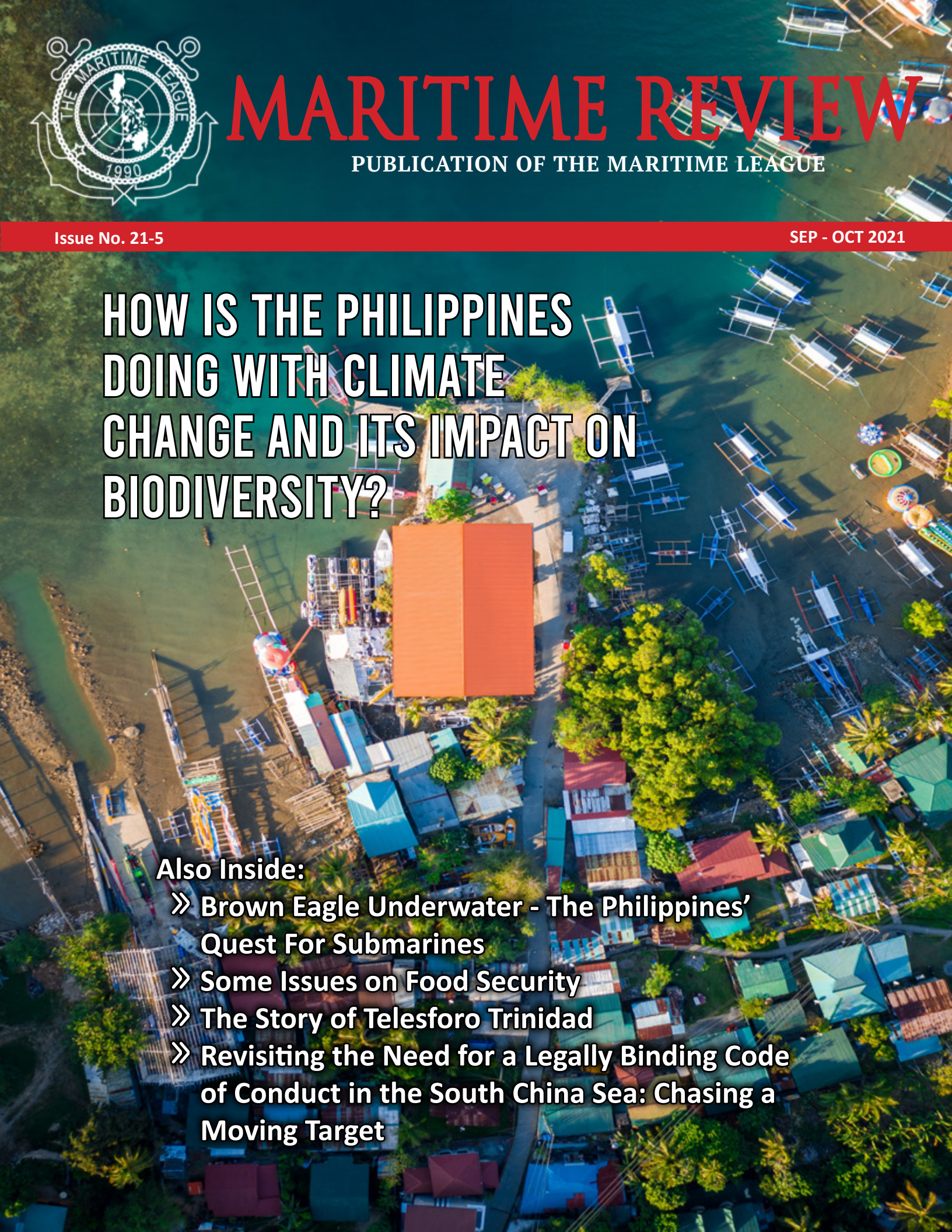
MARITIME REVIEW

PUBLICATION OF THE MARITIME LEAGUE

Issue No. 21-5

SEP - OCT 2021



HOW IS THE PHILIPPINES DOING WITH CLIMATE CHANGE AND ITS IMPACT ON BIODIVERSITY?

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- Some Issues on Food Security
- The Story of Telesforo Trinidad
- Revisiting the Need for a Legally Binding Code of Conduct in the South China Sea: Chasing a Moving Target

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The Maritime Review is published bimonthly on behalf of the Maritime League and is supplied to members as a part of their annual membership package. The opinions expressed by the writers do not necessarily reflect those of the Maritime League

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MARCH 2021

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9-11 2ND WORLD HYDROGEN SUMMIT (DIGITAL EVENT)

16-18 INTERMODAL ASIA 2021 (SHANGHAI WORLD EXPO EXHIBITION AND CONFERENCE CENTRE, SHANGHAI, CHINA)

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23 MARITIME FORUM #161 (MARITIME ACADEMY OF ASIA AND THE PACIFIC (MAAP); ONLINE VIA ZOOM MEETING)

APRIL 2021

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17-25 SEATRADE MARITIME EVENTS: SEA ASIA-SINGAPORE (SUNTEC SINGAPORE CONVENTION & EXHIBITION CENTRE, SINGAPORE, SINGAPORE)

21-22 OFFSHORE WINDCONFERENCE 2021 BY SCOTTISH RENEWABLES (VIRTUAL EVENT)

21-22 COASTLINK CONFERENCE ANTWERP 2021 (PORT OF ANTWERP, ANTWERP, BELGIUM)

21-22 9TH AVL LARGE ENGINE TECHDAYS - DECARBONIZATION FACING GLOBAL ECONOMIC CHALLENGES (HELMUT LIST HALLE, GRAZ, AUSTRIA)

19-30 NACE CORROSION 2021 VIRTUAL CONFERENCE AND EXPO (VIRTUAL EVENT)

TBA MARITIME FORUM #162 (MARITIME INDUSTRY AUTHORITY (MARINA); ONLINE VIA ZOOM MEETING)

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24-27 MARITIME WEEK AMERICAS (PANAMA CITY, PANAMA)

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JUNE 2021

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8-11 SEANERGY FORUM 2021 INTERNATIONAL LEADING EVENT ON OFFSHORE WIND AND MARINE RENEWABLE ENERGY (PAYS DE LA LOIRE, NANTES, SAINT-NAZAIRE, FRANCE)

15-17 SEAWORK SOUTHAMPTON 2021 - EUROPE'S LEADING COMMERCIAL MARINE AND WORKBOAT EXHIBITION (MAYFLOWER PARK, SOUTHAMPTON, UK)

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21-23 CRUISE SHIP INTERIORS EXPO AMERICA (CSI) (MIAMI, FLORIDA, USA)

21-23 MARINE MONEY WEEK (NEW YORK, USA)

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OFFSHORE PHILIPPINES 2021 (CO-LOCATED WITH PHILMARINE 2021)

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TBA MARITIME FORUM #164 (PHILIPPINE COAST GUARD (PCG); ONLINE VIA ZOOM MEETING)

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6-8 BLACK SEA PORTS AND SHIPPING (THE MARMARA TAKSIM, BEYOGLU BELEDIYESI, TURKEY)

JULY 2021

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21-23 SEA ASIA 2021 VIRTUAL CONFERENCE AND EXPO (ASIA'S ANCHOR MARITIME ANDOFFSHORE EVENT) (MARINA BAY SANDS, SINGAPORE, SINGAPORE)

TBA MARITIME FORUM #167 (NATIONAL DEFENSE COLLEGE OF (NCWC); ONLINE VIA ZOOM MEETING)

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5-6 MARINE ENERGY TRANSITION FORUM 2021 (HAVENHUIS ANTWERPEN, ZAHA HADIDPLEIN1, ANTWERP, BELGIUM)

6-8 INDONESIA MARITIME EXPO (IME 2021) (INDONESIA EXPORT IMPORT, JAKARTA, INDONESIA

11-13 INMEX SMM INDIA EXPO AND CONFERENCE (BOMBAY EXHIBITION CENTER, MUMBAI, INDIA)

12 ANNUAL CAPITAL LINK NEW YORK MARITIME FORUM (VIRTUAL CONFERENCE)

13-14 AIS SUMMIT 2021. HYBRID OF DIGITAL AND PHYSICAL EVENT (ST ANNENUFER 5, HAMBURG, GERMANY)

13-15 CMA SHIPPING CONFERENCE AND EXHIBITION 2021 (HILTON STAMFORD CONNETICUT, 1 STAMFORD PL, STAMFORD, CONNETICUT, USA)

20-22 OIL AND GAS VIETNAM 2021 (PULLMAN VUNG TAU, VUNG TAU, VIETNAM)

21-22 GLOBAL PORTS FORUM 2021 (OCBC CENTRE, SINGAPORE, SINGAPORE)

TBA MARITIME FORUM #169 (PHILIPPINE PORTS AUTHORITY (PPA); ONLINE VIA ZOOM MEETING)

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2-5 EUROPORT 2021 (ROTTERDAM AHOY CONVENTION CENTRE, AHOYWEG, ROTTERDAM, NETHERLANDS)

8-11 ABU DHABI INTERNATIONAL PETROLEUM EXHIBITION AND CONFERENCE (ADIPEC 2021) (ABU DHABI NATIONAL EXHIBITION CENTER, AL KHALEEJ AL ARABI ST, AL RAWDAH CAPITAL CENTER, ABU DHABI, UAE)

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DECEMBER 2021

1-3 INTERNATIONAL WORKBOAT SHOW (MORIAL CONVENTION CENTER, NEW ORLEANS, LA, USA)

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SOME ISSUES ON FOOD SECURITY

by VAdm Emilio C Marayag Jr AFP(Ret)

Food security, according to the UN Food and Agriculture Organization (FAO), is "ensuring that all people at all times have both physical and economic access to the basic food that they need." The UN Committee on World Food Security (CFS) further qualifies food security to mean "people having at all times physical, social, economic access to sufficient, safe and nutritious food that meet their food preference and dietary needs for an active and healthy life."

The importance of food security is enshrined in the 1948 UN Declaration of Human Rights (Article 25-1): "everyone has the right to a standard of living adequate for the health and well-being of himself and his family including food, clothing, housing…" This was re-echoed in the 1996 Rome Declaration on World Food Security and the International Covenant of Economic, Social and Cultural Rights. Relatedly, the International Convention on the Rights of the Child (Article 27) provides: "the right of every child to a standard of living adequate for the child's physical, mental, spiritual, moral and social development." In addition, the UN includes in its Sustainable Development Goals the twin objectives of "ensuring access to safe, nutritious and sufficient food" (Target 2.1) and "eradicating all forms of malnutrition" (Target 2.2).

Food security has 4 pillars: availability, access, utilization, and stability. Food availability refers to the production of sufficient quantities of quality food. Access involves adequate resources –economic (income, expenditure and buying capacity) and physical (infrastructure and facilities to access food) for acquiring appropriate food for nutritious diet. Food utilization entails proper biological use of food to reach a state of nutritional well-being through adequate diet, clean water, sanitation and health care. Stability, or sustainability, means the ability to obtain food over time. In each of these pillars lies some issues that vary in every nation.

On the issue of **food availability**, *The State of Food Security and Nutrition in the World 2019* Report reveals that globally 820 million people or 11% of the world population, were hungry in 2015. Exacerbating the situation are climate change, environmental degradation, conflict, pests and diseases, economic downturns unhealthy diets, and other health crises like COVID-19. In 2020, one in three people (2.37 billion) did not have access to adequate food, an increase of 324 million in a year. About 12% of the global population (928 million) is severely food insecure, 148 million more than the previous year. Yet, 30% of the world food production goes to waste. Climate change, especially the increase in temperature, would certainly affect production unless viable alternatives are explored and all nations will comply with the Paris Accord to reduce carbon dioxide emissions into the atmosphere.

In the Philippines, the contribution of agriculture, fishery and forestry sector to strengthen food security steadily declined from 12.7% in 2010 to 10.2% in 2020 of GDP. The fishery sub-sector, 16.1% of total agricultural production estimated to contribute 1.1% to GDP, registered a 1.3% reduction from 2019 figures. Of the total fishery production (16.1% of total agriculture output) about 22% comes from commercial fishing that go beyond the 15 kilometer municipal waters. About 7% of fish produce comes from the West Philippine Sea but only 44% of that is reaped through commercial operations, according to BFAR National Director Eduardo Gongona. This infers that while the country's share in the entire South China Sea fishery resources is barely 1%-2%, the Philippines' exclusive economic zone (EEZ) claim comprises of about 25% of the total sea area. The miniscule portion of catch can be attributed to many factors including depleted quantity of fishery resources, lack of fishing boats, weather variability, lack of fishery enforcement vessels, the large number of poachers, and occasional harassment by Chinese government and para-military vessels.

On the other hand, fishery products from municipal fishing and aquaculture continue to provide the country's fishery needs augmented by some importation. With the new acquisition of patrol vessels and aircraft, the nation's fishery resources in the 2.2 million square kilometers of EEZ, including the West Philippine Sea, would be preserved and protected for the future generations and assure food availability within the maritime zones. With improved fishery patrol capability transforming, some overlapping portions in the disputed area in the Spratlys to have joint fishery protected grounds could become a reality.

Access to food sources largely depends on both economic and physical considerations. The pandemic is a retarder of generating wealth and spending trends. However, with the government's "build, build, build" strategy and similar actions, many infrastructures, facilities and spin-off industries would create more jobs. In turn, more disposable income would trigger economic activities including better food preferences. To increase fishing catch, the government must give incentives to private fishing enterprises and shipbuilding companies to invest in building, operating and maintaining oceangoing fishing vessels. The extent and size of the EEZ require sturdy and seaworthy fishing boats especially in the eastern seaboard.

Food utilization involves making good use of the accessed food by sufficient diet, potable water, sanitation and health care to enable the human body to ingest and metabolize food. One of the most important aspects in utilizing food is from the conception stage up to the 2nd year of a child. Many researches indicate that in 2019, 30% of children under 5 years old are stunted (linear growth failure) while around 8% are wasted (weight for height is below 2 standard deviation) in the Philippines. These studies found that children unable to achieve optimum growth within 1,000 days from conception are exposed to high risk of cognitive development with detrimental effects on academic performance and employment opportunities in later life. The World Bank 2020 Systematic Country Diagnostic Report (Philippines) reveals that from 2000-2015, the stunting rate did not change significantly despite improvement in health and economic standards making the country among the ten in highest number of stunted children worldwide. Stunting, both physical and cognitive, is associated with suboptimal pre-natal condition and inadequate food.

Interestingly, the recent World Bank report on the *2018 Program for International Student Assessment (PISA)* involved children born in 2003 when the stunting rate was around 35%. In this report, participating Filipino 15-year-old students ranked last in the reading test, and second to the last in science and mathematics exams, out of 79 countries. Some of the findings include: large number of students do not meet the minimum learning standards, richer students performed better than the poorer ones, lack of proper nutrition and support at home, not enough investment on education (UN, 4% of GDP; PH, 3.2%), high achievers do not go to teaching jobs, no growth mindsets (World, 63%; PH, 31%) and socioeconomically disadvantaged children have the largest learning deficits. Many years ago, I listened to a lecture on the subject of Humanities where the speaker presented some studies that in assessing a nation's status one must look into its political, economic, religious, social, intellectual and artistic aspects. This World Bank's PISA report should serve as a wake-up call to enhance the intellectual ability of our children, the hope of the motherland.

