment, the much-touted needed jobs and livelihood opportunities.

"While proponents of these reclamation projects promise economic development, we see that environmental impacts outweigh economic development," Agham told Business Mirror.

The group said Manila Bay reclamation will adversely affect the environment through mangrove cutting, seabed dredging and dumping of soil on the coast, Agham said via e-mail through its Public Information Officer Jerwin Baure.

According to Agham, other environmental impacts of the project will involve seabed quarrying, or massive dredging of sand beneath the sea in Manila Bay, including those in Bataan and Pampanga, for the filling materials.

"The environmental impacts of reclamation are not only in the proposed site but also [in areas] where the filling materials will be sourced just like in the case in the 'dolomite beach' in Manila wherein the filling materials came from a mountainous area in Cebu," the group told Business Mirror.

Kelvin Rodolfo cited 3 Geological Threats of Land Reclamation and Manila Bay:

1. Even without reclamation, the coastal lands around the Bay continue to subside rapidly because ground water is being pumped out faster than nature can replenish it.
2. The combination of surges and storm waves driven against our coast by passing typhoons.
3. Seismically induced liquefaction.

PLASTIC AND OTHER MARITIME POLLUTANTS

PLASTIC

The Philippines is said to be the top three plastic polluters that end up in the ocean. The usual suspect is the single use plastics so what the LGUs did were banning them per DENR directive. The supermarkets encouraged use of reusable bags, the wet markets banned the use of sando bags, restaurants ask you to bring your own metal straw and so on, but symptoms still persist. The alternatives like the metal straws and metal water bottles are just so impossible to sustain and only the rich can afford. Even reusable bags are inconvenient for some and what they get are using easy to break paper bags and a drop of sweat would easily break the bag. Aside from the indiscriminate garbage disposal by many, reasons like garbage falling from the garbage truck little by little and leaking landfills are also a reality.

OPERATIONAL OIL DISCHARGE FROM SHIPS

Like I said above, majority of maritime pollution comes from land, but still 80 percent of all pollution from ships comes from operational oil discharge.

POSSIBLE SOLUTIONS

Microorganisms that reduce land fill waste and to reduce marine pollution has been proposed and studied.

It is almost the same concept of use of microorganisms in the Bio-degradation and Bio-remediation of marine oil pollution.

PLASMA GASIFICATION OF PLASTICS AND SEWAGE ON CRUISE SHIPS

Plasma gasification has been studied for municipal solid and liquid waste with a system called PAWDS Mobile by Pyrogenesis. There is also a study on the applications of plasma gasification conducted for ship generated waste particularly on cruises ships also by Pyrogenesis and by CE Delft.

OCEAN CLEANUP PROJECT

Even before the Ocean Saviour project, we had the Ocean Cleanup project conceptualized and implemented by Boyan Slat, a Dutch inventor. Although it is still facing many challenges, it is trying its very best to get the job done. The first plastic recycling efforts turned the collected plastic into sun glasses.

THE OCEAN SAVIOUR

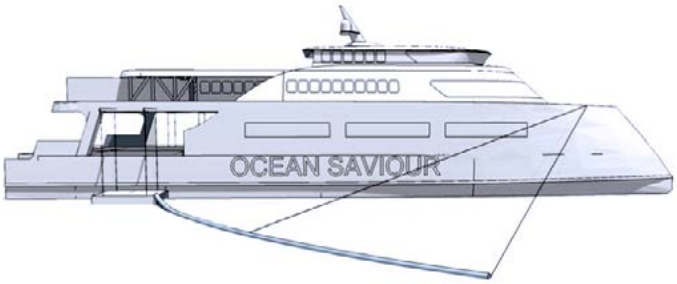


Photo credit: Oceansaviour.org

The project is the brainchild of Richard W. Roberts and Simon White, Founders of TheYatchtMarket.com. Richard Simon conceptualized the project together with some of the world's top Naval Architects and Yacht designers in an attempt to look at new ways to bring together existing technologies to tackle the extra ordinary plight of our oceans.

Ocean Saviour is the world's first, self-powering 70m tri-deck clean-up vessel purposely engineered to locate, retrieve, and recycle plastic from the ocean to preserve our most valuable assets for future generations.

FEATURES OF THE OCEAN SAVIOUR

- A forward facing deployable conveyor is located between the hulls
- The front conveyor dips into the water and waste is taken directly onto the deck to be processed
- Manta Collector Array (MCA) booms can be deployed to port and starboard which direct ocean borne plastic waste into an oversized mesh collector
- The content of the MCA and side collectors are craned directly up to the main deck for processing
- Provision has been made to repatriate any wildlife that could be picked up
- There are two plastic recycling processes currently being investigated including plasma gasification or crush bailing. Gasification will produce syngas which may be used to then fuel the vessel
- Ghost nets can be navigated to the rear of the ship for recovery by deck hoists

PULVERIZATION OF MARINE DEBRIS

Another proposal would be Pulverization. Here is an excerpt from the paper's abstract:

"Here, we proposed a complete eco-friendly low-temperature MD pulverizing system that utilizes excessive liquefied natural gas (LNG) cold energy (LCE) in an LNG propulsion ship to improve the efficiency and effectiveness of MD recycling. The prototype design of the low-temperature pulverization (LTP) system showed that consumable refrigerant (liquid nitrogen) up to 2831 kg per hour could be substituted. Furthermore, with a 20% ship output, 1250 kg of MD could be treated with 363 kg of additional refrigerant. In addition, LTP systems utilizing LCE could increase the storage capacity by more than 10 times compared to bulk MD while minimizing the required energy consumption. To determine the feasibility of LTP for MD recycling, four types of plastics obtained from actual MD from a coastal area in Busan, Korea were classified and tested."

Photo credit: Nature.com

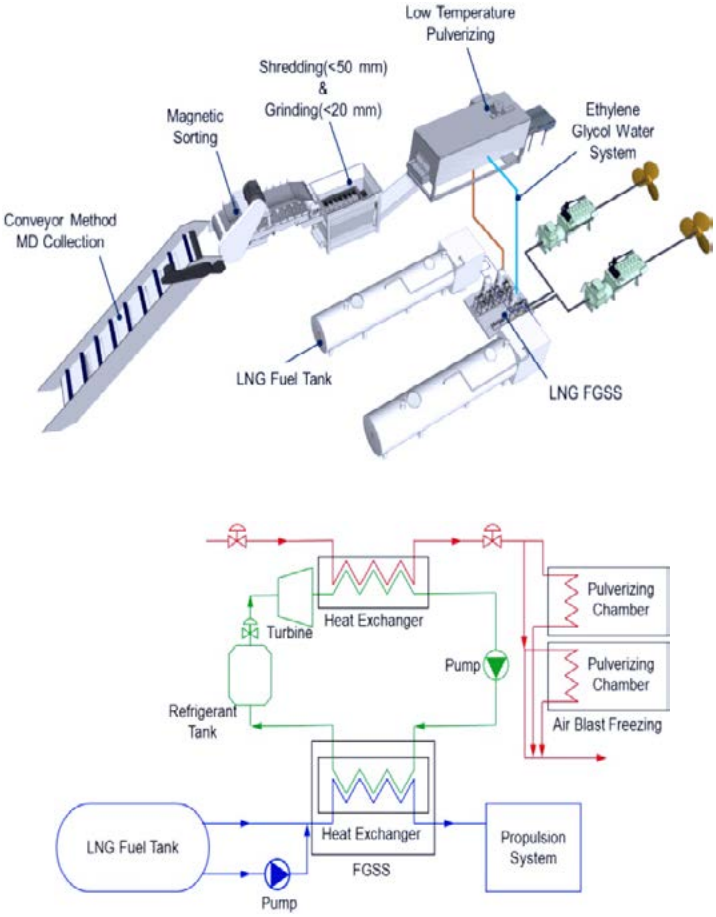


Photo credit: Nature.com

SHIPS THAT RUN ON ALTERNATIVE FUEL

Maybe in the future the Domestic shipping industry namely the Domestic shipbuilding industry can build vessel that run using alternative fuels

LIQUID HYDROGEN

Photo credit: Offshore-energy.biz

"Maritime transport accounts for 3% of CO2 emissions annually on a global scale. The ambition of Energy Observer and its partners is to present prototype solutions leaning towards zero-emission for the transport of goods.