Food stability assures continued availability of food for the population. Farmlands and sea spaces must be managed properly to avoid environmental degradation and depletion of stocks. Diversification of produce and monitoring of vulnerabilities of food security, including peace and order along the transport route, should be vigorously pursued in coordination with both public agencies and private sectors.

In sum, food security should be treated in the context of national security as demonstrated by the fall of governments in Haiti and Madagascar in 2007, and the start of the Arab Spring in 2010 caused by food prices and grievances, the so-called "mackerel war" between Norway, European Union and Iceland in 2007, and most recently the maritime conflict in South China Sea. As an archipelagic nation, food security should exploit its fishing and maritime resource potential. There is a need for an integrated approach to maritime-based economic growth, nutrition, and food system resilience.

HOW IS THE PHILIPPINES DOING WITH CLIMATE CHANGE AND ITS IMPACT ON BIODIVERSITY?

Dr. Dencio Severo Acop

INTRODUCTION. Everything these days appears daunting, even overwhelming. We have challenges internally and externally. The global pandemic has showed us in no unmistakable terms how fragile and vulnerable we are. The world we live in continues to be at risk not so much from the wrath of nature more than the greed of man. By all accounts, both internal and external environments impact each other in ways that are becoming more apparent with the passing of every year.

The challenges we face from this interface seem to get worse. The way of life that man has managed to devise for himself over the centuries has let loose a craving for satisfaction that knows no bounds. Once thought to be limitless and boundless, planet Earth today no longer seems formidable. Earth, like man, is now vulnerable and probably even dying and perishing at a much faster rate than earlier envisioned. It is not my intent to sound like a doomsayer. Still, either optimism or pessimism would not negate the fact that indeed we have more than enough to be concerned about when it comes to the future of our planet and us due to climate change and an increasingly altered biodiversity.

Are we then doing enough? In our part of the world, have our own efforts been worthy against these daunting challenges? What have our efforts been? Are we in tune with the rest of the world? After all, it is a global village we live in and the fate of the world is the fate of all. The Philippines, in particular, is a vast archipelago of 7,641 islands spanning a territory that makes it the 5th largest island country in the world. Its maritime waters and tropical forests are host to a rich variety of all types of marine organisms and wildlife. According to Google, 'the Philippines is one of the 17 mega biodiverse countries, containing two-thirds of the Earth's biodiversity and 70% of the world's plant and animal species due to its geographical isolation, diverse habitats, and high rates of endemism' *(https://www.usaid.gov, 17-Aug-2016).* As a maritime nation, it is therefore interesting to know the Philippines' own efforts toward protecting the world's biodiversity not only in the face of climate change but also as a result of man's behavior. Moreover, we can assess whether ongoing efforts by the Philippines are sufficient in containing any risks to much of the world's biodiversity which it hosts.

This article will revisit the fundamentals of climate change and provide an update of the current situation. For better appreciation, it will move from a macro to micro zoom lens spanning the world culminating in our country of focus which is the Philippines. The discussions essentially include the critical issue of biodiversity which is heavily found in the Philippine environment. The great concentration of the world's rich biodiversity and other essential resources in Philippine territory has naturally made the country also a security flashpoint in the region. The maritime issues in the Philippines therefore do not merely highlight the need to assess the country's initiatives toward preserving the world's wildlife and marine resources. They likewise point out concerns that have to do with man-made risks to the land and marine ecosystems therein including those that result from maritime incursions whether these are economic or security in nature. As well as any initiatives that have been adopted by the Philippines relative to the rest of the world in this regard. It will also be pointed out that if there is any significant stumbling block to the government's drive to address climate change, better the environment, and improve lives, it would be corruption.

CLIMATE CHANGE. NASA defines climate change as 'a broad range of global phenomena created predominantly by burning fossil fuels, which add heat-trapping gases to the Earth's atmosphere. These phenomena include the increased temperature trends described by global warming, but also encompass changes such as sea-level rise; ice mass losses in Greenland, Antarctica, the Arctic, and mountain glaciers worldwide; shifts in flower/plant blooming patterns; and extreme weather events.' Increasing evidence points to the "human economy and industries as the ultimate causes of global warming. This induced increase in temperature linked to industrial activities and the 'greenhouse effect' has brought about the global phenomenon of climate change" as we know it today *(youmatter.world, 27-April-2020).*

We should all be probably thankful for the enduring work of scientists worldwide who studied the phenomenon of climate change. The Intergovernmental Panel on Climate Change (IPCC), for one, 'was created in 1988 with the purpose of studying the evolution of the phenomenon of climate change and its consequences. It continues to bring together hundreds of scientists, climatologists, geologists, oceanographers, and biologists, but also economists, sociologists, engineers, and other specialists in various fields.' Working in three groups, the IPCC: (1) studies the process and magnitude of climate change as a phenomenon; (2) studies the vulnerability of ecosystems and societies as well as how the planet reacts and adapts to climate change; and (3) studies ways of fighting against climate change *(youmatter.world, 27-April-2020).*

Thanks to the work done by groups such as the IPCC, we now better understand what we are dealing with. An increase in temperature due to global warming has the potential to affect the planet's entire ecosystem as we have seen happening in different countries manifested by extreme weather conditions like storms, floods, cyclones, and droughts. The increasing pattern of these disasters becoming more intensive, aggressive, and with more energy has consistently been observed. 'At the same time, the regulating capacity of oceans is also being affected by an increase in temperatures. If global temperatures increase dramatically, ocean levels will not only increase – they will also be facing the ecological challenges of oceanic acidification and deoxygenation. At the same time, forest areas (e.g., Amazon rainforest), fragile

ecosystems (e.g., coral reefs), and biodiversity (e.g., corals, insects, and mammals) are also under threat' (youmatter.world, 27-April-2020).

Climate change has its consequences on society and on the economy. 'With the increase in temperatures in some countries, especially in Equatorial regions (like Asia), the flow of climate refugees is changing and increasing, putting pressure on other countries to host them, help them survive, and overcome political barriers. The reasons for this move have to do with natural resources, such as drinking water, that are getting more limited and many crops and livestock that are unlikely to survive (affecting locals but also the global economy of the several industries that rely on raw materials) in specific locations because of the temperature being too hot or too dry, too cold or too wet' *(youmatter.world, 27-April-2020).* Business continuity management programs have suddenly become relevant as businesses worldwide have to contend with an increasing array of natural disasters impacting manufacturing and distribution infrastructures and supply chains. The global pandemic only worsens the general concerns from climate change as it has set the stage whereby all the accumulated gains against the phenomenon have suddenly been interrupted by an equally deadly or even deadlier threat.

What has been the global consensus on fighting against climate change? 'To fight against climate change, we must first reduce our greenhouse gas emissions. To accomplish this, the first step is to embrace renewable energies that are naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves, geothermal heat, certain crops, and avoid creating energy by the burning of fossil fuels. We must also make everything more efficient, because even if the energy comes from a renewable source, it still will not be carbon neutral and will therefore contribute to the ozone depletion.' Subsequent lifestyle change will have to be adopted by humanity. The urgency of the matter calls for radical change. But if this is not possible, then gradual change will do. 'For this to happen, the world needs to create a global culture of sustainable development, where the energy is used wisely and efficiently, where a circular economy is preferred (much like indigenous peoples do), as well as durable and eco-friendly products like it was in earlier times. The global economy must transform into one that is sustainable and longer term' *(youmatter.world, 27-April-2020).*

BIODIVERSITY. Biodiversity, as defined by National Geographic (www.nationalgeographic.org, 23-Aug-2019), 'refers to the variety of living species on Earth, including plants, animals, bacteria, and fungi. While Earth's biodiversity is so rich that many species have yet to be discovered, many species are being threatened with extinction due to human activities, putting the Earth's magnificent biodiversity at risk.' As explained by YourArticleLibrary *(https://www.yourarticlelibrary.com),* some of the main threats to biodiversity are: 1. Human Activities and Loss of Habitat, 2. Deforestation, 3. Desertification, 4. Marine Environment, 5. Increasing Wildlife Trade, and 6. Climate Change.

1. **Human Activities and Loss of Habitat:** 'Human activities are causing a loss of biological diversity among animals and plants globally estimated at 50 to 100 times the average rate of species loss in the absence of human activities. Two most popular species in rich biomes are tropical forests and coral reefs. Tropical forests are under threat largely from conversion to other land-uses, while coral reefs are experiencing increasing levels of over exploitation and pollution.' Another threat that has come to the fore more recently is the destruction of coral reefs from the construction of artificial dwellings to reclaim submerged islets from the sea. In the South China Sea for instance, the People's Republic of China has been into these constructions for some time now as it annexes much of the South China Sea owing to its historical Nine-Dash Line claim. China, among several countries with either territorial or exclusive maritime claims in the South China Sea, has exacerbated tensions in the region due to its actions. Since early this year (2021), almost 300 Chinese militia vessels have moored near the Julian Felipe Reef within the Philippines' exclusive economic zone. The vessels are believed to be harvesting fish resources from the area and conducting scientific research and monitoring. China has managed to: 1. Occupy and exploit; 2. Militarize and reclaim; 3. Secure and solidify its presence; and 4. Develop and utilize resources from its claimed possessions in the South China Sea against the interests of other claimant nations like the Philippines, Vietnam, Malaysia, Indonesia, Brunei, and Taiwan. Since 2018, China has managed to put up research stations at Panganiban (Meiji) Reef, Yongshu station at Kagitingan Reef, and Zhubi station at Subi Reef. The Philippines had filed a complaint against China for its intrusions before the International Court of Arbitration at The Hague and won an Arbitral Award in 2016. Nevertheless, China has ignored the ruling claiming that it has no bearing.

2. **Deforestation:** "Forest ecosystems contain as much as 80% of the world's terrestrial biodiversity and provide wood fiber and biomass energy as well as critical components of the global cycles of water, energy, and nutrient. Forest ecosystems are being cleared and degraded in many parts of the world.' Apart from legitimate business activity, the world's forest cover has also been dwindling from the abuses of illegal logging activities. Whether it is the Amazon jungle in South America or mountain forests in the Philippines, threats to biodiversity continue due to unchecked or tolerated criminal activity. 'The degradation of forests represents an enormous potential source of green house gas emissions. Forest ecosystems contain three times the amount of carbon currently present in the atmosphere and about one-third of this carbon is stored above ground in trees and other vegetation and two-thirds is stored in the soil. According to current estimates, tropical deforestation and burning account for about one quarter of carbon emissions into the atmosphere from human activities.'

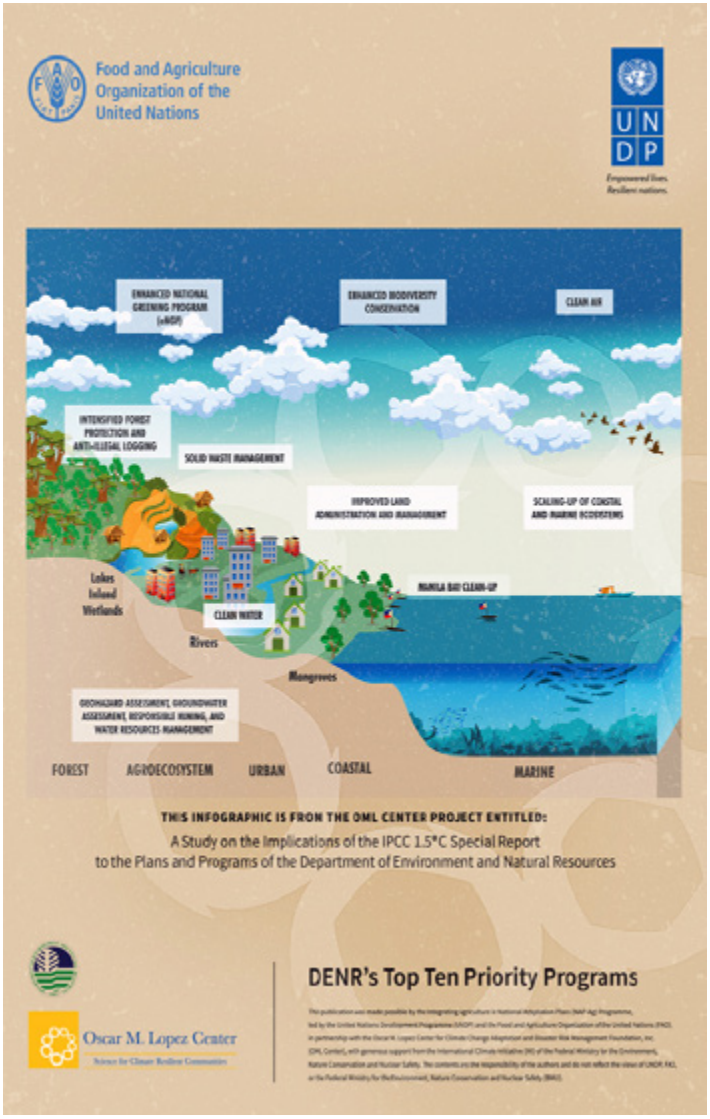
3. **Desertification:** 'Desertification and deforestation are the main causes of biodiversity loss. Both processes are decisively influenced by the extension of agriculture. The direct cost of deforestation is reflected in the loss of valuable plants and animal species. Desertification process is the result of poor land management which can be aggravated by climatic variations. Converting wild lands to agriculture often involves ploughing the soils which leads to decline in soil organic matter over time.' But the loss of valuable biodiversity from both deforestation and desertification is perhaps best illustrated by the human need for shelter and commercial gain most especially in recent times as the world's population continues to grow. No places on Earth better illustrate this phenomenon than our ever-expanding cities found in every country of the world. It is such a paradox that the very source of man's existence such as his habitat's biodiversity is likewise its casualty through man's efforts to survive.

Photo Credit: DENR mangrove planting efforts in Calatagan, Batangas.

4. **Marine Environment:** 'Oceans play a vital role in the global environment. Covering 70% of the Earth's surface, they influence global climate, food production, and economic activities. Despite these roles, coastal and marine environments are being rapidly degraded in many parts of the globe. In coastal areas where human activities are concentrated, pollution, over-exploitation of resources, development of critical habitats such as wetlands, and mangroves, and water-flow from poor land-use practices have led to drastic reductions in near shore fisheries production and aquatic biodiversity.' In addition, the increasing practice of land reclamation has disturbed natural ecosystems in favor of economic gain. Not that livelihoods and business practices should be discouraged around these areas but that human activities should be regulated so that they do more lasting good than harm towards sustaining the marine environment.