The technologies are now mature, with liquid hydrogen storage well mastered, the deployment of liquefiers around the world, and the latest generations of mass-produced fuel cells. Energy Observer is now tackling the latest technological challenges, such as the integration of large tanks or the management of cryogenic temperatures, thanks to the support of its historical and technological partners.

The main partner of the Energy Observer is Air Liquide, which masters the production, storage, distribution, and safety of liquid hydrogen and thus brings its technical expertise and its capacity for innovation."

AMMONIA

Photo credit: Offshore-energy.biz

"This vessel represents a milestone in the development of the maritime industry and a step forward in the readiness to utilize alternative marine fuels," Filippos Nikolatsopoulos, ABS Manager, Greece Business Development, pointed out.

As explained by ABS, Ammonia Fuel Ready Level 1 indicates the vessel conforms to the requirements outlined in the ABS Guide for Gas and Other Low-Flashpoint Fuel Ready Vessels. This is part of a suite of industry guidance on alternative fuels developed by ABS, including support for the development of ammonia as a marine fuel.

SHIPBREAKING AND SHIP RECYCLING

Ship Recycling indeed contributes to Maritime Pollution as demonstrated by refusal of any port and recycler to accept an ageing and high maintenance Aircraft carrier form Brazil due to environmental hazards like Asbestos, PCBs and many other toxic materials so they ended up violating three international treaties in sinking or scuttling the Aircraft carrier.

The IMO has set standards for ship breaking and ship recycling through the Hong Kong Convention, by providing guidelines to prevent and mitigate ocean pollution.

The top player for ship breaking is Bangladesh where 92% of the entire world's ship breaking happens. But its big neighbor India is doubling its capacity for ship breaking and recycling and our neighbor Indonesia through the firm Marco Polo will have its first Green Ship recycling facility.

The World labour organization or ILO also has set standards because ship breaking and recycling is hazardous.

The Philippines has Republic Act 9295 or the Domestic Shipping act with a long title that reads: *AN ACT PROMOTING THE DEVELOPMENT OF PHILIPPINE DOMESTIC SHIPPING, SHIPBUILDING, SHIP REPAIR AND SHIP BREAKING, ORDAINING REFORMS IN GOVERNMENT POLICIES TOWARDS SHIPPING IN THE PHILIPPINES, AND FOR OTHER PURPOSES.*

Photo credit: Brazilian Navy | Marinelink.com

MARINA has set the rules and regulations relating to registration and licensing of ship breaking and recycling facilities through its Memorandum Circular No. SR-2020-01.

A June 10, 2020 article in the Manila Times stated:

"The Maritime Industry Authority (Marina) has set up a paid-up capital requirement of P25 million to P50 million for those interested to run ship-breaking and ship-recycling facilities that would support the government's ship retirement and replacement program.

Marina Administrator Vice-Admiral Robert Empedrad recently signed Memorandum Circular on Shipyard Regulation (SR) 2020-01, which laid the rules and regulations relating to registration and licensing of ship breaking and recycling facilities and for other purposes.

Marina said a Class A ship-breaking or ship-recycling yard must have a paid-up capital of P50 million and must be capable of scrapping ships more than 80 meters in length.

They need to set up a dry-docking facility, wharf or quay, landing or beaching area. The yard should also have a waste reception facilities, sewage treatment plant, and separate storage facilities for hazardous materials.

For Class B ship breaking and recycling yard, the needed capital is P25 million and must be capable of dismantling ships 80 meters in length and below. It must have the same facilities required for a Class A facility.

The ship breaking and recycling business would bring in opportunities for ship yards and ship owners, as long as they follow the environmental sound ship dismantling."

Despite that, a Shipping giant Tsuneishi halted its plans to setup a Ship breaking and recycling facility in Negros because the project will destroy mangroves.

The Marina Memorandum on Ship breaking and Recycling gives license to ship breakers and ship recyclers if they practice environmentally sound practices. My take on this if the concern is the mangroves will be destroyed then the one of the options is to find another location which is not easy, then the responsible way is to continue the efforts on mangrove replanting by all the stakeholders including the ship builders.

India did an extensive report on Maritime pollution coming from Ship breaking.

The aforementioned plasma gasification has potential to contribute to up the value of the recyclables from ship breaking.

SOME LAUDABLE EFFORTS IN THE PHILIPPINES

Community efforts in estero cleanup, coastal cl\eanup, The Ocean Cleanup Day, and MARINA and PCG's initiative to protect The Marine Environment are laudable.

Despite our number three ranking in the top plastic polluters, there are small efforts that contribute immensely like the estero cleaning of both Metro Manila water concessionaires Manila Water and Maynilad and The project of the former DENR secretary General Roy Cimatu of a simultaneous estero cleanup which should be continued and replicated forevermore.

The use of trash traps to prevent garbage reaching Manila bay may not be as sophisticated as Boyan Slat's Interceptor but it gets the job done. The third Sunday of September is the International Ocean Cleanup Day and The Philippines contributed its share in the efforts. Another laudable initiative is MARINA and PCG's initiative to protect the Marine Environment.

MEPSEAS PROJECT

Last 2018, Seven ASEAN countries launched an ambitious initiative called the Marine Environment Protection of the Southeast Asian Seas or the MEPSEAS Project aimed at improving the environmental health of the seas through implementation of International Maritime Organizations treaties. Seven ASEAN countries have formally launched an ambitious initiative aimed at improving the environmental health of the seas in the region, through the implementation of key International Maritime Organization (IMO) marine environment protection treaties. The project was funded by Norway through NORAD and the ASEAN Maritime Transport Working group served as the advisory body.

MEPSEAS implemented four high priority treaties including the International Convention For the Prevention of Pollutions from Ships(MARPOL); the Anti-Fouling Systems Convention; the London dumping of wastes at sea convention and protocol; and the Ballast Water Management Convention.

CONCLUSION

There is indeed a large room for improvement for The Philippines' contribution to Maritime Pollution Prevention and Maritime Environment Protection, but there are so many promising opportunities out there and our efforts to mitigate pollution should be lauded.

Ship breaking and ship recycling indeed is an opportunity since we have lots of old ships, but making sure to follow environmentally sound practice like adhering to international treaties is a must.

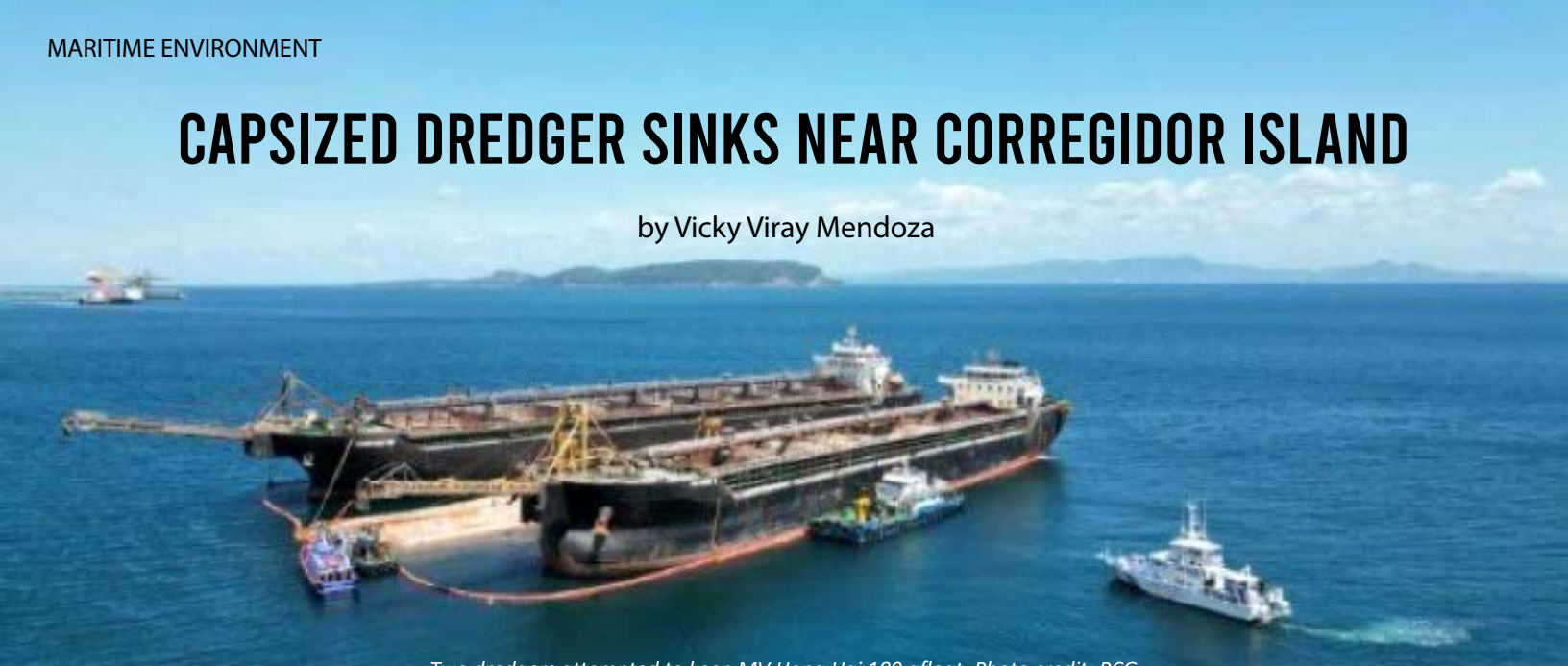
Lastly, for the Southeast Asian Region, NORAD is supervising the implementation of the Marine Environment Protection of Seas or MEPSEAS.