5. **Increasing Wildlife Trade:** According to Nick Barnes, 'trade is another cause of biodiversity depletion that gives rise to conflict between North and South.' 'Global trade in wildlife is estimated at over USD20 billion annually. Global trade includes at least 40,000 primates, ivory from at least 90,000 African elephants, 1 million orchids, 4 million live birds, 10 million reptile skins, 15 million furs, and over 350 million tropical fish.' Add to these figures the amount of marine wildlife, corals, and habitat mineral resources that are illegitimately lost to illegal incursions by some countries into other than their exclusive economic zones and the statistics are therefore much even higher. In the Philippines for instance which is 82% water, it is estimated that the archipelagic nation loses some PhP33 billion worth of fish annually to China's illegal fishing activities within the Philippines' exclusive economic zone.

6. **Climate Change:** 'As climate warms, species will migrate towards higher latitudes and altitudes in both hemispheres. The increase in the amount of carbon dioxide in the air affects the physiological functioning of plant and species composition. Moreover, aquatic ecosystems, particularly coral reefs, mangrove swamps, and coastal wetlands, are vulnerable to changes in climate. In principle, coral reefs, the most biologically diverse marine systems, are potentially vulnerable to changes in both sea level and ocean temperature. Human-induced climate change has increasingly become a major factor in reducing biological diversity. These pressures on biodiversity are, to a large extent, driven by economic development and related demands including the increasing demand for biological resources. Activities that reduce biodiversity, jeopardize economic development, and human health through losses of useful materials, genetic stocks, and the services of intact ecosystems. Material losses include food, wood, and medicines, as well as resources important for recreation and tourism. Losing genetic diversity, like losing species diversity, makes it even more likely that further environmental disturbance will result in serious reductions in goods and services that ecosystems can provide. Decreased biodiversity also interferes with essential ecological services such as pollination, maintenance of soil fertility, flood controls, water purification, assimilation of wastes, and the cycling of carbon and other nutrients.'



PHILIPPINE INITIATIVES VIS-A-VIS THE REST OF THE WORLD. What have been the Philippines' initiatives with the rest of the world toward containing climate change and biodiversity loss?

First, as reported by Climate Change Commissioner *Mary Ann Lucille Sering*, the Philippine government 'has put in place policies, programs, and institutions for dealing with climate change.' She added that these government initiatives 'try to make our communities safer and the people less vulnerable to sea level rise and extreme weather events like strong typhoons, floods, and storm surges, among other impacts' (www.worldbank.org). Among the institutions she refers to is the Climate Change Act, passed in 2009, creating the CCC 'to develop policies and

coordinate government programs on climate change.' According to then Budget Secretary Florencio Abad, 'appropriations for climate change have been increasing at an average of 26% yearly since 2009' (www.worldbank.org).

Second, the Philippines works with the World Bank towards 'implementing the country's climate change programs with increased financing, improved design, and greater focus and coordination.' World Bank Country Director *Motoo Konishi* added that 'promoting renewable energy and energy efficiency, for instance, boosts energy security and lower energy costs, thus improving the country's competitiveness. In agriculture, adaptation activities like conserving water and improving water quality enhances food security. Labor-intensive activities like developing climate-resilient farming and retrofitting infrastructure for flood control build resilience while increasing job opportunities, especially for the poor' (www.worldbank.org).

Third, reeling from *Germanwatch's* Global Climate Risk Index ranking the Philippines 4th out of 180 countries most affected by extreme weather, the Philippine government stepped up its mitigation efforts against climate change. The Philippines therefore ratified the 2017 Paris Agreement on Climate Change in March that year and urged all parties attending the United Nations General Assembly in 2020 'to make good and honor their commitment to fight climate change and strengthen communities and peoples for preparedness and resilience.' The Philippine government 'also formulated a Cabinet Cluster on Climate Change Adaptation, Mitigation, and Disaster Risk Reduction Roadmap for 2018 to 2022 to mainstream climate change and disaster risk reduction to identified climate vulnerable provinces and major cities' *(gmanetwork.com, 27-Jan-2021).*

Fourth, the Philippines has been actively collaborating with international initiatives to mitigate climate change since the first Aquino administration. For instance, the country created the Inter-Agency Committee on Climate Change (IACCC) in 1991 chaired by the Department of Environment and Natural Resources Secretary. It signed the United Nations Framework Convention on Climate Change in Rio de Janeiro in 1992 and ratified it in 1994. The Philippines also signed the Kyoto Protocol along with 153 other nations in 1998. The UNFCCC 'established an international treaty to combat dangerous human interference with the climate system in part by stabilizing greenhouse gas concentrations in the atmosphere.' The Kyoto Protocol extended the 1992 UNFCCC *(www.env.go.jp).*

Fifth, the Philippines has likewise adopted focused measures to protect its rich biodiversity from the harmful effects of environmental degradation and climate change. For one, it has dedicated a bureau under the Department of Environment and Natural Resources (DENR) to accomplish just that. The Biodiversity Management Bureau (BMB) of DENR exists to 'protect the Philippines' biological diversity, and properly manage and conserve these important resources and the ecosystem services they provide' *(DENR-BMB Facebook Page)*. A latest initiative of the DENR has been to partner with the Global Environment Facility (GEF) to help fund the country's Biodiversity Corridor (BC) project which requires an investment of USD74.961 million as reported by *Manila Bulletin* in July 2021. US-based GEF is a partnership of UN and other agencies, multilateral development banks, and international NGOs. It works with 183 countries including the Philippines. Central Mindoro and Eastern Mindanao are the pilot project areas of the BC project. According to the DENR, 'the project will benefit the environment with a carbon sequestration of 44.3 million metric tons over 20 years, and at least 65,000 individuals 30% of which are indigenous peoples in terms of sustainable natural resource management and livelihood improvement' *(https://mb.com.ph, 7-July-2021).*

Sixth, the DENR in May 2021 partnered with the United States Agency for International Development (USAID) 'to implement PhP1.97 billion worth of projects aimed to protect biodiversity and improve access to water.' Reported by *BusinessWorld,* the department signed memorandums of understanding 'to embark on the PhP1.1 billion Sustainable Interventions for Biodiversity, Oceans and Landscapes (SIBOL) project and the PhP870 million Safe Water initiative.' The projects will run for five years *(https://www.bworldonline.com, 30-May-2021).*

Seventh, another initiative of the DENR in collaboration with USAID and Conservation International to protect biodiversity is The Protect Wildlife Project launched in 2016 'to combat the threats to wildlife and the causes of biodiversity loss in the Philippines while taking into consideration environmental threats such as habitat loss, unsustainable harvesting, and illegal poaching' (https://www.conservation.org). There are many other Philippine collaborations with the international community toward preserving local biodiversity. Almost the entire archipelago is represented when it comes to such initiatives as the ones protecting wildlife, forest, marine, and other ecosystems in Negros, Panay, Sarangani, Davao Oriental, Sulu, Sierra Madre, Bohol, Mindoro Strait, Zamboanga Peninsula, Palawan, South Cotabato, Batanes, Siargao, and Cebu (www.denr.gov.ph).

Eighth, I just attended a webinar on EU-ASEAN Strategic Partnership Dialogue in early August 2021 and the agenda was on every conceivable area of cooperation from security to the environment between the European Union and the Association of Southeast Asian Nations. Expressing the Philippines' strong support to international rule of law and cooperation with the EU was Foreign Affairs Undersecretary Maria Theresa Lazaro. Meanwhile, EU Ambassador to the Philippines Igor Driesmans reiterated the EU's commitment to the significant breakthrough in the strategic partnership arrived at only a year ago (2020) between the EU and ASEAN. The areas of cooperative arrangement 'include economic cooperation on such issues as the response to COVID-19, climate change and green growth, sustainable development and connectivity, maritime cooperation, and cybersecurity.' Last but

not least, Singapore's Permanent Representative to the ASEAN *Kok Li Peng* echoed ASEAN's strong commitment to the new strategic partnership with the EU.

Along this area, it therefore comes as no surprise that the UK, along with other western allies in tow, has recently adopted previously unseen initiatives like sending a naval armada for drills through the South China Sea to help ensure freedom of navigation now being contested by China with its historical Nine-Dash-Line claim. It happened in mid-2021 when the UK tested its Carrier Strike Group led by its new aircraft carrier HMS Queen Elizabeth through a maritime journey that sailed from the Suez Canal through the Indian Ocean on to the South China Sea via the Strait of Malacca. The UK warship was escorted by 2 destroyers, 2 anti-submarine frigates, a submarine, 2 auxiliary supply ships, a US Navy guided missile destroyer, a Netherlands frigate (for air defense), air power (RAF F-35 B stealth fighters and US Marine Corps F-35 B's) from the deck of the 65,000-ton aircraft carrier. *(Patalano, Alessio: 11-August-2021).*

Photo Credit: AFP/Adrian Dennis | Philstar Global

Finally, if there are any stumbling blocks to the government's drive to address climate change, better the environment, and improve lives, that would be corruption. The late former DENR Secretary Gina Lopez battled it during her term. In a Rappler *(www.rappler.com, 7-Feb-2017*) talk she gave in early 2017, she reported that only 12 mining firms passed the DENR audit and that the DENR had to order the closure of 23 firms and the suspension of 5 others. She lamented the corrupting impact of mining money and big business fund contributions to political campaigns. That despite rules and regulations, mining operations illegally 'kill water, adversely affect life, and keep our people poor.' In *July 2020, Tara Yap* of the *Manila Bulletin* quoted DENR-6 Regional Director Jim Sampulna admitting that 'corruption exists in the processes and procedures in the department such as in requests and issuances of permits, application for land titling, request for public land survey and other services offered to the public.' For instance, there was an issue of fake land title issuance in 2015 involving a popular beach destination on Sicogon Island in Carles town, Iloilo province *(https://mb.com.ph, 13-July-2020).*

The issue of corruption goes way back and continues to the present day. As far back as 2010, the then DENR Secretary Ramon Paje made curbing illegal logging and corruption his department's priority, launching 'OPLAN Kalasangan.' At one point, the initiative yielded the 'confiscation of 14,760 pieces of illegally-sourced timber with a volume of 2,924,694.98 board feet' from the 'timber-rich regions of Cagayan Valley and Eastern Mindanao' *(www.officialgazette.gov.ph, 29-Dec-2010)*. In July 2017, DENR Secretary Roy Cimatu even signed a memorandum of agreement with the Volunteers Against Crime and Corruption (VACC) to help with the department's campaign drive against corruption which continues to threaten the DENR's mission of protecting the environment, fighting against climate change, and safeguarding the world's biodiversity found in the Philippines *(https://businessmirror.com.ph, 31-July-2017).* President Rodrigo Duterte himself admitted in February and again in May 2021 that 'there is still corruption in this government and any other government that will come after me.' He further added that 'eradicating corruption is impossible and unachievable within his remaining months in office.' It is not a very comforting message coming from the highest Philippine official. As if to soften the impact of his dismal confession, Duterte then announced the dismissal of four DENR employees on corruption charges *(https://mb.com.ph, 14-May-2021).*

CONCLUSION. This discourse re-visited the basic issues on climate change. It attempted to provide an update of the current situation obtaining in the Philippines and the rest of the world. For better appreciation, its narrative moved from a view of the larger picture to the narrower scope with a focus on the Philippines. The discussions covered the essential issues on biodiversity especially as they affect the vast ecosystems found in the Philippines. The significant concentration of the world's rich biodiversity and other essential resources in Philippine territory has naturally made the country also a security flashpoint. The maritime issues in the Philippines therefore do not only highlight the need to assess the country's initiatives toward preserving the world's marine ecosystems. They likewise point out concerns that have to do with man-made risks to biodiversity including those that result from maritime incursions, whether these are economic or security in nature. Also discussed were other initiatives adopted by the Philippines in cooperation with the international community. Finally, it was pointed out that if there is any significant stumbling block to the government's drive to address climate change, better the environment, and improve the people's lives, it is corruption.

About the Author:
A public servant and patriot, retired Colonel Dencio Acop graduated from West Point in 1983. After serving in the Philippine Constabulary and Philippine Army, he worked in the corporate sector and now writes freelance. His blogspot, Dencio's Pen, contains a collection of his published works.

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DELIBERATE ACQUISITION OF SUBMARINE WARFARE CAPABILITY OF A NAVY

by CAPT Tomas D Baino PN (Ret)

INTRODUCTION

This article emphasizes the dangers of operating a submarine short of maturity in a NAVY. They face threats and dangers of deep water that needs to be understood by a NAVY aspiring to fulfill the dreams of acquiring a submarine warfare capability for the defense of their country in territorial seas.

This article is not to discouraged the NAVY, but rather inspire the NAVY to strive more to be proficient in terms of operational, materials, and training readiness in order to achieved maturity and be ready to accept new top line technology in Diesel Electric Submarines with Air Independent Power (AIP).

The modest approach of acquiring a submarine warfare capability must be first within the affordability and sustainability means similar to other countries which are now presently operating new top of the line Diesel Electric Submarines. Korea, Pakistan, Japan, China, and other countries who started first with Midget Submarines, etc., have attained maturity in submarine warfare capability in the most affordable ways by developing gradually their confidence in deep water beneath the waves.

THREAT TO A SUBMARINES

There are several threats to submarines which can be classified as internal and external threats. First, we must consider the human factor as some of the threats can be managed within our means.

1. **Training Readiness** – proficiency starts with the basic theory, knowledge in developing skills through practicum and actual real time participation in the operations and maintenance of a submarine in the training laboratory ashore, down to the pier side to extremely shallow waters of coastal areas on a gradual phase by phase basis to develop skills and proficiency. A submarine crew cannot afford to commit mistakes and it's always disastrous to the entire submarine crew and very expensive equipment once mistakes were committed on a submarine even when a submarine is at the drydock, operating at the surface and most of all in the deep beneath the waves.
2. **Personnel Readiness** - is taming our attitude, behavior reflexes, and instinct, working in a very confined space in the deep without seeing the sun for several weeks and must know by heart every system and sub-system, from bolts to nuts with perfect knowledge about how a submarine system efficiently and safely functions as a single system.
3. **Material Readiness** – is to make ready and see to it that the submarine is more than 100% ready for operation, resilient to the hydrostatic pressures constantly exerted to the hull surface that committing one mistake tends to crush the hull to collapse to the deep and that would be a disaster. The batteries of a submarine, when faulty, can produce a hydrogen gas which can make the entire crew suffocate and can also trigger detonation of the ordnance inside the submarine underwater. Gas is the worst enemy of submarines which is the result of poor maintenance and neglect.

Obviously, the external threats are the hostile actions in anti-submarine warfare which we will discuss in separate articles.

SUBMARINE TIME UNDERWATER LIMITATION

Submarine time underwater is always limited and dependent upon the drain time of batteries, fuel, quality of air, morale of the crew under stressful prolonged submarine operation underwater. A submarine is always running out of time and is very uncertain where everyone will depend on prediction works through ECHO or Acoustic signatures when a submarine navigates or loses a communication contact. A submarine cannot or could hardly communicate in the deep.

Table 1
Records of Submarine Accidents
Year 2000 to 2021

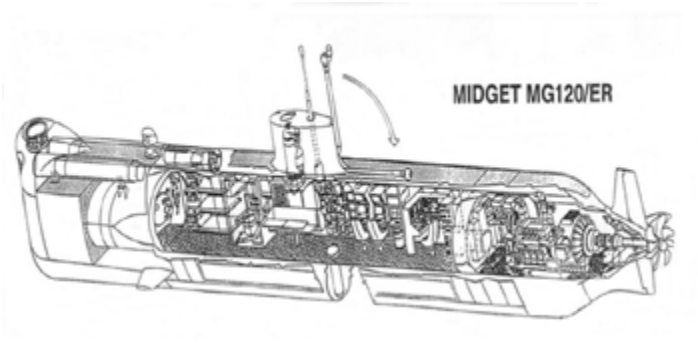
COUNTRY	YEAR	INCIDENT	REMARKS
1. Russian Navy	August 2000	Kursk Submarine Leak on Hydrogen Peroxide in the forward torpedo room triggered explosion of warhead	Total loss

2. United States Navy	February 2001	USS Greeneville collided with Ehime-Maru, due to poorly executed SONAR Sweep and ineffective periscope sweep	9 crewmen of Ehime-Maru killed
3. United States Navy	March 2002	USS Dolphin experienced severe flooding and fire inside of compartment	Submarine abandoned off San Diego California coast
4. UK Royal Navy	November 2002	HMS Trafalgar run approved close to skye aground	Damage £5 Million pounds damage to hull; three (3) crewmen injured
5. Australian Royal Navy	February 2003	HMAS Dechaineux, a Collins class submarine operating at maximum diving depth, high pressure pipes busted with flooding at Engine room.	If the damage on high pressure pipes was not prevented, submarine would have been lost in the deep.
6. PLA Navy China	May 2003	Mechanical malfunction in submarine Ming Class Submarine 361	Entire crew of 70 men all killed/lost at sea.
7. Russian Navy	August 2003	Russian November Class Submarine K-159 sank in Barents Sea.	9 sailors killed
8. US Navy	October 2003	US Navy Los Angeles Class submarine, the USS Hartford run aground in the Harbor of La Moddalena in the Mediterranean Sea.	Worth of damage on Hull: US$9 million
9. Unknown	January 2004	Unidentified submarine got caught in the net of Fishing Trawler Breiz and sank during NATO Exercise	Fishing Boat Sank. Submarine was not identified
10. Royal Canadian Navy	October 2004	HMCS Chicoutimi suffered fire onboard due to poor insulation of power cables due to sea water electrical arcing.	Lt. Chris Saurders died due to suffocation from smoke.
11. US Navy	July 2005	USS San Francisco while submerged collided with undersea-terrain.-terrain.	97 sailors injured
12. Russian Navy	August 2005	Priz-Class Deep submerged vessel entangled with fishing net; re-used by Royal Navy.	Unable to free itself but rescued by Royal Navy Scorpio ROV
13. US Navy	September 2005	USS Philadelphia collided with Turkish Merchant Ship at Persian Gulf, 602 km Northeast of Bahrain.	No personnel injuries; superficial damages.
14. Russian Navy	September 2006	Victor Class Submarine Danill Moskovsky, fire due to electrical problem.	Two (2) Crewmen died
15. US Navy	December 2006	USS Minneapolis washed by heavy waves in Plymouth South, England.	Four (4) crewmen washed away onboard, death of Senior Chief Huggins.
16. US Navy	January 2007	USS Newport News submerged transmit at straight of Homes Persian Gulf collided with Japanese Tanker.	No Casualty

17. Royal Navy	March 2007	HMS Tireless explosion caused by air purification equipment at forward section of submarine.	Two (2) crewmen died
18. Royal Navy	May 2008	HMS Superb hit and collided with underwater rock, North Red Sea 130 km. from Suez.	SONAR damaged and was decom-missioned from service.
19. Russian Navy	November 2008	Russian K-152 Nepal Class Nuclear Submarine died of asphyxiation from gas leak.	20 Crewmen died
20. Royal Navy	February 2009	HMS Vanguard and; HMS Triumphant collision in the Atlantic Ocean.	No casualties or damage from being submerged
21. US Navy	March 2009	USS Hartford with USS New Orleans collision in the strait of Hormuz.	No personnel and material damage
22. Indian Navy	February 2010	Faulty Battery Valve leaked oxygen gas that resulted in fire onboard and caused explosion.	One crewman killed and two were injured
23. Indian Navy	August 2010	Crewmen and maintenance team washed away onboard by heavy seas.	No casualty. Crew were recovered from the sea by helicopter.
24. Royal Navy	October 2010	HMS Astute ran aground on bars in the isle of Skye, Scotland.	Vessel was emergency towed. No personnel and materials casualties.
25. Royal Canadian Navy	June 2011	HMCS Corner Brook ran aground in Nootka Sound of the coast of Vancouver Island.	Minor injuries sustained on two crew members.
26. US Navy	May 2012	Fire onboard during submarine scheduled maintenance.	Submarine was de-com-missioned.
27. US Navy	October 2012	USS Montpellier with USS San Jacinto collided during exercise at periscope depth at the coast of Florida.	No crew injured. Cause of collision: human error.
28. Indian Navy	August 2013	INS Sundhurakshak kilo-class submarine sank after explosion caused by ordinance exploding onboard.	27 Sailors jumped overboard; 18 dead crewmen recovered during helicopter operations.
29. Russian Navy	September 2013	Oscar K-150 submarine caught fire onboard during welding activity on hull at Zvezda shipyard, Vladivostok.	Damage to health of 15 crewmen of submarine
30. US Navy	January 2013	USS Jacksonville collided with unidentical Merchant vessel at Persian Gulf.	Lost one Periscope
31. Royal Navy	July 2016	HMS Ambush collided with a Merchant Ship at the strait of Gibraltar.	Significant damage to conning tower
32. USA Navy	August 2017	VC3 Nautilus suddenly sank.	Scuttled
33. Argentine Navy	November 2017	ARA San Juan with 44 crewmen missing off the coast of San Jorge Gulf Region.	Search declared futile. Hopes of rescuing alive crew abandoned.
34. Indonesia Navy	February 2021	KRI Nargala of Indonesian Angkatan Laut lost at sea at 2000 meters depth in the strait of Bali. Explosions onboard during the torpedo firing exercise.	Total lost; no survivor recovered.

SHALLOW WATER ATTACK SUBMARINE FOR A START

The Shallow Water Attack Submarine (SWATS) operates in extremely shallow water; can be a part or component of a coastal defense; and can be positioned against the hostile forces probable sea avenues of approach in ambush position intruding into territorial seas. This submarine can engage another submarine or surface hostile vessels. She can stay motionless in a quiet mode waiting for the targets to intrude within the killing radius, and lay anti-ship/anti-submarine mines The SWATS can carry complements of a team of Special Warfare Group as a Commando with limpet mines that can be attached to the bottom hull of hostile target while at anchor. In case of submarine



accident, escape from the ill-fated submarine in shallow water (less than 100 meters) is possible through flotation suit with supply of oxygen tank.

AFFORDABILITY AND SUSTAINABILITY WITH SUFFICIENT DEFENSIVE FIREPOWER

A flotilla of SWATS (3 x Midget Submarine) rough order price magnitude including training, base support facilities can be roughly achieved at an initial cost of US$75M (more or less) as compared to the top of the line diesel electric submarine with Independent Power System which roughly costs US$900M to US$1.20B for 3 x units with integrated logistic support for a number of years.

Specifications:

Length overall	27.28 meters
Height overall	5.59”
Pressure Hull Diameter	2.30”
Pressure Hull Length	19.10”
Displacement	102 tons (surfaced);
	110 tons (sub-merged)
Operation Depth	In excess of 100 m
Test Depth	In excess of 100 m
Max. speed (surfaced)	9 KTS (on diesel engine)
Max. speed (submerged)	6 KTS (on batteries)
Endurance	Over 1000 NM on diesel engine; Over 40 NM on batteries
Complement	14 (6 operators + 8 commandos)
Armament	Torpedo Firing Tubes, Mine Laying Hooks

- with two MK 5, torpedoes, limpet mines and bottom laid sea mines, MK 5 Torpedo – speed 27-40 knots, effective range 1000-4000 yards homing with acoustic guidance system (active passive);
- 15-20 days (more or less) depending on the drain time of battery usage.

INVINCIBILITY OF SUBMARINES

The submarine is the most feared adversary of surface naval commanders in areas of conflict. The only way to defect a submarine while underwater through acoustic signatures but once detected, her invincibility is lost and the effective use of the submarine weapons system is denied. So, instead of a submarine being the hunter, she became now the hunted. Whereas, the shallow water attack submarine (SWATS) in stationary ambush position in shallow water is motionless and very silent with only batteries supplying power to the submarine systems, can conserve power and is very difficult to defect. The SWATS is also a diesel electric submarine with AIP.

RECOMMENDATIONS

A Navy should start first as a beginner in a modest and simple submarine warfare capability, affordability, sustainably defensive mode, and sufficiently supplied application of firepower within financial bounds. It can be deliberately achieved as the Navy approaches maturity.

Whereas a top of the line Diesel Electric Submarine with Air Independent Power is an offensive weapon mainly capable of conducting preemptive strike to hostile forces operating base outside of our territory may not be within the provision in our constitution. The extra capabilities of Diesel Electric top of the line submarine however can be used also for defensive modes.

About the Researcher:

1. Retired Navy Captain of the Philippine Navy 2004.
2. Registered Civil Engineer and Naval Architect with post graduate study in Submarine Design, University College of London, 1998 (under the sponsorship of the UK Ministry of Defense).
3. Served as Consultant with DOTR/PCG on JICA Ship Acquisition Project for 3 years.
4. Presently a member of the Editorial Board of the Maritime Review.

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BROWN EAGLE UNDERWATER: THE PHILIPPINES' QUEST FOR SUBMARINES

by CDR Mark R Condeno

I am sharing an article I had written six years ago, now with revisions as further information came to light in supporting the Philippine Navy's acquisition of Submarines through a historical perspective.

INTRODUCTION. On **22-September-1914,** in the cold choppy waters of the North Sea, a few miles from the coast of the Netherlands in less than 90 minutes, HMS *Aboukir*, HMS *Cressy* and HMS *Hogue* were sunk by SMS *U-9* under the command of Captain-Lieutenant (Lieutenant Senior Grade) Otto Widdegen. The three ships were sailing line abreast on the turbulent seas when a German torpedo struck. A total of 1,136 lives perished. The sudden attack struck a chord on both the British and German Navies, as it dawned the effect of Submarine Warfare.

On **30-July-1945**, Philippine Sea 14 minutes after midnight, six Japanese type 95 torpedoes hit and sunk the Heavy Cruiser USS *Indianapolis* (CA-35) where 300 out of 1,196 officers and crew went down with the ship.

On **13-July-1901 - August 1950**, China coast, La Perousse Strait and Formosan waters, the early days of the Korean War, the USS *Catfish* (SS-339) and USS *Pickerel* (SS-524) make way towards a reconnaissance of the China coast to monitor the movement of the Communist Naval Forces who might open a second front on Taiwan.

On **20-December-2023**, Scarborough Shoal, a platoon of Philippine Combined Reconnaissance Teams (CRTs) jumped off from a PAF C-130J on the warm waters of the West Philippine Sea, a derring-do attitude even for the elite soldiers with nothing but the blackness of the water below welcoming them until the massive black silhouette of BRP Vicente Catalan (U-198) emerged from the depths to quietly recover them from their descent and nimbly embraced them from the prying eyes of the enemy.

Three real world actions and one fictional scenario in four different timeframes with a solitary focus –the Submarine.

The first, during the Great War, a time when the undersea weapon was still in its infancy with early false starts, crude tactics and strategy, and where most of the major naval powers had yet to decide the role of the submarine in its fleet and conflict.

The second, a tragic event in the closing days of World War II which focuses on tactics, manoeuvres, and intelligence.

Third, a typical characteristic to serve as the eyes and ears of the fleet but also have the chance to deal a first blow to the enemy and lastly, in utilizing the craft's stealth in inserting troops into hostile enemy territory.

More than a thousand articles and essays have already been written on the essence of the submarines and this article would be no different but would rather seek to explore the characteristics of a submarine that makes it a compelling weapons platform and discusses how they contribute to sea denial and maritime power projection for the world's second largest archipelago.

HISTORICAL PRECEDENTS. It has been eight decades and seven years since it was envisioned to be a part of the country's future naval force the Offshore Patrol (OSP). During the 1934 Philippine Constitutional Convention, Colonel Blas Villamor, a Delegate of the Province of Apayao, proposed that apart from Rapid Cruisers, a squadron of Torpedo Boats and Submarines be procured to serve as the offensive arm of our planned naval unit. On 09-February-1939, the OSP was activated but it was only the former that was procured and became part of the fleet.

The exploits of the OSP during the Pacific war is well recorded in our Naval and Maritime history and the story of the courage of its officers and men serves for us to emulate them, but what might have taken place if the OSP had submarines during the early days? Would the Japanese landing in Lingayen be any different?

It was in the late 50s and early 60s that the Philippine Navy begun its quest for Submarines, specifically for 3 diesel submarines coinciding with the transfer for PBY Catalina Flying Boats earmarked for the nascent Philippine Naval Aviation Unit but later turned over to the Philippine Air Force. They were used heavily by Sulu-Air Task Group (SATAG) during the tumultuous days in Mindanao. However, none of the submarines requested followed.

Another major item of interest during the 5-year AFP Modernization Plan from 1977-1981 was the acquisition of Submarines specifically conventional powered attack submarines in the class of the German Type 206, and 2 Training Submarines of the SST type.

The SST types were to be inducted in 1977 with 1 unit and another in 1979, while the Type 206s were from 1978 to 1981, one Submarine each year. Had these materialized, the Philippine ASW Triad could have started and strengthened its foundation.

Fortunately, the PAF PBY Catalina's worked well with the Philippine Navy's 4 Harbour Defence Motor Launches (HDML) – all Ex Royal Navy but came from the Royal Australian Navy and were Australian built. The HDMLs have Radars and form part of our Anti-Submarine Force along with our 16 Submarine Chasers.

The Training Submarine in question might have been the US SST Type 1 or the Ex USS Mackerel which was decommissioned in 1973 as no other SST types were in operational service at that time.

Several years later, in 1998, the concept paper for a Submarine capability was endorsed by the then Flag Officer in Command (FOIC, PN) VADM Eduardo Ma R Santos AFP to the Department of National Defense which was received positively. A core group was established as early as 1999 during the incumbency of then FOIC PN VADM Luisito Fernandez AFP.