About the Author:

Karl Misa Garcia's interest in the Maritime Industry goes way back when he was an employee of Asian Terminals, a port operator at the South Harbor Port of Manila. But his interest in everything maritime maybe in his DNA being a son of a former Navy Officer. He also had a stint as a consultant to Senators Biazon and Trillanes. He is a graduate of BS Computer Science from AMA Computer University. He earned his MBA from De La Salle University Graduate School of Business. Ω

CAPSIZED DREDGER SINKS NEAR CORREGIDOR ISLAND

by Vicky Viray Mendoza



Two dredgers attempted to keep MV Hong Hai 189 afloat. Photo credit: PCG.

On May 6, the capsized dredger *MV Hong Hai 189* finally sank near the historic Corregidor island which is at times visible at the entrance of Manila Bay.

On April 28, in the evening, the Sierra Leone-flagged dredger *MV Hong Hai 189* collided with Marshall Island-flagged chemical/oil tanker MT *Petite Soeur* near Corregidor. *MV Hong Hai 189* was inbound coming from Botolan, Zambales according to PCG; while MT *Petite Soeur* had just gotten under way from a petroleum terminal in Mariveles, Bataan. The two collided at a speed of 6 knots, and as a result, MV *Hong Hai 189* capsized.

The Philippine Coast Guard (PCG) is still determining whether the vessels were in a crossing situation or an overtaking situation under COLREGs.

Three days after MV *Hong Hai 189* capsized in the waters of Corregidor, the dredger was towed.

The PCG said it monitored the motor tugboat MTUG Tirad Pass as it safely towed *MV Hong Hai 189* to Barangay Sisiman in Mariveles, Bataan, which is about 400 yards from the Sisiman Lighthouse.

More than a week after the capsizing, *MV Hong Hai 189* finally sank off Mariveles, Bataan. Two dredgers had tried to keep her afloat.

Photo credit: PCG.

Photo credit: PCG.

Before the sinking, PCG Station Bataan and the Marine Environmental Protection Unit helped install oil spill booms to ensure there would be no oil spill from dredger MV *Hong Hai 189,* still reeling from the disastrous oil spill due to MV *Empress Princess* that sunk off Eastern Mindoro in February 2023.

The PCG installed oil spill booms even if it had not observed any oil spill as yet in the area.

"The Coast Guard Aviation Force conducted an aerial survey to augment the SAR operations," PCG noted.

PCG redoubled its environmental protection efforts after the dredger went down, with deployment of absorbent bags.

So far, only a minimal quantity of petroleum has been detected outside of the containment area, amounting to at most 50 liters. The PCG continues to monitor the wreck site.

Photo credit: PCG.

Photo credit: PCG.

MV Hong Hai 189 was towed for safety reasons, to remove obstructions to other vessels passing along the waters of Corregidor Island, according to PCG-National Capital Region.

"PCG facilitated the towing of the capsized MV Hong Hai 189 as part of a safety endeavor in removing hazards along the Traffic Separation Scheme (TSS) in the approaches of Manila Bay and as a mitigating measure for oil spill," the PCG-NCR said.

The 20 crewmembers of MV *Hong Hai 189* comprised 16 Chinese and 4 Filipinos. 15 crewmembers survived, 3 died and 2 went missing or may have drowned, 1 of whom was recently found under the sunken dredger. In addition of the explanation of the casualty count, PCG said 16 were rescued, two of whom were brought to the Bataan General Hospital, but one later died.

On Sunday, May 7, PCG terminated the dive search for the dredger's missing crew member, but maintained its floating assets to continue with search operations.

PCG has sought the assistance of coastal barangays nearby and issued a Notice to Mariners to alert all passing ships near Corregidor Island to be on the lookout for the missing crewmember.

MT *Petite Soeur* has been anchored in Mariveles, Bataan since the incident. She is detained and cannot leave until she is cleared of any liability or responsibility in the sea mishap. MT *Petite Soeur's* 21 crewmen are in good physical condition. No injuries or casualties were reported aboard MT *Petite Souer*.

The tanker MT *Petite Soeur* had 150,000 liters of diesel oil onboard. MT *Petite Soeur* did not sustain any damage as a result of the collision.

A previous oil spill disaster in February was due to the sinking of MT *Princess Empress* off Oriental Mindoro, which carried 900,000 liters (318 tons) of industrial fuel oil (Black Oil) of which over 72 tons were released into the sea and coated pristine beaches, diving spots, sickenned dozens of residents, and threatened its tourist industry, and rich marine biodiversity. The resultant oil slick that stretched for 75 miles, threatened hundreds of fishing communities near Pola, MIndoro as well as biodiversity in more than 20 marine protected areas. Hundreds of coastal villages across 9 Oriental Mindoro towns were placed under a "state of calamity." MT *Princess Empress* encountered engine trouble during a stormy day but still sailed. She was later found by a Japanese remotely operated underwater vehicle, at a depth of nearly 400 meters and about 7.5 nm from Balingawan Point facing Pola. DENR Secretary Antonia Loyzaga said that as of March 10, 2023 oil from the ship was leaking at a rate of 35,000 to 50,000 liters per day. Defense Chief Carlito Galvez confirmed the U.S. and Japan will help in the clean-up by deploying naval units. RDC Reield Marine Services Inc. is the owner of MT *Princess Empress*, which is owned by the Cabial family. The ship was so old and had already been scrapped, contrary to the claim that it is a brand new ship. It had no permit to sail. The PCG has announced that the oil slick has now been cleared. Nevertheless, threats to the reefs and other marine life has renewed calls for the Philippine government to ban oil tankers from passing through the Verde Island Passage.

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References:

Source: Maritime Executive, *https://www.maritime-executive.com/article/capsized-dredger-finally-sinks-off-corregidor*

Source: Evelyn Macairan, Sunken dredger towed to Bataan – Coast Guard, PHILSTAR (May 3, 2023), *https://www.philstar.com/the-freeman/metro-cebu/2023/05/03/2263321/sunken-dredger-towed-bataan-coast-guard*

Source: *https://www.theguardian.com/global-development/2023/mar/27/philippines-princess-empress-oil-spill-mindoro-island*

BILL TO PROTECT RIGHTS, INTERESTS OF FILIPINO SEAFARERS PASSED ON FINAL READING IN THE HOUSE

by Press and Public Affairs Bureau

The House of Representatives approved on third and final reading a measure that seeks to protect the rights and interests of Filipino seafarers, ensuring that they have "full protection" before, during, and after employment, especially in the event of maritime accidents, epidemics or pandemics, or other natural or man-made crisis.

Voting 304 against 4, the chamber overwhelmingly voted to pass House Bill (HB) No. 7325, shortly titled "Magna Carta of Filipino Seafarers," which also aims to develop a pool of competent and world-class seafarers "through a system of education, training, certification, and licensing."

"Our seafarers are our unsung heroes. Almost 400,000 of them are on board merchant shipping vessels around the world at any given time. They are not only a source of income for the country through their remittances but also a source of pride," Speaker Ferdinand Martin G. Romualdez said.

"Hinahangaan ang ating mga Pinoy seafarers sa buong mundo. Kaya bilang pagkilala sa kanilang kontribusyon sa ating bansa, nararapat lamang na sila ay bigyan natin ng proteksyon sa ilalim ng batas, upang sila ay hindi maabuso at malagay sa peligro," he added.

Some of the authors of the bill are Kabayan party-list Rep. Ron Salo, OFW Party-list Rep. Marissa Del Mar P. Magsino, Cavite Rep. Lani Mercado Revilla, Davao City Rep. Paolo Duterte, Camarines Sur Rep. LRay Villafuerte, Benguet Rep. Eric Yap, Ako Bisaya Party-list Rep. Sonny Lagon, and Basilan Rep. Mujiv Hataman.

Provisions of HB 7325 cover Filipino seafarers "who are employed or engaged or work in any capacity on board foreign-registered ships and Philippine-registered ships operating internationally."

According to the measure, Filipino seafarers have a right to:

- Safe, secure workplace that complies with safety standards;
- Fair terms and conditions of employment;
- Decent working and living conditions on board a ship;
- Health protection, welfare measures, medical care;
- Self-organization;
- Information about seafarer's family;
- Against discriminatory practices;
- Educational advancement and training;
- Relevant information;
- Free legal representation;
- Appropriate grievance mechanism;
- Access to communication;
- Fair treatment in the event of a maritime accident; and
- Fair medical assessment.

The bill also lists the duties and responsibilities of seafarers, as well as of ship owners and manning agencies.

It mandates that the standard employment contract (SEC) shall be reviewed and approved by the Department of Migrant Workers (DMW) to ensure that the contract stipulations adhere to or protects the rights of seafarers as laid down in the measure.

HB 7325 goes to great measures to lay down the protection mechanism for seafarers in cases of epidemics, pandemics, maritime accidents, and other crises, which entitles them to full compensation.

If affected by a pandemic or epidemic, seafarers should be entitled to "medical care, board and lodging for periods spent by a seafarer in quarantine or self-isolation," as well as "hospitalization and medical treatment when the seafarer is sick or infected – until declared as fully recovered."

"Seafarers shall be entitled to adequate compensation in the case of injury, loss or unemployment arising from the ship's loss or foundering, in accordance with the SEC or the collective bargaining agreement (CBA)," the bill states.

The Overseas Workers and Welfare Administration is also mandated to establish seafarer welfare facilities or centers in major crew-change ports, "specifically in Metro Manila, Pangasinan, Bulacan, Cavite, Batangas, Iloilo, Cebu, Cagayan de Oro City, Davao City, and other areas."

"A One-Stop-Shop for Seafarers, which shall have representatives from government agencies that process or issue licenses, permits, clearances, and other documents required by seafarers shall also be established in these welfare centers for the convenience of the seafarers and to maximize the services being offered to them," HB 7325 states.

The Secretary of the DMW, or a duly authorized representative, shall also have access to foreign-registered ships and Philippine-registered ships operating internationally and "conduct inspection to ensure compliance with working and living standards of seafarers as provided under this Act."

"The shipowner or master shall ensure the compliance of the ship with this Act and its Implementing Rules and Regulations (IRR), who shall be made principally liable for any violation thereof. For this purpose, the Maritime Labour Certificate or a certificate of compliance, as applicable, shall be issued in accordance with the IRR," it continued.

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Source: *https://www.congress.gov.ph/press/details.php?pressid=12405*

Hilcobid
A Hilco Global Company

Due to the reorganisation of the Shipyard, formerly owned by

HANJIN PHILIPPINES SHIPYARD

SHIPYARD EQUIPMENT FOR SALE

Amsterdam-based Hilco Industrial Acquisitions, an operating company of US-based Hilco Global, announced the Sale of Surplus Equipment of the formerly owned HANJIN PHILIPPINES SHIPYARD, located in Subic Bay, Philippines, following its strategic acquisition.

Consistent with the new business direction of revitalizing the operations of the renowned Shipyard into a Multi-Purpose Facility, the surplus assets are now up for sale on HilcoBid.com

Hanjin Philippines Shipyard is recognized among the 10th Largest Shipyards in the world with 300 Ha/740 acres of area for the entire manufacturing unit, and 35000 Staff employed during the height of the Shipyard. Equipment in this sale are installed new from 2007 to 2009 at the shipyard. Hanjin successfully built the first ship in 2009 at the shipyard.

Featured Equipment:

- Goliath Cranes; Jib (Dockyard) Cranes; Bridge Type Cranes; Gantry and Overhead Cranes
- CNC Plasma Cutting Machines, Oxygen Cutting Machines, Hydraulic Shipyard Presses, Panel & T-Bar Fabrication Lines
- 5000+ Welders, Welding Cable
- 5000+ Dockyard Equipment
- 100+ Forklifts
- Hydraulic & Crawler Cranes, Aerial Platforms, Boomstackers, Tractor & Trailers, Trucks, Vans, Buses, Cars, and much more
- Vessels: Tugboats, High Speed Passenger Vessels, Roll-on Roll-off Passenger/Transport Vessels.

Robert Bouland, CEO at Hilco Industrial Acquisitions, stated, *"This sale represents an outstanding opportunity for buyers seeking to purchase high-quality shipbuilding equipment."* Bouland also mentioned that they expect significant interest from Asia and the Americas, and are open to considering offers to purchase a comprehensive package of substantial assets.

To arrange an inspection, access more detailed information about the assets which are being sold, or learn specific details on the sales process, please contact: **Margot Ter Bogt** (mterbogt@hilcoglobal.com)

About Hilco Industrial Acquisitions

Hilco Industrial Acquisitions (www.hilcohia.com) is based in Amsterdam in the Netherlands and provides industrial asset acquisition and disposition services, specializing in machinery, equipment and inventory auctions and negotiated sales. It sells a broad range of industrial assets found in manufacturing, wholesale, and distribution companies. The company buys and sells assets through on-site, online and combination webcast auction sale events as well as negotiated (private treaty) sales. In addition to providing services on a fee or commission basis, Hilco Industrial Acquisitions, puts capital at risk and often acquires assets or provides guarantees.

Hilco Industrial Acquisitions is part of Northbrook, Illinois-based Hilco Global (www.hilcoglobal.com), the world's leading authority on maximizing the value of business assets by delivering valuation, monetization, and advisory solutions to an international marketplace. Hilco Global operates more than twenty specialized business units offering services that include asset valuation and appraisal, retail and industrial inventory acquisition. Ω

HD HYUNDAI REOPENS FORMER HANJIN SUBIC SHIPYARD

by Vicky Viray Mendoza

In view of workforce challenges in its home front, shipbuilding giant HD Hyundai has expressed interest in using part of the vast Subic Bay Shipyard Complex that was once operated by Hanjin Heavy Industries (HHI), another large Korean shipping firm.

HD Hyundai is looking to set up shop at the Subic facility which was originally founded by Hanjin Heavy Industries & Construction about 20 years ago in December 2003.

Hanjin had begun building the sprawling complex on the north side of Subic Bay in 2006, and grew it into the fourth-largest shipyard in the world. It is the largest yard in the Philippines, with depths from 27 to 44 meters that will allow very large container cargo ships to anchor, and at its peak employed over 20,000 personnel. Hanjin ceased operations in 2019, due to protracted slumps in shipping operations. As not everyone may be aware, a ship-repair and shipbuilding company often goes through peaks and throughs, and it needs deep pockets to survive in this difficult business during protracted troughs. Hanjin defaulted on its outstanding loans totaling $1.3 Billion, of which $400 Million was lent by Philippine banks, and $900 Million from South Korean lenders.