It was also in this period that selected Filipino Naval Officers were sent for schooling overseas namely in the United Kingdom, with visits to Germany and Pakistan; the latter operates the French-made Agosta Class Submarines. It was during this period that the Philippine Navy looked into the Shallow Water

Attack Type (SWATS) submarine.

Egyptian Navy's first Type 209/1400 Submarine S-41. Photo credit: Ahmed XIV.

PNS Hashmat of the Pakistan Navy. She is an Agosta Class

Submarine which was looked into by the Philippine Navy during the 1990s. Photo by Tasnim News Agency.

U-18 (S-197) of the German Navy, a Type 206 Submarine.

Photo credit: https://www.seaforces.org/marint/German-Navy/Submarine/Type-206-class.htm accessed 09-Nov-2018.

By the advent of President Benigno S Aquino III administration, coinciding with the debacle with China on the South China Sea, along with the desired force mix program, the establishment of a Submarine arm again surfaced with the projected acquisition of 3 vessels. Related to this matter was the establishment of a Submarine Group for the Philippine Navy in 2013.

Several changes on the Desired Force Mix program has occurred, specifically on the requirements for undersea warfare under the Maritime Force projection package in which we envisaged to acquire two diesel electric submarines by 2018 on the 2nd horizon, and four units on the 3rd horizon. In the subsurface domain, the Philippines continued participation on allied naval exercises geared for submarine related operations; seminars and shipriders similar to the program with the USS Cheyenne would not only benefit us but develop interoperability with our allies.

OPERATIONAL FEATURES. Stealth, Freedom of Movement, Flexibility and Lethality are the primary characteristics of the craft, and when used collectively it is a potent weapon on its environment.

Covertness is the essence of the submarine, paired with the geographical features of the country which it could use to its advantage through mastery of terrain, coves, bays and shallow waters. Stealth is synonymous with the craft's freedom to sail from one point to another regardless of poor sea and weather conditions. Flexibility on the other hand is still identical with the first two as it could readily assume a different role as noted on the third scenario above. Ultimately, the array of weapons, sensors and special operators onboard can do some lethal punches on the enemy.

SEA DENIAL and FORCE PROJECTION. Several historical examples of Sea Denial can be cited. Foremost was during the Falklands War of 1982 and the 1971 India-Pakistan War, the mere presence of HMS Conqueror and PNS Hangor had effects on both the Argentinean and Indian fleets.

Scenario 3 and 4 above is a classic case of force projection that would be vital for the country and the navy in dealing with internal and external security operations such as infiltration into hostile shores and convoy escort duties.

CONCLUSION. As vindicated above, though considered an offensive weapon, the introduction of a submarine flotilla in the Philippine Fleet would be a vital factor that should have been pursued early on based on historical background literature and familiarity with the submarine exploits specifically during World War II.

The confrontational strategic environment of the South China Sea, piracy, and maritime terrorism, among others, make it imperative for the Philippines to acquire submarines. The primary imperative of protecting the country's strategic location in the Southeast Asian region is further validation for a Philippine Submarine Arm.

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PPA PMO MISAMIS OCCIDENTAL/OZAMIZ AWARDED BY BANGKO SENTRAL NG PILIPINAS

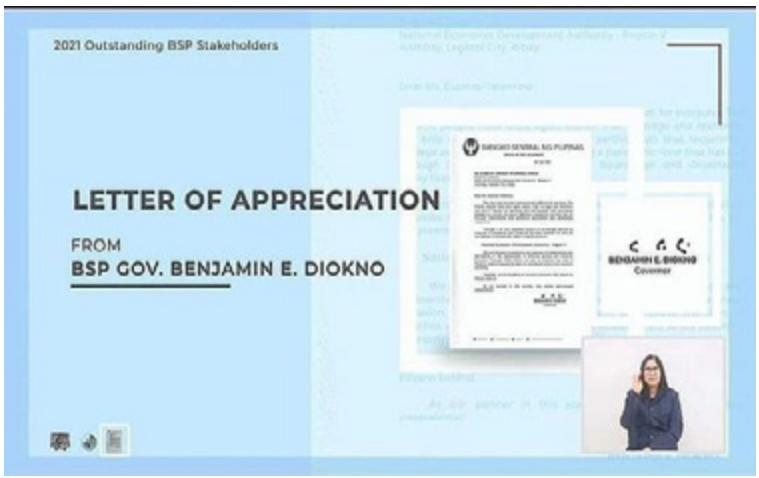
by PPA PMO MOZ

PPA Port Management Office of Misamis Occidental/ Ozamiz has been awarded the Outstanding Stakeholder by the Bangko Sentral ng Pilipinas in recognition of its invaluable contribution to the achievement of BSP's objectives and values.

This year's BSP virtual awarding ceremony carries the theme, **"Pagpupugay at pagkilala sa gitna ng hamon ng pandemya"** that sums up its objective on giving due recognition to all their partners going beyond the call of duty in the name of service amid the global health emergency.

Attendant to this recognition, the special tokens received by PMO MOZ from the BSP include the following:

1. Limited edition and individually-numbered BSP Art Plate which features the painting "Buhay Filipino" by the esteemed Filipino Modernist Hugo Yonzon, Jr.;
2. 500-Piso BSP Silver Commemorative coin in celebration of the 25th anniversary when the Central Bank of the Philippines was reconstituted as the Bangko Sentral ng Pilipinas on July 3, 1993; and
3. Letter of Appreciation individually signed by the Chairman of the Monetary Board and the Governor of the Bangko Sentral ng Pilipinas.



Source: Philippine Ports Authority on Facebook. Accessed on August 1, 2021.

A HISTORICAL GLANCE ON THE DEVELOPMENT OF NAVAL FACILITIES IN THE PROVINCES OF CEBU AND GUIMARAS

by CAPT Tomas D Baino PN (Ret)

INTRODUCTION. In 1992, the naval facilities in the provinces of Cebu and Guimaras were built by the Philippine Navy through the vision and effort of a senior naval officer, **Rear Admiral Edgardo B Gallos AFP (Ret)**, whose heart and mind had dedicated his life and honor in the service of the Philippine Navy. As a young senior Naval Captain and Commander of the Naval Facilities in Central Philippines from 1992 to 1999, he exerted all effort to pursue a goal until it came to reality: the establishment of naval facilities in Central Philippines. He was a disciplinarian who upheld honor and integrity. He was a mentor in the time honored naval tradition, and was highly respected.

As a Cadet at the Philippine Military Academy Class of 1959

Flag Officer in the Philippine Navy

PRESIDENTIAL PROCLAMATION

1. Presidential Proclamation No. 909, Reserving for Military Purpose a Parcel of Land of the Public Domain situated in the Barangay of Looc Canjulao, City of Lapu-Lapu, Island of Mactan, in the province of Cebu with a total area of 656,690 square meters (65.66 hectares) signed by **President Corazon Cojuanco Aquino** on 28-May-1992.
2. Presidential Proclamation No. 125, Reserving for Military Purposes a Parcel of Land of the Public Domain located in Barangay Looc and Babag, City of Lapu-Lapu, Island of Mactan, in the Province of Cebu with a total area of 785,378 square meters (75.53 hectares) promoted by **RAdm Napoleon Baylon** and signed by **President Joseph Ejercito Estrada** on 28-June-1999.
3. Presidential Proclamation No. 72, Reserving for Military Purposes a certain Parcel of Land of the Public domain situated in the Barangays of Sawang and Saldivar, Municipality of Buenavista, Province of Guimaras, with a total area of 42,770 square meters (42.77 hectares) promoted by **CDR Warlito Garonita** and signed by **President Fidel Valdez Ramos** on 14-October-1992.

INITIAL GROUND DEVELOPMENT. The following Flag Officers in Command of the Philippine Navy from 1992 to 2004 onwards, pursued development projects with immediacy such as perimeter fences, road networks, water and sewerage systems, piers, causeways, dredging works, gymnasiums, chapels, barracks, complex electrical and communication systems, to mention a few. These activities were pursued from the incumbency of **VIRGILIO MERCELO** AFP, and continued under **VAdm PIO CARRANZA** AFP, **VAdm LUISITO FERNANDEZ** AFP, **VAdm EDUARDO MA R SANTOS** AFP, **VAdm VICTORIANO HINGCO** AFP, **VAdm ERNESO DE LEON** AFP, and so on.

The Philippine Navy SEABEES under **RAdm MARGARITO SANCHEZ** AFP undertook the vigorous development groundwork and waterfront dredging.

The aforesaid Presidential Proclamations are tangible evidence of real estate allocated for the Philippine Navy firmly established by the Government and implemented through the efforts and perseverance of then **CAPT EDGARDO B GALLOS PN** (GSC) and his dedicated Naval Officers: **LCDR NARCISO Z SUMILHIG** PN, **LCDR MAXIMO ARCALLANO** PN, and **CAPT PEPITO SELLO** (JAG). Without those Presidential Proclamations, there would be no legal basis to develop the area.

RECOMMENDATIONS. The young generation in the current Philippine Navy Leadership must look back and get to know the officers who toiled with brain and brawn to establish the foundations of Strategic Naval Facilities of the Philippine Navy. The Philippine Navy's humble beginnings were built by naval officers who made these projects a realization for the people of Central Philippines. The dedication of these naval pioneers are worthy of emulation by our new naval officers and men who are tasked to modernize the Philippine Navy and work towards providing security to our country during unstable times.

SHIP & SHIPMATE BEFORE SELF: THE STORY OF TELESFORO TRINIDAD, MOH 1915

by Cecilia Gaerlan

In commemoration of the 106th Anniversary of Fireman Second Class Telesforo Trinidad receiving the Medal of Honor, the USS Telesforo Trinidad Campaign (USSTTC) announces the launching of its initiative to name the first U.S. Navy Warship after an American national of Filipino descent who served in the U.S. Navy. Trinidad holds the distinction of being the first and only Asian American (and first Filipino) in the U.S. Navy to receive a Medal of Honor, in accordance with General Order Number 142 signed by Secretary of the Navy Josephus Daniels on 1-April-1915.

On 21-January-1915, while steaming in the Gulf of California as part of the naval patrol established to protect U.S. interests and citizens in México, the captain of USS San Diego (Armored Cruiser No. 6) conducted a four-hour, full-speed and endurance trial to determine if the cruiser could still maintain its officially rated flank speed. At the end of the trials, an obstructed tube of one of the ship's boilers gave way, creating an eventual chain reaction of other boilers, killing nine men and injuring several others.

USS San Diego (ACR-6) (Photo from Naval History & Heritage Command)

From the May 1915 (Vol. IX) issue of "Our Navy," the Standard Magazine of the United States Navy: "At the time of the explosion, Trinidad was driven out of fireroom No. 2 by the force of the blast, but at once returned and picked up R.E. Daly, Fireman Second Class, whom he saw to be injured and proceeded to bring him out. While passing into Fireroom No. 4, Trinidad was just in time to catch the explosion in No. 3 Fireroom but without consideration for his own safety, although badly burned about the face, he passed Daly on and then assisted in rescuing another injured man from No. 3 Fireroom."

"Telesforo Trinidad, fireman second class, not only received a letter of commendation but also the much-prized Medal of Honor and a gratuity of one hundred dollars."

Filipino Sailors (Photo from the Filipino American National Heritage Society)

Telesforo de la Cruz Trinidad came from humble beginnings and was born on 15-November-1890, in New Washington, Aklan Province, Panay, Philippines. He enlisted in the U.S. Navy as part of the Insular Force in the Philippines in 1910 and served during WWI and WWII until his retirement in 1945. He lived in Imus, Cavite, Philippines until his passing on 8-May-1968 at 77 years old.

The Philippines has been one of the United States' strongest allies in the Pacific and both countries have maintained uninterrupted economic, cultural and military ties. After the Spanish-American war in 1898, the Philippines, Guam and Puerto Rico, were ceded to the United States for $20M in accordance with the Treaty of Paris. In 1901, President McKinley signed an executive order allowing the recruitment of 500 Filipinos in the Navy and 6,000 Filipinos in the Army to serve as part of the Insular Force of the War Department. During World War I, 6,000 Filipinos enlisted in the U.S. Navy and thousands more were recruited through the interwar years. During WWII, thousands of Filipinos served under the U.S. Army Forces in the Far East and the U.S. 16th Naval District.

President Truman during the Potsdam Conference in Germany with Filipino Stewards (Photo from the Harry S. Truman Library)

After the Philippines obtained its independence from the United States in 1946, more than 35,000 Filipinos were recruited into the U.S. Navy from 1952 to 1992 under a provision of the Republic of the Philippines-United States Military Bases Agreement. In addition, thousands of Americans of Filipino descent enlisted during this same 40-year period and continue to do so until today. There is no ship in the U.S. Navy with a name that recognizes this strong alliance forged in war and peace.

Capt. Ron Ravelo, Former Commander of the USS Abraham Lincoln (CVN72). Photo Credit: Manilalivewire.com

If approved, Fireman Second Class Trinidad will be the first enlisted Sailor and Medal of Honor recipient, and the first American of Filipino descent, to have a combat ship named after him. This distinguished honor will recognize the commitment, distinction, and valor not only of Trinidad but of the thousands of Filipinos who have served faithfully and loyally for the past 120 years.

USSTTC is a U.S. registered non-profit (501c3) and a national grassroots advocacy group comprised of serving and retired members of the US Armed Forces, community leaders, academics, corporate executives, civic leaders and veterans' families. For more information, please visit our Facebook page at facebook.com/USSTTC or our website at https://www.ussttc.org/ or contact Cecilia Gaerlan at cecilia@bataanlegacy.org or call (510) 520-8540. USSTTC Chairman is Capt. Ronald Ravelo, USN (Ret), and Col. Nonie Cabana, USAF (Ret) is Executive Director.

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Source: https://mohmuseum.org/ship-shipmate-before-self-the-story-of-telesforo-trinidad-moh-1915/?fbclid=IwAR2vO_p8CM4qw8dhW1do-uDr24Igsu8UFuuxv95uWe0kGQW3LQEkCkJTV2c

REVISITING THE NEED FOR A LEGALLY BINDING CODE OF CONDUCT IN THE SOUTH CHINA SEA: CHASING A MOVING TARGET

by Edcel John A. Ibarra

Chinese Foreign Minister Wang Yi speaks with his counterparts at a virtual ASEAN-China Ministerial Meeting on 3-August-2021. The parties agreed during the meeting to resume consultations on the COC, which had been postponed since the start of the COVID-19 pandemic last year. Photo Credit: Ministry of Foreign Affairs of the People's Republic of China.