At present, HD Hyundai is contemplating a commercial operation at Subic. The Korean shipbuilder intends to use two drydocks, and could move in as early as December 2023. The project could potentially create up to 15,000 jobs in the Philippines.

It is not the first time that Hyundai has been linked to Subic. In 2022, Defense Secretary Gen. Delfin Lorenzana told media that Hyundai would operate a maintenance depot for Hyundai-built Philippine Navy vessels at the former Hanjin Subic facility.

The U.S. private equity firm Cerberus Capital Management LP had acquired the Subic Shipyard in 2022 and has since renovated the facility. Cerberus has an agreement with the Philippine Navy for the latter to use a third of the huge shipyard complex for maintenance purposes, now called Naval Operating Base Subic with 800 Philippine Navy and maintenance personnel on site.

Subcomm, which is Cerberus' subsea-cable subsidiary, will also be moving in at the Subic Freeport later in 2023, and hopefully will create additional employment opportunities.

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Source: *https://safety4sea.com/hd-hyundai-reopens-shuttered-hanjin-subic-shipyard/?utm_source=newsletter&utm_medium=email&utm_campaign=SAFETY4SEA+-+daily+15%2F05%2F2023*

NAVAL ARCHITECTURE AND MARINE ENGINEERING REVIEW NOTES PROPULSION RESISTANCE

by CAPT TOMAS D BAINO PN (Ret)

INTRODUCTION

This article is a review notes in naval architecture and marine engineering simplified in outline form for quick reference how the forces of nature interact against a ship's speed of advance at sea while underway.

SHIP HUSBANDRY

Hull Cleaning Program – a clean hull of the ship below the waterline makes a ship travel faster, uses less fuel and also benefits from reduced docking costs, has reduced risk of speed performance, as well as reduced wear and tear on the ship hull and engine. The ship can then move quickly and efficiently to reach its destination. The vessel's overall cost is reduced, while its earning potential and mission performance is increased.

A naval vessel is a national investment in security.

1. She needs to be in a state of readiness at all times.
2. She needs to serve her country efficiently.
3. She needs to be in tip top condition.
4. She needs to save lives.

Why is a Ship Hull Overlooked?

1. It is out of sight
2. Who really understands marine fouling?
3. It is a hidden cost
4. Who really cares?

NOW is the right time to start caring, saving money, and extending the life of your vessels. It is never too late to start, but will inevitably will be costlier, if you don't. It is just makes sense to save money and increase vessel performance.

A merchant Marine Ship is a Business Investment

1. She needs to sail at minimum possible time and travel economically.
2. She needs to generate income to support operations, maintenance, profit, life extension program, etc.
3. She needs to reduce her life cycle cost to the minimum.
4. She needs to comply with standard ship classification rules periodically.

The 4 Natural Forces Acting on a Ship

- Wind NO CONTROL
- Eddy NO CONTROL
- Frictional CAN CONTROL
- Wave NO CONTROL

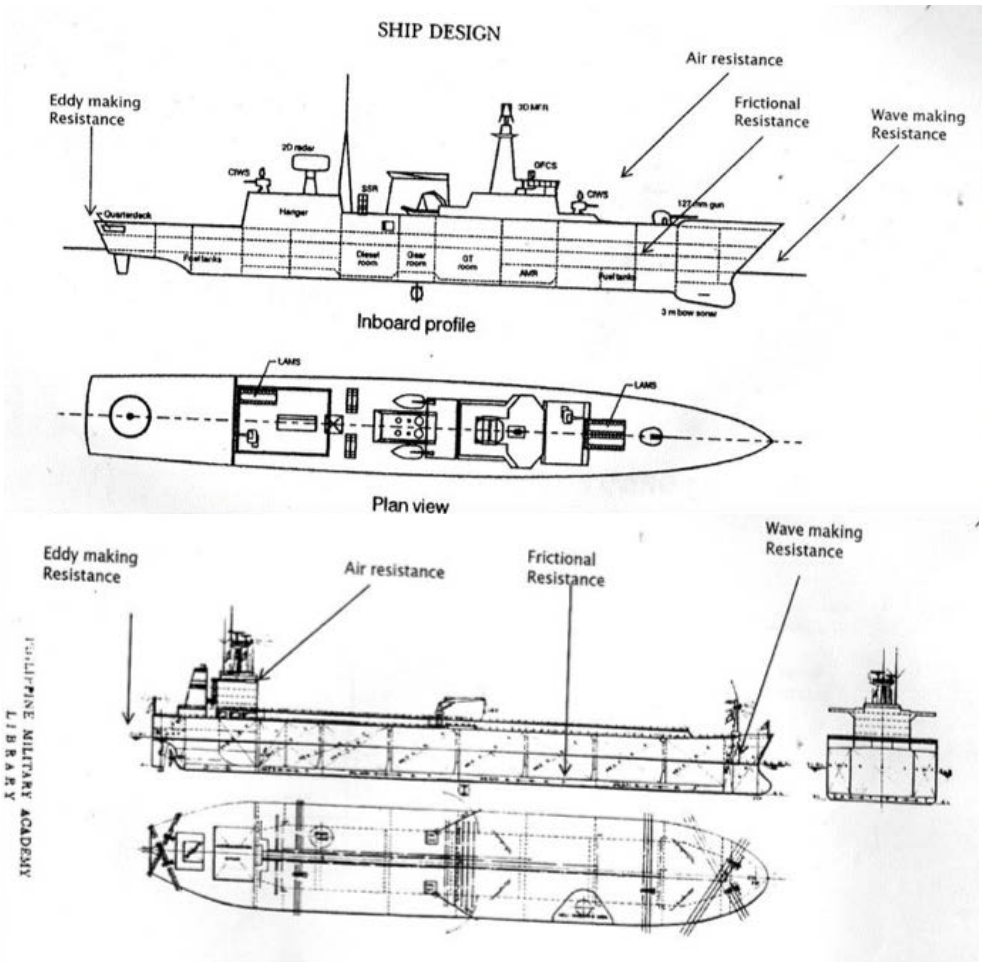
Wind Resistance – is a force that is caused when a ship moves against the wind. Any form of wind action on a vessel leads to air resistance. Air resistance is a kind of friction (a force that opposes motion) which occurs between air and another object such as a ship. It is the force that the ship experiences as it passes through the air.

Eddy Resistance – a drag force caused by an Eddy current that is shed from the hull of the ship or appendages of the ship, and opposed to the ship's speed of advance.

Wave Making Resistance – a form of drag that affects the surface ship and reflects the energy required to push the water out of the hull. This energy is what creates the waves.

Frictional Resistance – is the largest part of the total resistance. The frictional resistance depends on hull surface roughness due to fouling and coating degradation. It also creates a drag, and opposed to the ship's speed of advance.

Rf – Frictional resistance of fluid
S – The Hull's wetted surface area in contact with sea water
V – Velocity of the hull
F – Constant depending on length and nature of surface.



Schedule of Inspection	Observations of Underwater Hull	Action Options	Consequences
6 months from undocking	No serious blistering Significant unbroken blisters	Clean hull when required Recognize ship as possible future risk	None None
Prior to first underwater cleaning	No serious blistering but some hull fouling (FR-60) or greater.	Clean hull Clean hull	None Possibility of rupturing blisters, increasing corrosion and refouling.
	Significant blistering and some hull fouling (FR-60) or greater Paint not visible due to fouling. *FR: fouling rate*	Do not clean hull Clean hull	Reduce chance of corrosion; increasing fuel penalty due to continued fouling. If no blisters, no danger, if blistered, possibility of rupturing blisters, increasing corrosion and refouling
After first cleaning	Wear of paint on edges and welds; no blisters Significant ruptures blisters and rust staining	Reinspect prior to next cleaning Reinspect prior to next cleaning Remove ship from cleaning program and plan near-term drydocking to repair paint Or Continued scheduled cleanings, no dry-docking	None Possibility of rupturing blisters with future cleaning If drydocked quickly, none Or Moderate fuel penalty; but increasing hull corrosion