Legal bindingness is one of the most contentious points in the consultations between ASEAN countries and China on a Code of Conduct in the South China Sea (COC). Legal bindingness will differentiate the COC from the nonbinding 2002 Declaration on the Conduct of Parties in the South China Sea (DOC); after all, a legally binding agreement was the original vision of the ASEAN countries when COC discussions with China first started in 1999. In what is publicly known about the Single Draft COC Negotiating Text in the current round of negotiations, legal bindingness is implied in Vietnam's proposal for the COC to undergo ratification and registration with the UN, processes that normally apply only to formal treaties.[1]

China's Resistance to Legal Bindingness

China, however, has historically resisted a legally binding COC, which partly explains why the first round of negotiations resulted only in the nonbinding DOC. China's resistance to a binding COC also explains why it delayed restarting COC consultations until 2013.

Nonetheless, there are signs that China is reconsidering this position. In 2019, Foreign Minister Wang Yi expressed optimism that a COC would be completed within three years. He also announced that China supports a COC that has "binding force," recognizing that the COC will have to be "an upgraded and strengthened version" of the DOC.[2]

Still, whether ASEAN and China can agree on a legally binding COC remains uncertain. China may support a legally binding code only when its own version prevails in the negotiations.

China's proposals include provisions that limit the involvement of countries outside the region in the South China Sea. For example, China proposes that economic activities at sea, including oil and gas development, "shall not be conducted in cooperation with companies from countries outside the region."[3] China also proposes that the parties "shall not hold joint military exercises with countries from outside the region, unless the parties concerned are notified beforehand and express no objection."[4]

Legal Bindingness in Practice

Apart from China's resistance, other arguments have been made to downplay the importance of legal bindingness for the COC.

Unlike the EU which has a highly legalistic structure, ASEAN has historically eschewed legalism in managing the affairs of the region. As a result, ASEAN agreements are characteristically informal and ambiguous about their legal bindingness. Few have taken the form of a treaty, but arguably, most ASEAN agreements have been complied with by members anyway. Even ASEAN's founding agreement, the 1967 Bangkok Declaration, is not a formal treaty. A treaty-like foundational agreement, the ASEAN Charter, only emerged forty years later, in 2007.

Still, although voluntary compliance is a norm within ASEAN, the norm may not extend to the ASEAN-China mechanism.

In its position paper on the South China Sea Arbitration, China argued that the DOC is a legally binding agreement.[5] It used this argument to claim that the Philippines is barred from seeking legal recourse through arbitration because the Philippines had bound itself under paragraph 4 of the DOC to settle disputes only through "friendly consultations and negotiations." The Philippines argued that the DOC is not a legally binding agreement.

The arbitral tribunal ultimately found that while the DOC is structured like a treaty, it introduces no new legal obligations and simply reaffirms the parties' existing commitments under international law. Most important, the parties themselves — including China at the time the DOC was being negotiated— did not consider the DOC to be legally binding. Indeed, as noted by the tribunal, diplomats involved in drafting the DOC characterized the document as a political document rather than a legal document.[6] Moreover, although the 1982 UNCLOS is a legally binding international instrument, including, by extension, the Award on Jurisdiction and Admissibility and the Award of 12-July-2016 in the South China Sea Arbitration, the legal bindingness of the convention and the arbitration mechanism was insufficient to bring China to recognize the legality of the proceedings and the resulting awards. Indeed, China has repeatedly characterized the arbitration as null and void.

Philippine Coast Guard personnel survey several ships believed to be Chinese militia vessels in Sabina Shoal in the South China Sea on 27-April-2021.

Legal Bindingness or Enforceability?

More important than legal bindingness, therefore, is enforceability. A legally binding but unenforceable document is futile. However, the converse—a nonbinding but enforceable document—is not necessarily better. Enforceability depends on the goodwill of the parties, but there is no guarantee that the parties will remain forever good-willed. When goodwill expires, as it likely will when commitments become inconvenient, any party can easily defect. However, parties that renege on their commitments from a nonbinding document cannot be held accountable because noncompliance will have been legal.

Enforceability, then, will be a challenge whether the COC becomes legally binding or not. Some have argued, however, that a nonbinding COC will be the same as the DOC. But nonbindingness is not the sole criterion that will differentiate a COC from the DOC. The DOC is not a perfect political document. Whether binding or not, a COC that tackles issues in the South China Sea with greater specificity than the DOC is preferable.

Legal Bindingness: A Moving Target

In the final analysis, the overarching goal should not be legal bindingness but substantial improvements to the DOC, including a well-specified list of acceptable and unacceptable behaviors in the South China Sea, a clear enumeration of possible repercussions for deviations from international and regional norms, and a concrete and practicable framework for maritime cooperation.

In putting forward these improvements, ASEAN should be careful to include lucid language in the text to minimize room for differing interpretations. Alternatively, ASEAN should consider proposing a quasi-judicial mechanism through which disputes over interpretation may be reconciled.

ASEAN has waited long for a COC, and it must be prepared to wait longer toward a legally binding and substantial document. Still, ASEAN must grab any opportunity that emerges to arrive at a more specific conflict management instrument in the South China Sea, even if it means agreeing to another nonbinding document for the time being.

The danger with this position, however, is that ASEAN, China, and the rest of the world have become so fixated on concluding a COC that when any sort of COC finally arrives, the original goal will be thought to have been achieved. This could mean that the COC will be the final document of its kind and that no further negotiations will take place.

But ASEAN can and should try again in the future. The COC, after all, should be a moving target: until an ideal COC is achieved, ASEAN should press on with the process.

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Source: Edcel John A. Ibarra, "Revisiting the Need for a Legally Binding Code of Conduct in the South China Sea: Chasing a Moving Target," CIRSS Commentaries 6, no. 2 (March 2021), https://www.fsi.gov.ph/wp-content/uploads/2021/08/Revisiting-the-Need-for-a-Legally-Binding-Code-of-Conduct.pdf.

DENR-LED SUMMIT ADOPTS RESOLUTIONS AIMED AT ERADICATING ENVIRONMENTAL CRIMES

by DENR News

The 4th National Environmental Law Enforcement (NELE) Summit led by the Department of Environment and Natural Resources (DENR) ended recently with the adoption of three resolutions to prevent and fight environmental crimes.

The NELE summit, held last July 14-16, resulted in the adoption of resolutions to approve a five-year indicative plan of the National Law Enforcement Coordinating Committee-Sub-committee on Environment and Natural Resources; to support the enactment of the proposed Environmental Protection and Enforcement Bureau (EPEB); and to request for immediate passage of a bill that will amend Republic Act 9147 or the Wildlife Resources Conservation and Protection Act.

Signatories of these resolutions include the DENR, Department of Agriculture, Philippine National Police-Maritime Group, Department of the Interior and Local Government, Department of Transportation, and Department of National Defense.

In his keynote message, Secretary Roy A. Cimatu emphasized the crucial role of DENR's partner agencies in the strict enforcement of environmental laws, as he urged them to "stay vigilant, assertive and cohesive as stewards and guardians of the environment."
He admitted that the DENR has limitations in enforcing the law, which is why it is important that partner agencies and other entities must cooperate to ensure the stringent and effective enforcement of environmental laws.

"During the current pandemic, restrictions on interzonal movements and numerous checkpoints have driven violators to become more creative. If we can use drones with cameras to monitor forests, the coasts and the seas, so too can the enemy," Cimatu said in his keynote address read by DENR Undersecretary for Attached Agencies and Chief of Staff Rodolfo Garcia.

"The DENR, by itself, cannot enforce all environmental laws across our archipelago. The challenge requires a whole-of-government response, as well as the cooperation of stakeholders outside the government, from host communities and the private sector to friends abroad," Cimatu added.

DENR Undersecretary for Enforcement Benito Antonio De Leon said the result of the summit is "the general framework for the effective and efficient enforcement of environmental laws for the next five years."

"The Summit gave an overview of major developments in each of the concerned sectors. Milestones on the enforcement of blue, green, and brown laws in the last 15 years were also presented," De Leon said.

According to De Leon, the NELE Summit participants were also *"given brief information on transnational organized crime, the roles of the Bangsamoro Government in environmental protection and enforcement, and the creation of the EPEB."*

"These inputs were used in the identification of gaps and development of an action plan that allowed us to finally craft the 4th NELE Action Plan for the next five years," he added.

The NELE Summit serves as a venue for updating about the latest developments on environmental law enforcement, such as new laws and policies, implementing guidelines, programs, and tools. It also highlights the technology conceptualized, developed, and implemented by member agencies, and reporting by the member agencies of accomplishments and other activities implemented.

The summits have also been the venue for ensuring continuous coordination and cooperation among the environmental law enforcement agencies and giving recognition to partner agencies and institutions, as well as individuals.

Source: https://www.denr.gov.ph/index.php/news-events/press-releases

MARINA LAUNCHES ITS TRAINING INSTITUTE IN BACOLOD CITY

by MARINA Press

The Maritime Industry Authority (MARINA), through a virtual soft launching, has announced on Thursday the opening of the MARINA Training Institute (MarTI) located in the four-story MARINA Regional Office - Western Visayas building situated inside the Panaad Park in Barangay Mansiligan, Bacolod City.

DOTrMARINAPH **marina.gov.ph**

The Maritime Industry Authority (MARINA), through a virtual soft launching, has announced on Thursday the opening of the MARINA Training Institute (MarTI) located in the four-story MARINA Regional Office – Western Visayas building situated inside the Panaad Park in Barangay Mansilingan, Bacolod City.

The MarTI, as an academic arm of the MARINA, is envisioned to be the country's Maritime Innovation and Knowledge Center under the Program 8 of the 10-Year Maritime Industry Development Plan – providing, not only national, but global maritime leadership training.

The operationalization of MarTI is aimed to improve the capacity of MARINA and other partners to innovate and operate modern technologies, to spearhead programs to help the country tackle the changing trends in the maritime industry and to serve as a systematic educational and training system and facilities for all maritime professionals. Hence, the conduct of research shall form part of the operation of the MarTI to ensure that its plans and programs are responsive to the needs of industry.

The soft launching program was attended by members of the Maritime Industry Board and Management, and representatives from various sectors of the industry.

In the keynote message delivered by MARINA Administrator Vice Admiral Robert A Empedrad, he related how fast knowledge expands and how swift modernization happens specially in the development and advancement in communications technology as applied to navigation.

"Maritime sector is a very progressive and fast-paced industry; and if MARINA and its stakeholders will not act accordingly, the Philippine Maritime Industry will be left behind. That's is the reason for the immediate operationalization of the MarTI," Administrator Empedrad pointed out.

Deputy Administrator for Operations (DAO) Engr. Nannette Z. Villamor-Dinopol, meanwhile, expressed compliments not only for the officials and staff of the agency but also for all stakeholders and partners who participated during the formulation of the MIDP.

"If the MarTI is to take firm roots in the Philippines and grow in continuity, what is needed most is the abiding interest of everyone and the partnership of maritime stakeholders. Through the MarTI, the MARINA will be committed to an ever-prospering bond of knowledge and innovation collaboration between the government and its partners in the years to come," Engr. Dinopol said.

For its maiden project, the MarTI previously hosted a 3-day webinar on the International Convention for the Control and Management of Ships' Ballast Water and Sediments, which is based on the MEPSEAS Training Course on the Legal Implementation of the Ballast Water Management Convention. It is designed to provide a common set of knowledge and skills to all participants to enable them to take appropriate action in their various capacities towards the implementation of the Ballast Water Management (BWM) Convention.

The MarTI, which will be headed by designated Officer-in-Charge Ms. Presca Lee B. Lugo, one of the Maritime Education and Training Standards Supervisors of the MARINA STCW Office, will operate virtually in observance of safety and health protocols being implemented in line with the measures to control the spread of COVID-19. Ms. Lugo is also the Chairperson of Expert Group 2 of the Asia Pacific Economic Cooperation (APEC) Seafarers Excellence Network or the APEC SEN Expert Group 2, the group designated for Seafarers' Better Welfare.

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Source: *https://marina.gov.ph/2021/02/12/marina-launches-its-training-institute-in-bacolod-city/*

BFAR 7 ISSUES STERN WARNING TO ILLEGAL COLLECTORS OF BANNED CLAMS, SHELLS AND PROTECTED SPECIES

by BFAR News

Violators beware! Collectors of banned fishery products worth nearly Php 13 million were recently apprehended by local authorities during an operation conducted in Barangay Punta Engaño, Lapu-Lapu City, Cebu.

Dr. Allan Poquita, regional director of the Bureau of Fisheries and Aquatic Resources in Central Visayas (BFAR Region 7), advises people to refrain from catching or gathering the protected species since they play a significant role to marine life.

He urged the public to help the bureau in curbing the illegal trade by reporting to authorities people who collect species protected under the fishery laws such as giant clams, helmet shells, and triton shells, among others.

BFAR Region 7, through its Fisheries Resource Protection Group (FRPG), was quick to respond to the Criminal Investigation and Detection Group's request for assistance after the former was alerted about the matter.

The officers, together with the barangay officials as witnesses, served the two search warrants on 30-June-2021 to two individuals from Sitio Lupa, Barangay Punta Engaño that were later on arrested after they were found committing several offenses.

The two were charged for violations of Section 96 (ban on coral exploitation and exportation); and Section 102 (fishing or taking of rare, threatened or endangered species) that are both stipulated under Republic Act (RA) 10654 or "An Act to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing."

They were also found violating Section 27 of RA 9147 or "The Wildlife Resources Conservation and Protection Act;" and Section 2 of Fisheries Administrative Order 158 or the "Prohibition on the Gathering, Taking, Collecting, Selling, Transporting, or Possessing for Sale of Mollusks Belonging to the Genus Triton or Charonia and Cassis."

Moreover, the joint operation resulted to the confiscation of several banned fishery products found at the residence of the two arrested individuals:

- 3,213 pieces of helmet shell (Budyong);
- 384 pieces of giant clams (Taklobo);
- 107 pieces of small sized giant clams;
- three boxes containing 81 pieces of Triton shells;
- 52 kilograms of hoof shell (Kukong Kabayo);
- one box containing 42 pieces of shark jaws;
- one box containing three pieces of dried sea turtles;
- two sacks containing 33 pieces of organ pipe red corals.

Based from the inventory, the estimated appraised market value of the confiscated fishery products is pegged at Php 12.96 million.

CIDG took custody of the two arrested persons and the seized items while inquest proceedings will ensue.

Source: Report from Alberto Simbajon, Jr., BFAR 7 - Fisheries Resource Protection Group.

TECHNIPFMC ENTERS PARTNERSHIP WITH MAGNORA TO DEVELOP FLOATING OFFSHORE WIND PROJECTS

by TechnipFMC

LONDON & PARIS & HOUSTON--(BUSINESS WIRE)-- TechnipFMC (NYSE:FTI) (PARIS:FTI) today announced it has entered into an agreement with Magnora ASA (Magnora) to jointly pursue floating offshore wind project development opportunities under the name Magnora Offshore Wind.