FORMULA FOR DETERMINING ESTIMATED ANNUAL PROFIT BY VESSEL

1. SEA DAYS = Total Round Voyage Distance/Ship's Speed X 24 = AV
   Annual Voyages = Annual Operating Days
   Sea Days / Voyage + Port Days' / Voyage
2. CARGOTONSPERVOYAGE=Deadweight-(Water+Stores+ReserveFuel+Fuel Consumed @ Sea + Fuel Consumed @ Port) = TPV
3. TOTAL REVENUE = AV x TPV X S/Ton (Freight Rate) = TR
4. ANNUALVOYAGECOST=(FuelPrice)X(Tot.Fuel@Sea+Tot.FuelinPort) (Port Charges Loading + Port Changes Discarging) X AV = VC
5. ANNUALOPERATINGCOST=Manning+Insur.+Provisions+Store+Repairs = OC
6. ANNUALFINANCIALCOST=ShipCostXFinancedXAmortizationFactor@Interest Rate(i) = FC
7. TOTAL ANNUAL PROFIT = TR - (VC + OC + FC) = TP

References:
1. Royal Institute of Naval Architecture
2. Modern Ship Design by Thomas Gilmer

ABOUT THE AUTHOR

CAPT BAINO is a registered naval architect and civil engineer in the Professional Regulation Commission in the Philippines. A former instructor in Basic Naval Architecture Stability and Trim at the Naval Officer Qualification Course at the Naval Training Command of the Philippine Navy and Basic Naval Architecture at the Philippine Military Academy, Baguio City. Likewise, his part time job is also to teach Basic Naval Architecture at NAMEI Polytechnic Institute. He was the former Commanding Officer of the Naval Shipyard, Philippine Navy and was involved in co-production of the 78 Foot Gunboat with Halter Marine Shipyard of USA and Patrol Craft Escort Refit Program of the Philippine Navy and Joint United States Military Advisory Group. Upon his retirement from the NAVY in 2004, he served as consultant with BFAR for the acquisition of Fishery Monitoring Control Vessel from Spain and also with DOTr for the acquisition of 12 Multi-Role Response Vessel for the PCG under JICA Loan Grant. He served also with Development Bank of the Philippines Maritime Leasing Corporation in 2006 for local construction of RORO Vessel. He earned a post graduate diploma in Naval Architecture at the University College of London specializing in Submarine Design under the sponsorship of UK Ministry of Defense and training in Hydrodynamic with Defense Evaluation Research Agency also in UK. He had also undergone orientation seminar with Blomh and Voss in MEKO Warship Design and Construction in Hamburg, Germany. Ω

BOX OF ASSORTED SHARK'S FIN INTERCEPTED BY BFAR-8 AND PCG

by BFAR Region 8

A box of assorted shark's fin with an estimated weight of 11 kilograms and an estimated worth of Php77,000 loaded inside an Eagle Star Bus headed to Cubao/Pasay was found by the BFAR 8 Fisheries Inspection Quarantine Officer and Philippine Coast Guard (PCG) stationed in Sta. Clara Port in Allen, Northern Samar, in the late afternoon of 17-March-2023.

Said box of shark's fin was intercepted during the regular inspection of all outgoing provincial buses bound for Manila and other Luzon areas. It was initially loaded inside a bus with route Dolores, Eastern Samar to Pasay/Cubao. However, it encountered some mechanical issues while on its way to Sta. Clara Port. Thereafter, all the items loaded in it were transferred to another bus with an Ormoc-Cubao/Pasay route, which have been intercepted by the apprehending officers.

Upon inspection, the driver of the identified bus was unable to present any traceability documents such as auxiliary invoice and Local Transport Permit (LTP) of the commodity's point of origin. Further, the alleged owner of the shipment, who is a resident of Esperanza, Masbate, shared that the said assorted shark's fins are to be sold to a certain buyer in Cubao.

Protocol documentation such as notice of violation, seizure receipts, inventory receipts, photo documentation, the actual identification of the shipment, and evidence tagging were conducted by the BFAR Quarantine Officers.

Transportation of shark's fin is a violation of Section 102 (Fishing or the Taking of Rare, Threatened or Endangered Species) of the Amended Fisheries Code of the Philippines. If found guilty, the alleged offender will face imprisonment of 12 years and one (1) day to 20 years and will be penalized with a fine equivalent to 5 times the value of the species in the range of PhP500,000 to PhP5 million.

The apprehending officers are gathering the pertinent documents for filing appropriate charges and proper disposition of the seized shark's fins. Ω

DANISH FIRM INVESTING $5B FOR OFFSHORE WIND PROJECTS IN PHILIPPINES

by Kris Crismundo | Philippine News Agency

OFFSHORE WIND. *Energy Secretary Raphael Lotilla (seated, second from left) and Copenhagen Infrastructure Partners (CIP) association partner Przemek Lupa (seated, third from left) sign the service contracts for three offshore wind energy projects in the country at the Department of Energy office in Taguig City on March 30, 2023. CIP is the first foreign company that will develop renewable energy projects in full ownership since the current Marcos administration lifted foreign ownership restrictions in the Renewable Energy sector. (PNA photo by Kris M. Crismundo)*

MANILA – Danish firm Copenhagen Infrastructure Partners (CIP) is investing USD5 billion to develop three (3) offshore wind energy projects in the Philippines with a potential capacity of 2,000 megawatts (MW).

Department of Energy (DOE) Secretary Raphael Lotilla and CIP associate partner Przemek Lupa signed three offshore wind energy service contracts at the DOE Office in Taguig City on Thursday, 30-March-2023.

The signing was witnessed by the Danish Ambassador to the Philippines Franz-Michael Mellbin.

CIP Partner Lupa said about 1,000 MW of the offshore wind project will be located in Camarines Norte and Camarines Sur; 650 MW in Northern Samar; and 350 MW in Pangasinan and La Union. He said the company targets to deliver these offshore wind projects within the current President's tenure.

The three offshore wind projects of CIP are expected to create 4,500 jobs. CIP Partner Lupa said:

"Our ambition for the Philippines goes well beyond these three service contracts. We have (an) appetite to grow onshore renewable energy projects as well as offshore, and to contribute to the clean and sustainable growth of the country,"

DOE Secretary Lotilla has welcomed the investment of the Danish firm, being the first foreign company to develop a renewable energy project in full ownership.

In 2022, the Philippine government allows 100 percent foreign ownership for renewable energy projects.

On the sidelines of the event, the DOE chief said more foreign energy firms have expressed their interest to undertake projects here under the full ownership business model, as the Philippines liberalizes investments in renewable energy.

CIP Partner Lupa said this signals the government's commitment to addressing the country's energy, employment and climate change challenges.

"As a foreign company, we welcome the lifting of the famous 60-40 foreign ownership restrictions in renewables, which is a very positive sign that this administration is truly is heading for progress as it opens a lot of opportunities to create large number of jobs, to address the energy crisis, and to help meet the environmental commitment of the Philippines."

He added that aside from the investments in putting up offshore wind energy facilities, CIP's projects here will also develop the local supply chain.

About the Author:

Kris Crismundo is a senior business reporter of the Philippine News Agency for the past 10 years covering trade, industry, investments, and energy. She also served as one of the Board Members of the Economic Journalist Association of the Philippines (EJAP), the country's premier organization of business reporters. She graduated from Lyceum of the Philippines University-Manila with a degree of Bachelor of Arts in Mass Communications, majoring in Broadcasting. Ω

Source: *https://www.pna.gov.ph/articles/1198566*

OUR AMPHIBIOUS WARFARE VESSELS: FROM COMBAT SERVICE SUPPORT TO HUMANITARIAN RESPONSE (PART 1 OF 2)

by CDR Mark R Condeno PCGA

Four years ago, in January 2019, news reports came out that the United States Army would divest its Maritime Capability beginning with 18 of its 35 large *Runnymede* Class Landing Craft Utilities and one of its 8 *Frank S Besson* Class Landing Support Vessels (LSVs), 2 of which were already in service with the Philippine Navy as the Bacolod City Class LSVs for which the original acquisition program began during the late President Corazon C Aquino's term but were delivered during late President Fidel V Ramos' term.

The U.S. Army planned to replace these ships with a new type of vessel. However, things took a different turn six months later in July 2019, when it was announced that the ships would not be sold.