Magnora holds a strategic position within the renewable energy sector as an owner in offshore wind, onshore wind, and solar development projects and a key enabler in solar energy technologies.

When combined with TechnipFMC's unique technologies, experience delivering integrated EPCI (iEPCI™) projects and its novel Deep Purple™ initiative to integrate wind and wave energy with offshore green hydrogen storage, this partnership will enable Magnora Offshore Wind to realize significant opportunities in the growing offshore floating wind market.

Magnora Offshore Wind has already commenced operations and started work on an application for the first round of seabed leasing through the Scottish government's ScotWind Leasing program. In addition, Magnora Offshore Wind will participate in the first offshore wind application round in Norway, which opens in 2021, and will also consider entering new markets in the coming months.

Jonathan Landes, President Subsea, TechnipFMC, says: *"Magnora and TechnipFMC bring together decades of combined knowledge regarding the development of profitable offshore energy projects. This partnership reflects TechnipFMC's ambition to capture a significant position in the renewable offshore energy market. We are delighted to support Magnora Offshore Wind by providing our expertise and know-how in bringing innovative offshore energy solutions to the market."*

Torstein Sanness, Executive Chairman, Magnora, says: *"In Magnora, you find some of the world's leading experts within wind development. Coupled with TechnipFMC's project management competence and extensive service and technology portfolio, we believe we can provide a market-leading floating offshore wind offering. TechnipFMC's 'Deep Purple™' initiative, which utilizes offshore wind to produce hydrogen for offshore assets, is another exciting avenue we will jointly explore."*

Forward-Looking Statement. This release contains "forward-looking statements" as defined in Section 27A of the United States Securities Act of 1933, as amended, and Section 21E of the United States Securities Exchange Act of 1934, as amended. The words "believe," "estimated" and other similar expressions are intended to identify forward-looking statements, which are generally not historical in nature. Such forward-looking statements involve significant risks, uncertainties and assumptions that could cause actual results to differ materially from our historical experience and our present expectations or projections.

For information regarding known material factors that could cause actual results to differ from projected results, please see our risk factors set forth in our filings with the United States Securities and Exchange Commission, which include our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K. We caution you not to place undue reliance on any forward-looking statements, which speak only as of the date hereof. We undertake no obligation to publicly update or revise any of our forward-looking statements after the date they are made, whether as a result of new information, future events or otherwise, except to the extent required by law.

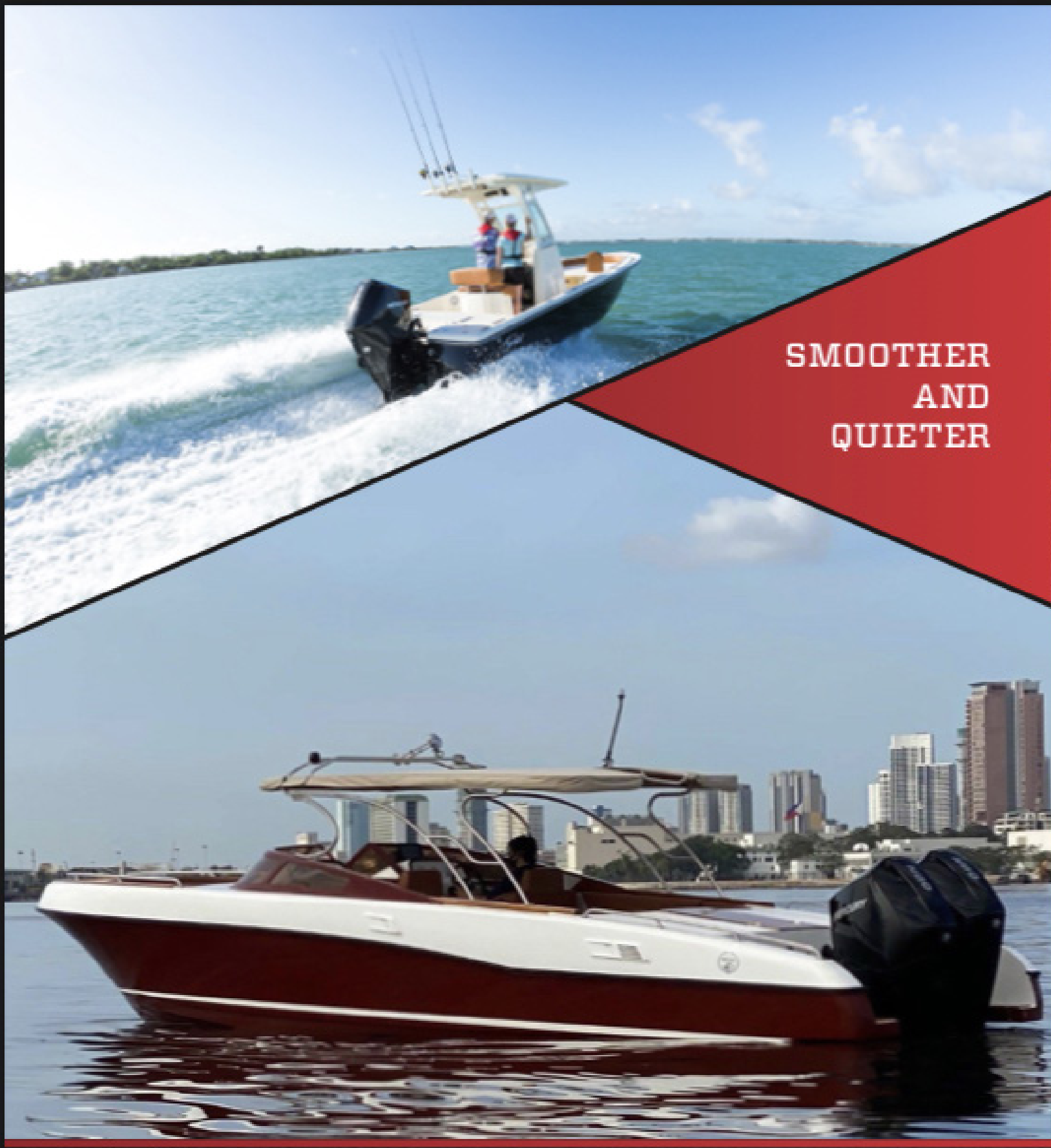
TechnipFMC is a leading technology provider to the traditional and new energy industries, delivering fully integrated projects, products, and services.

With our proprietary technologies and comprehensive solutions, we are transforming our clients' project economics, helping them unlock new possibilities to develop energy resources while reducing carbon intensity and supporting their energy transition ambitions.

Organized in two business segments — Subsea and Surface Technologies — we will continue to advance the industry with our pioneering integrated ecosystems (such as iEPCI™, iFEED™ and iComplete™), technology leadership and digital innovation.

Each of our approximately 20,000 employees is driven by a commitment to our clients' success, and a culture of strong execution, purposeful innovation, and challenging industry conventions.

Source: *https://www.technipfmc.com/media/press-releases/2021/03/technipfmc-enters-partnership-with-magnora-to-develop-floating-offshore-wind-projects/*



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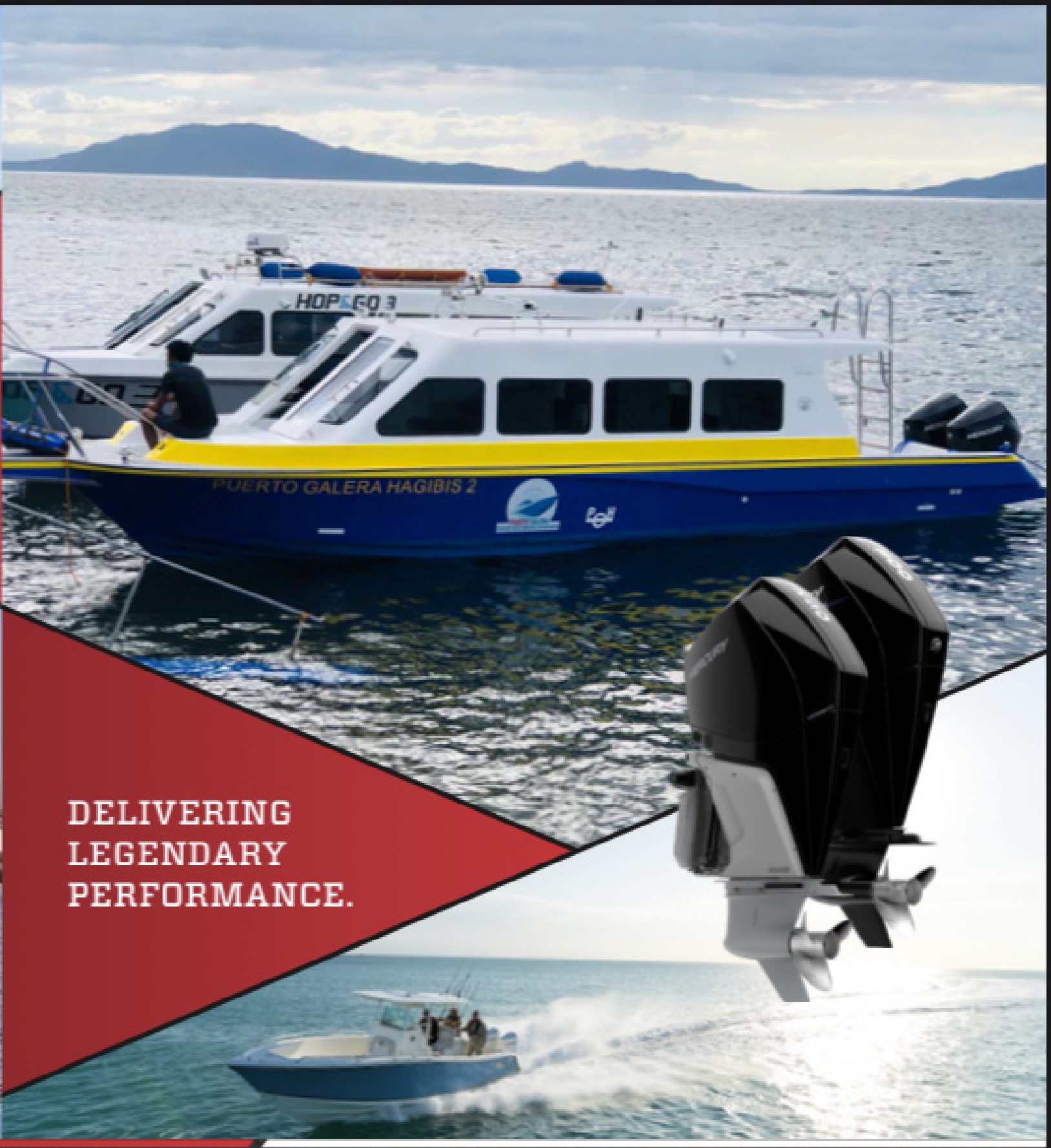

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BOOK REVIEW: THE FALL AND RISE OF THE FRENCH SEA POWER

by Vicky Viray Mendoza

Introduction. France had fallen under the incessant firepower of the German blitzkrieg in 1940. The reasons for the sudden defeat of France is due to leadership failure at both military and political levels. The French army was poorly led and equipped with inferior arms and equipment. And to prevent the Axis powers from taking control of the French Marine Nationale's ships, British Prime Minister Winston Churchill ordered the seizure, neutralization, and destruction of all French Navy assets within reach. The fate of Marine Nationale was sealed from that day forward, and years post World War II. The Royal Navy turned on France without warning, at its moment of great distress, inflicting a devastating assault that severely damaged most of her ships at port, including battleships Bretagne and Dunkerque, wounding and killing about 2,000 French sailors and officers.

French President and Acting Brigadier General Charles De Gaulle instructed Vice Admiral Émile Muselier to continue building up the movement's devastated navy. The challenge of that task would be considerable in manpower and funding to build a new navy. Most French sailors outside of France's metropolitan and colonial ports were corralled in British detention camps while their vessels were impounded by the Royal Navy. The British offered to facilitate the return to France of those who wished to follow the famed Maréchal Philippe Pétain into proclaimed neutrality rather than rallying the unknown de Gaulle. Those who wished to fight the Axis, senior would be provided the option of joining the king's armed forces than the Forces Françaises Libres (Free French Forces) (FFL).

The awkward stance of the British in the critical months that followed Operation Catapult drove both de Gaulle and Muselier to maintain a guarded attitude in their dealings with British authorities. They had to balance implied reliance on a hesitant ally, yet proclaim autonomy for the FFL. This modus describes Free French navy relations with the Allied powers.

The Free French Forces (FFL) are remembered through the feats of army soldiers who resisted German General Erwin Rommel's tanks at Bir Hakeim in 1942 and followed Free French Général Philippe Leclerc as he raced to Paris in 1944. Sailors wearing Croix de Lorraine, the symbol in July 1940 of the Free French movement, made earlier contributions. Forces Navales Françaises Libres (FNFL), the French Navy, provided de Gaulle the ways and means to rally political support in the colonial empire, making early military contributions to the Allied cause.

In the summer of 1940, Brig General de Gaulle and Vice Admiral Muselier focused their first efforts on securing support from Great Britain in the wake of Operation Catapult. The debilitated French Navy slowly grew in size and effectiveness, achieving notable success in the two years that led to the Anglo-American landings in French North Africa and the German invasion of France's Free Zone, after which the U.S. helped much in rebuilding the shattered French Navy.

The assistance of Great Britain to Muselier's navy at the dawn of the Free French movement was critical to the rise of all of Free French Forces. It shaped relations between France and its allies in the remainder during and post war. The Royal Navy continued providing resources to foster the FNFL into a small, effective French navy, but the sidelined Vichy navy atrophied.

[CH1] Building a Free French Fleet. British Prime Minister Churchill needed a French ally to keep the country's fleet and its colonies out of Axis hands. The unprecedented situation resulting from the presence of a militant de Gaulle in Great Britain versus a legitimate Vichy regime led by Maréchal Philippe Pétain left British leaders facing a serious French political problem that seemed impossible to resolve. On the fateful day of 10-July-1940, French senators and deputies met in the small town of Vichy, in the free zone left unoccupied by the Axis.

The politicians ratified the armistice of 22-June-1940, and agreed to make the unelected Maréchal Pétain the Head of State, combining executive and legislative powers. De Gaulle opposed the armistice between Maréchal Pétain and the Nazis, which ultimately led to Nazi occupation of France. Brig Général de Gaulle sought to achieve a "transfer of sovereignty" from the vanquished Vichy regime, and this ambition needed legitimacy, internally in France and externally with Allied leaders.

In July 1940, De Gaulle appointed Vice Admiral Muselier as commander of the Free French Naval Forces (FNFL) and the Free French Air Force. To restore and reestablish France as a great power after the hostilities, de Gaulle ordered the French citizenry to continue fighting and that French military forces make a significant contribution to the liberation of the homeland. It was clear to de Gaulle his campaign could not be left to the Allies, despite the Allies portraying benevolence. France wished to stand with the victors at war's end. De Gaulle needed to make a major contribution to the defeat of the Axis.