Local defense pages on social media have now called for the country to look into these ships for the Philippine Navy to upgrade our Amphibious Capability and for Humanitarian and Disaster Response mission platforms. With this in mind, here is a brief backgrounder about how our Amphibious Warfare Capability began.

The Service Squadron was a unit of the Philippine Fleet activated on 01-January-1950, under Commander Juan B Magluyan with 35 Officers and 362 Enlisted Personnel.

Its initial strength had 1 AM (Minesweeper-RPS *Samar*), 2 LSTs at large, 2 Landing Craft at large, 3 AGL-Lighthouse Tender-RPS *Orchid*, RPS *Pearl Bank*, RPS *Lauis Ledge*), and 1 YTL-Small Harbor Tug (RPS *Ifugao* ex-HMS *Emphatic*).

Upon activation of the Service Squadron, the Patrol Force (Offshore Combat Force) and Shore Stations (Naval Shore Establishment/Naval Stations) were placed under it.

When the U.S. Navy transferred its ships to us during the early days of the Post War Offshore Patrol and Philippine Naval Patrol, we maintained their names or hull numbers. It was only in 1953 upon orders of Commodore Jose Francisco that our ships became Filipino-oriented, replacing the American names and hull numbers.

The Service Squadron is organized into 3 groups:

- **The Transport Service** comprising the Landing Ship Tanks;
- **The Auxiliary Service** composed of the Oil Tankers, Water Tenders and Tugboats; and
- **The Special Service** with the Presidential Yacht, FOIC's Barge, and other smaller vessels.

RPS Cotabato (T-36)

LANDING SHIP TANKS (LSTs). The Service Squadron commissioned its first 2 Landing Ship Tanks on 30-December-1947 as LST-75 or Ex-USS LST 75 later becoming RPS *Cotabato* (T-36), the 1st of the five (5) LST-1 Type in our inventory; and LST-865 or Ex-USS LST-865 later becoming RPS *Albay* (T-39), the 1st LST-542 Class in the Fleet.

They were followed by former USS LSTs 842, 843, and 875 (RPS *Pampanga* T-37, RPS *Bulacan* T-38 and RPS *Misamis Oriental* T-40. By 1969, 2 more 542 Class and 1-491 Class were added becoming RPS *Cagayan* (LT-97), RPS I*locos Norte* (LT-98), and RPS *Bataan* (LT-85, Ex-USS Caddo Parish). RPS *Cagayan* provided Combat Service Support to the Philippine Troops deployed during the Vietnam War.

Three years later, another shot in the arm was added with the commissioning of RPS *Mindoro Occidental* (LT-93), RPS *Surigao Del Norte* (LT-94), and RPS *Surigao Del Sur* (LT-95) on 15-July-1972. All three are former U.S. Navy units.

By the end of the Vietnam War, with units of the former South Vietnamese Navy (SVN) under Captain Khung HuUm Ba and Captain Kiem Do that arrived in Subic Bay, most of their warships were turned over to the Naval Defense Force (Philippine Fleet) by the end of 1975 until 1976.

Ten (10) LSTs of the former South Vietnamese Navy Task Group II and Task Group III acquired by the Philippine Navy from 1975 to 1976.

RPS Agusan Del Sur (LT-54)
RPS Sierra Madre (LT-57)
RPS Kalinga-Apayao (LT-516)
RPS Zamboanga Del Sur (LT-86)
RPS Cotabato Del Sur (LT-87)
RPS Tarlac (LT-500)
RPS Samar Oriental (LT-502)
RPS Lanao Del Sur (LT-503)
RPS Lanao Del Norte (LT-504)
RPS Leyte Del Sur (LT-505)

Two (2) former Japanese Maritime Self Defense Force (JMSDF) units were also acquired in 1975 and 1976, becoming RPS Davao Oriental (LT-506, Ex-JDS *Oosumi*) and RPS Samar Del Norte (LT-510, Ex-JDS *Shimokita*).

By September 1976, 2 Ex-U.S. Navy units were commissioned RPS *Cotabato Del Norte* (LT-511) and RPS *Tawi-Tawi* (LT-512). By 13 September 1976, RPS *Laguna* (LT- 501) and RPS *Benguet* (LT-507) entered service. Standard Armaments were usually 8-40mm AA Guns. These are currently the last 2 LST types in commission with the Sealift Amphibious Force (SAF), along with BRP *Sierra Madre* (LT-57) serving as an outpost on the West Philippine Sea.

LST OPERATIONAL HISTORIES. Following are the available operational missions recorded and conducted by some of the LSTs that we have in inventory.

TO THE SHORES OF PUSAN. The first 5 LSTs bore the brunt of Combat Service Support for Philippine Expeditionary Force To Korea (PEFTOK) troops during the Korean War. The 5 Landing

Ship Tanks (LSTs) of the Philippine Navy's Service Squadron: RPS *Cotabato* (T-36), RPS *Pampanga* (T-37), RPS *Bulacan* (T-38), RPS *Albay* (T-39), and RPS *Misamis Oriental* (T-40) would serve as the workhorse, transporting Filipino soldiers to and from Korea for five years.

RPS Pampanga (T-37)

PHILIPPINE NAVY COMBAT SERVICE SUPPORT IN THE KOREAN WAR		
PEFTOK BCT	**TO KOREA**	**TO PHILIPPINES**
10TH Battalion Combat Team " Steady On" (Motorized)	USNS SGT *Sylvester J Antolak* (T-AP-192)	LST 75 (RPS *Cotabato* T-36) LST 843 (RPS *Bulacan* T-38) LST 842 (RPS *Pampanga* T-37)
20TH Battalion Combat Team " We Lead" (Motorized)	LST 75 (RPS *Cotabato* T-36) LST 842 (RPS *Pampanga* T-37)	LST 843 (RPS *Bulacan* T-38) LST 865 (RPS *Albay* T-39) LST 875 (RPS Misamis Oriental T-40)
19TH Battalion Combat Team" Bloodhounds'' (Motorized)	LST 842 (RPS *Pampanga* T-37) LST 865 (RPS *Albay* T-39)	LST 842 (RPS *Pampanga* T-37) LST 865 (RPS *Albay* T-39)
14TH Battalion Combat Team "The Avengers''	LST 843 (RPS *Bulacan* T-38) LST 865 (RPS *Albay* T-39)	USS *Logan* (APA-196)
2ND Battalion Combat Team "BLack Lion''	USS Mountrail (APA-123)	USS *General SD Sturgis* (AP-137) USS *General R.L. Howze* (T-AP-132) USS *General WH Gordon* (T-AP- 117) LST 875 (RPS *Misamis Oriental* T-40)

VIETNAM WAR COMBAT SERVICE SUPPORT and EVACUATION MISSION

RPS Bataan (LT-85)

RPS *Misamis Oriental* (LT-40), RPS *Bataan* (LT-85) and RPS *Cagayan* (LT-86) were the known LSTs that were utilized by our troops "PHILCAG " and during the evacuation of Da Nang and Vung Tau in the closing days of the Vietnam War. As early as 29-March-1975, RPS Bataan (LT-85), which was moored at Da Nang Harbor was tasked to evacuate 2, 500 South Vietnamese Refugees from Da Nang to Saigon along with 118 Filipino Workers. She was skippered by LCDR Jovito Camcam PN.

The Communist Forces were approaching the coasts and our sailors were told to unleash all the firepower that the ship had. If ever the enemy approached, they were to protect the civilians. The LST Officers and men were ready to shoot it out to protect their passengers, as all the 50 Calibers and Swedish Bofors were trained and pointed toward the Harbor Entrance.

On 27-April-1975, RPS Misamis Oriental (LT-40) under the command of LCDR Rafael Cartaciano PN evacuated 1,266 South Vietnamese and Filipinos to the Philippines. Full fire-power of the LST was uncovered to protect the its passengers.

ACTIONS UP NORTH AND DOWN SOUTH. RPS *Cagayan* was also used to ferry students for educational tours to Corregidor and was part of Task Force 32 during Operation "Pamukpok" off Lamitan, Basilan in July 1973. Concurrently, RPS *Surigao Del Sur* (LT-95) sealifted 19,000 cartons of medical kits for the Central and Southern Philippines in 1973. RPS *Surigao Del Norte* (LT-94) under LCDR Armando Calvo PN was also used in the anti-piracy campaign nabbing 23 fishing boats from Taiwan and Japan in cooperation with RPS *Leyte* (PS-30) commanded by LCDR Ramon Genoveva PN on September 1973 around Batanes and Babuyan Islands. Prior to her Vietnam exploits, RPS *Bataan* was with the Control group during Amphibious Operations off Siasi Island as part of Operation Batikus as well as clearing operations of Sanga-Sanga Island from 7-31 March-1976.

RPS Ilocos Norte (LT-98)

RPS *Ilocos Norte* (LT-98) carried the elements of the 1st Marine Battalion Landing Team on 04-February-1974 off Maimbung, Jolo, Sulu during Operation "Eagle Bay." BRP *Aurora* and BRP *Tarlac* were part of the Search and Rescue (SAR) effort for the ill-fated Destroyer Escort BRP *Datu Kalantiaw* (PS-76) that sunk off

fated Destroyer Escort BRP *Datu Kalantiaw* (PS-76) that sunk off Calayan Islands in 1981.

THE LANDING SHIP MEDIUM (LSM). Our first LANDING SHIP MEDIUM joined the fleet on 15-September-1960 when the former USS LSM-236 became the first RPS *Batanes* (LP-65). She was followed by RPS *Isabela* (LP-41) on March 1961 and the following year by RPS *Oriental Mindoro* (LP-68). Thirteen years later, two former units of the South Vietnamese Navy were turned over and the ex-RVNS Huong Giang became the 2nd RPS Batanes after LP-65 ran aground in 1970, while the other unit was used as spare parts source and was never commissioned. The last LSM to join the Sealift Amphibious Command (SAC) was RPS *Western Samar* (LP- 66) former RVNS Hat Giang in November 1975. By 1985, only RPS *Isabela* LP-41 and RPS *Oriental Mindoro* LP-68 were extant. Most were armed with 2-40mm AA Guns and 7-10 20mm AA Guns.

RPS Isabela (LP-41) Ex-USS LSM-463

RPS Batanes (LP-65)

RPS Oriental Mindoro (LP-68)

LSM OPERATIONAL HISTORY. The LSMs were utilized in the Naval Gunfire Support and transport roles specifically during the height of the southern campaign, notably during Operation Pamukpok. RPS *Oriental Mindoro* in 1971 embarked and distributed 636,976 pounds of food, goods and medical stuff at Polilo Island, Quezon Province under LCDR Federico Lardin PN through the National Disaster Control Center of the DSWD, PRC, DOH and U.S. Catholic Conference Group. LP-68 was also with the Administrative Group (Task Group 32.10) during Operation Batikus. In 1966 RPS *Isabela* (LP-41) under LT Godofredo Calazan PN apprehended 5 Taiwanese Fishing Boats with Illegal entrants off Fuga Island, Batanes. RPS *Western Samar* was briefly used as a Floating Medical Facility.

RPS Sorsogon (LF-37) Ex-South Vietnamese penant 329

THE LANDING SHIP INFANTRY LARGE (LSIL). The LSILs of the SAC were former South Vietnamese and Royal Cambodian Navy Units that escaped their respective countries after the Vietnam War. The first to join was RPS *Marinduque* (LF-36, Ex- P111 of the Royal Cambodian Navy). She was followed by RPS Sorsogon (LF-37), RPS *Camarines Norte* (LF-52) and RPS Misamis Occidental (LF-53) all former South Vietnamese Navy units and lastly an Ex-Cambodian Navy LSIL that was not commissioned but used as spare parts source for the fleet. All four LSILs were decommissioned in 1980.

RPS Sulu (LF-49) and RPS Camarines Sur (LF-48)
Photo Credit: Philippine Daily Express, Feb. 8, 1977

LANDING SHIP SUPPORT LARGE (LSSL): FIRE SUPPORT SHIPS. Three LSSL's joined the SAC in 1975 and again all were former South Vietnamese units, RPS *Camarines Sur* (LF-48), RPS *La Union* (LF-50) and RPS *Sulu* (LF-49) all three were commissioned on 06-February-1977. One other Ex-RVN unit was used as spare parts source. By the last quarter of 1975, two Ex-U.S. Navy units were transferred but were never commissioned. All 3 units served for about 3-5 years in the fleet, mostly decommissioned during the early and late 1980s. Ω

SOURCE OF IMAGES:

Navsource.org, Janes Fighting Ships 1968-69, Philippine Daily Express 1977.

About the Author

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NAVY RESCUES PASSENGERS OF VESSEL ON FIRE OFF PILAS ISLAND, BASILAN

by Naval Forces Western Mindanao






Bagong Calarian, Zamboanga City – The Naval Forces Western Mindanao (NFWM), through its Naval Task Force 61's 1st Boat Attack Division, conducted rescue and assistance to the crew and passengers of a commercial vessel that caught fire in the early dawn of 30-March-2023.

The commercial vessel named M/V Lady Mary Joy was loaded with 35 crew including master and 205 passengers. The vessel caught fire while underway in the vicinity of 9.3 nautical miles east off LMS Basilan.

Upon receipt of report, the Philippine Navy's Multi-Purpose Attack Crafts, BA485 and BA487, were immediately dispatched. Upon arrival in the area of the incident, the Navy personnel discovered that the motor vessel on fire was able to beach at Baluk-Baluk Island, Basilan. The two (2) Attack Crafts also beached near the distressed vessel and accommodated 67 passengers who needed immediate care and assistance. The vessels brought the rescued crew and passengers back to Ensign Majini Pier for treatment at Camp Navarro General Hospital.

However, out of the reported total 240 crew and passengers, only 138 passengers had been retrieved as of 30-March. There have been 28 confirmed passengers who had perished.

The NFWM and its LMS Pilas team, in coordination with the Philippine Coast Guard, continuously conducted follow-up search and rescue for the remaining passengers. Ω











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MAAP Profile

Geographic destiny has given the Filipino the innate talent to be an excellent seafarer. To enhance this natural skill, the Maritime Academy of Asia and the Pacific (MAAP) was established on January 14, 1998. The Academy stands on a 103-hectare property in Kamaya Point, Mariveles, Bataan.

The Associated Marine Officers' and Seamen's Union of the Philippines (AMOSUP) founded by the late Capt. Gregorio S Oca, capitalized and developed the Academy. The new AMOSUP President,Dr. Conrado F. Oca, heads the Academy's board of governors. The board is comprised of representatives from the private sector, the International Transport Workers Federation, the Filipino Association of Maritime Employers, the International Transport Workers Federation, the All Japan Seamen's Union, the International Mariners Management Association of Japan, the Norwegian Seafarers' Union, the International Maritime Employers' Committee, the Danish Shipowners' Association, the Norweigan Shipowners' Association, and the Japanese Shipowners' Association.

MAAP conducts shipboard training aboard T/S Kapitan Felix Oca, a 5020 DWT dedicated training ship capable of accommodating 180 midshipmen and 9 instructors in 30 air-conditioned cabins and six berths.

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MAAP students are all scholars who are entitled to free tuition, board and lodging. They receive a comprehensive, up-to-date and well-rounded education that fully complies with the requirements of STCW 95 and the Commision on Higher Education (CHED). To ensure the highest standards of quality, MAAP adheres to a Quality Standards System that has been certified to comply with ISO 9001 version 2008, the Det Norske Veritas (DNV) Rules for Maritime Academies, and the Productivity and Standard Board (PSB) of Singapore.

The Academy offers three main programs: the Bachelor of Science in Marine Transportation (BSMT), Bachelor of Science in Marine Engineering (BSMarE) and the Bachelor of Science in Marine Transportation and Engineering (BSMTE). The curricula for the three courses were designed with the help of the United States Merchant Marine Academy at Kings Point, New York. Courses are four-year courses with sea phases scheduled in the third year. The BSMT curriculum requires a total of 192 units: 152 at MAAP, 40 practicum/shipboard units on board T/S Kapitan Felix Oca and/or a shipping company sponsorship. The BSMarE curriculum requires a total of 193 units: 153 at MAAP, 40 practicum/shipboard units on board T/S Kapitan Felix Oca and/or a shipping company sponsorship.

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