De Gaulle was largely to blame for the toxicity between him and Muselier for his haughtiness, self-aggrandizement, and cruel attacks on Maréchal Pétain —who was much loved by the military and majority of the French people, about 90% overall.

At the time of the first armistice, as the French were preparing to repulse a German invasion, the British were undermining Free French recruitment through offers to join Great Britain's armed forces with higher pay and promises of British citizenship. However, relocating FFL recruits to French camps where the living conditions were worse than the British camps, clearly did not help France's cause.

The Royal Navy wanted to set sail under the White Ensign of many French vessels detained in British ports, manned by either British crew or other European navies that sought refuge in Great Britain. As de Gaulle's supporter, Churchill was very generous to de Gaulle yet simultaneously so ruthless in requiring the use of Marine Nationale ships for British purposes.

By the end of 1940, the Royal Navy gave up on the idea of arming French ships and realized that Forces Navales Françaises

Libres (FNFL) sailors were the best source of manpower to put French ships back to service. This turnaround was a victory for Muselier no matter how small, as de Gaulle set out to formalize the Anglo–Free French political relationship.

In April 1941, Muselier agreed that FNFL crew could take over new warships under construction in British shipyards instead of recommissioning existing French vessels. This started with newly acquired 6 Fairmile wooden motor launches and 6 Flower-class corvettes. The new launches and corvettes of the Royal Navy were facilitated by the U.S. Lend-Lease Act on 11-March-1941. U.S. President Roosevelt did not extend the Lend-Lease to the Free French Forces because he considered Vichy the legitimate regime. However, the Royal Navy gained access to new vessels in North America. The vessels required manning by experienced British crew, leaving more British ships for manning by Allied crew. Unfortunately, efforts to bring older Marine Nationale ships into service were abandoned.

Just days before the Japanese Axis bombed Pearl Harbor on 7-December-1941, Roosevelt had reaffirmed its commitment to the principle of "mutual non-intervention" with Vichy forces based in the Western Hemisphere. The U.S. recognized the Pétain regime over that of de Gaulle.

Free French Naval Forces killed and missing rose to 567 by the summer of 1943, when the FNFL was formally merged with the Vichy navy. They showed the commitment of Muselier's decapitated navy to the Allied cause in 1940 and 1941, a time when Great Britain and its colonies stood almost alone against the Axis. Despite FNFL's limited size, it met the 1940 goals of de Gaulle. FNFL consisted of 5,700 sailors, navy riflemen, and aviators at end-1942; 40 ships, small crafts and submarines totaling 26,212 tons or 3.5% of September 1939's tonnage.

Free French ships and submarines made a direct contribution to the Allied war effort, in both blood and equipment with increasing effectiveness. Muselier's ships were the first to actively join the fight against the Axis in the immediate aftermath of the 7-August-1940 accord, right when de Gaulle was anxious to build legitimacy with the Allied party.

The provision of British-built units to the Free French represented a valuable return on investment for Great Britain, which sought to deploy every sea-ready ship. Muselier appreciated the serviceability and range of the new ships which were better than old French ships with doubtful sea-readiness.

The good relations among naval leaders could not assuage the personal tensions persisting between General de Gaulle and Vice Admiral Muselier, leading to Muselier's exit in the spring of 1942. Discord between the two was more about politics than military, which eventually reached a breaking point between the older leftist radical Muselier, and the younger over-bearing conservative de Gaulle. This was bound to happen. Muselier's aggravation took root on the first day of work under de Gaulle.

They never agreed on the fundamental nature of the Free French movement. The sailor had a political naiveté compared with the shrewd instincts of the soldier. Muselier envisioned a an apolitical Free French movement, a military legion fighting alongside Allies until a legitimate government is restored to a liberated France. De Gaulle saw FFL's political nature, instituting units of an independent state within a larger military alliance.

Muselier expressed utmost annoyance at de Gaulle's non-support of his plans to obtain a navy-to-navy agreement with the First Sea Lord on 5-July-1940, denying him the opportunity to shape the higher-level 7-August-1940 accord. Muselier presented earlier the potential to make FNFL a naval foreign legion rather than a fleet serving Free French interests, without having consulted de Gaulle, and his counterpart Admiral Dudley Pound not consulting with Churchill either. It might have been for the best that none of the proposed plans were confirmed.

Negotiations became the purview of a very narrow circle of de Gaulle advisers, whom Muselier was not part of despite his seniority in rank. It was revealed, the Admiral was not formally appointed as deputy to the acting Brigadier General.

But Muselier had played a critical role in the early years of the budding Free French movement, implementing his own vision by putting to sea the most effective means in the most efficient way. The sheer will he exemplified in the dark days that followed the Armistice and Operation Catapult, assembling a small but capable fleet proved essential to de Gaulle's rise during the war years and the eventual rebuilding of France's sea power post-war. Muselier's chosen replacement –Rear Admiral Philippe Auboyneau– had the same attributes, in pursuit of similar policies as Muselier's.

Philippe Auboyneau was one of the most senior naval officers to join FNFL. He commanded Le Triomphant, the first French destroyer. Promoted to captain in 1941, he assumed responsibility for all FNFL forces sailing in the Pacific until his urgent recall to Great Britain due to Muselier's resignation, which entailed a promotion to rear admiral. Politically savvy and agreeable to compromise with Allies, Rear Admiral Auboyneau proved more effective with de Gaulle and the British, yet retained Muselier's plans for French sea power.

[CH2] Army-Centric France. In a letter to General Henri Giraud in November 1942, an attempt to rally him to the Allied side, U.S. Diplomat Robert Murphy confirmed the U.S. would extend the Lend-Lease Act for requisitions from the U.S. to enable the French Army to participate in the Allied cause. Vichy Brigadier General Charles Mast included logistics, artillery, fighter-bombers and transport to make the battle corps more flexible and autonomous, although focused purely on land operations.

Such "army centricity" in the days leading up to the Allied landings was to be expected given the composition of the dissident group behind the Mast Plan. It only had one naval officer at Cherchell. The Vichy navy was viewed as a potent force, but some expected the fleet's destruction within a month.

German troops crossed into France's free zone in response to North African landings and the Axis pounced on Vichy's last unoccupied base, intent on seizing French ships and submarines intact. Taken by surprise, soldiers were incapable of repulsing the Wehrmacht assault. The French naval crew failed to raise steam in time to escape by sea. Ship commanders ordered the scuttling of all vessels at berth. Nearly 48,800 tons of capital ships, destroyers, and submarines went down, 90 vessels or 33% of naval strength. French sea power sunk to its lowest point.

[CH3] Rearming for war amidst internal French rivalry. A bitter rivalry continued to permeate the ranks of the divided Marine Nationale in 1943, a reflection of the larger national fracture. FNFL officers set up recruiting stations outside shipyard gates where ships of the Forces Maritimes d'Afrique (FMA) were being refitted. Over 100 crewmembers from Richelieu shifted to smaller destroyers and corvettes under croix de Lorraine. Still, work continued to bring warship Richelieu back into the fight.

A figure of compromise, Vice Admiral André Lemonnier

exercised influence on Marine Nationale's wartime rearmament and operations and its postwar struggles, remaining at the helm until August 1950. He entered École Navale in 1913, ranking first in class and graduating in time to see service during the Great War, in the Dardanelles campaign, and a tour with a naval gun battery in Macedonia. Lemonnier displayed excellent skills at sea and rare political instincts during the interwar period. He commanded submarines and surface vessels of all types, and was first in class at the École de Guerre (War College). As the youngest captain in WWII, he lead gunships into Belgium.

General de Gaulle endorsed the former Vichy Vice Admiral Lemonnier in his memoirs: "Absorbed by the technique which is its life and passion, which kept its recent ordeals from deterring it, [our Navy] reconstituted itself while taking an active share in operations. Vice Admiral Lemonnier, appointed in July 1943 as chief of the Navy's general staff, brought to this feat of reorganization remarkable ability and a tenacious will, disguised beneath a misleadingly modest manner."

A modest manner and tenacious will would prove key qualities for a leader seeking to unify two factions so far apart: the Free French sailors and the Forces Maritimes d'Afrique (FMA). With a conciliatiatory vein, Vice Admiral Lemonnier saw the two entities would continue to exist, albeit in an uncomfortable divide of geography and missions.

The Allied prevalence in capital ships grew exponentially over the Axis navies. However, the FNFL noticed the Allies "were mainly interested in building up those parts of the French fleet that complemented those of the Allies."

While arming and modernizing whatever can float and fight after the fusion of the Free French Navy with the Vichy Navy in August 1943, Lemonnier submitted in September 1943 a vision for a postwar navy. He proposed a fleet that could defend the métropole and the empire independent of Allies, capable of operating worldwide, pairing an aircraft carrier and a battleship with escort cruisers, destroyers, long-range attack submarines, and replenishment ships, modelling the U.S. in the Pacific.

Vice Admiral Lemonnier submitted further requisitions in February 1944 requesting for an aircraft carrier. These were promptly dismissed: "The Combined Chiefs of Staff (CCS) decided it would not be beneficial to the war effort to make further assignments of vessels to the French in the near future." Lemonnier lamented in a letter to Fénard in 1944: "We have ships but we do not have a fleet in the sense that we no longer possess a main battle force, the vital backbone of any fleet."

Vice Admiral Lemonnier's plans of acquiring the means to assemble an aircraft carrier–centric battle corps became the focus for the remainder of the war. This capacity allow the Marine Nationale to influence Allied strategy in the closing months of the war and in planning under uncertain peace post war. France could envision sitting with the victors at war's end but would be alone and on its own after the war.

The Alliance was unlikely to continue its support after the Axis surrender. Tensions grew among Washington, London, and Moscow about the next international order. France was shattered economically and divided politically. Reconciling the demands for civilian reconstruction and developing the armed forces as a continental powerhouse would be a struggle.

[CH4] End of an alliance, rebuilding alone. Three years to the day after her entrance in New York Harbor, battleship Richelieu made a triumphal arrival in Toulon on 11-February-1946. The moment was charged with conflicting emotions for the French sailors and citizenry. Vice Admiral Lemonnier, chief of the Naval General Staff, presented Richelieu with a prized commendation, the Croix de guerre for performing exemplary service at war.

Richelieu then traveled to the Indian Ocean for service with the Royal Navy's Eastern Fleet tasked with blocking Imperial Japanese Navy ships based in Singapore and striking enemy shore positions in Burma and the Dutch East Indies. And, following the surrender of Japan in September 1945, Richelieu escorted troopships dispatched to Indochina to regain control over the colony, later providing fire support to French forces ashore during the first skirmishes with Vietnamese guerillas.

The crew of Richelieu were proud of their wartime accomplishments. But the hostilities left the ship's company bitterly divided between sailors who had remained loyal to General Pétain to the very end, those who had joined General de Gaulle into dissidence, and those who had followed Vichy Admiral Darlan when he switched allegiance to the Allies. Such tensions fragmented the French navy, army, and air forces.

France's largest warship Richelieu distinguished herself in all assigned tasks, but these were of secondary interest during the final two years of the war. By the time she sailed home, the threat to the British Isles had mostly passed with the largest German ships isolated in Norway. Assignment to the Eastern Fleet confined the battleship to the periphery of Japan's conquests. Richelieu could not dream of liberating France, while it was confined to subordinate roles under the British command. This was a far cry from Lemonnier's vision of a battleship, aircraft carrier and escort formation.

The Alliance itself was coming to an end. The U.S. and Great Britain hoped to terminate the huge wartime commitments to rebuild and support the armed forces of their allies. Rebuilding the Richelieu would now suffer uncertainty.

Nearly half of the 1939 merchant fleet vanished, with 1,328,858 tons lost to enemy action and accidents, and over 1,500 mariners dead in a watery grave on the high seas. Heavy losses of men, ships, and submarines in the aftermath of the armistice sustained the legitimacy of a politically divided France.

Marine Nationale could have boasted of a meaningful contribution to the Allied cause in the last two years of the war and to France's restoration as a self-governed and united country. But French admirals did not receive the laurels of victory bequeathed onto army generals because their vessels were relegated to secondary roles serving the Allied strategy rather than the French national interest. And yet this was made possible with U.S. support. in refurbishing and modernizing the French ships, training, and transferring new assets to the fleet. But at war's end so did the essential support to the French navy.

The end of the war left France's navy with a large fleet of questionable value. Many ships were obsolete or too expensive to modernize. The mix of French, British, American designs, plus German and Italian reparations would challenge French builders. The naval force grew haphazardly under Allied priorities, none of French desires, and became a mixed bag of "naval dust" in Lemmonier's view. He faced a huge challenge in forging a naval ship capable of defending the national interest.

Planning to rebuild alone. Assembling 400 ships and submarines in September 1945, the French fleet had a respectable figure given the grave losses suffered in 1939. Marine Nationale ranked 4th in size behind U.S., Great Britain, and Soviet Union

navies, the same rank held at the outset of World War II (behind U.S., UK, and Japan) but with more hulls. Total tonnage was less than 50% of the fleet 6 years earlier (350K vs 745K tons), far behind U.S. in mounting a large, autonomous naval operation at great distance from home ports.

The only ships capable of operating in blue-water missions in the near future was Richelieu, 4 cruisers and 4 heavy destroyers/light cruisers refitted in U.S., and a dozen modern escort vessels leased from U.S. and Great Britain. Submarines transferred to the French Navy by Great Britain and those refitted in Philadelphia Navy Yard were nearly obsolete.

In the last two years of the war, the accomplishments of the French Navy were largely unseen. The army seemed to bear a larger responsibility under the armistice, and had lost the respect built over centuries of European battlefield warfare. Thus, in 1940-1942, Generals de Gaulle and Pétain used their navy fleets to sustain political legitimacy of its forces. Post Operation Torch, French soldiers from across the empire fought and died in Tunisia, Italy, France, Germany, and Indochina and were often in the news. But naval war at sea received not much coverage.

By 1945, de Gaulle was known colloquially as Le Général and army leaders became household names to the French, unlike the senior admirals of the navy who were lesser known. Among the French admirals, the most well-known during World War II was the collaborationist Jean Francois Darlan, and the rebellious Émile Muselier, while the highly intellectual André Lemonnier remained a bland figure head even while in command.

Despite the purification begun by the Gaullists after the 1943 fusion, the navy remained populated by former Vichysts since not enough experienced crew could be found in the Free French Navy. Former Vichy naval officers were reaching flag rank. These officers had to communicate the high importance of French sea power and to place vast investments to rebuild a modern fleet.

These uncertain situations left Vice Admiral Lemonnier in a difficult position to uphold the interest of Marine Nationale and plan a credible fleet for the future. The navy had done well in combat given the challenges they faced, but relations of a large majority of naval officers to Vichy like Admiral Jean Francois Darlan until he was assassinated in December 1942. Vichy Admiral Darlan earlier had Muselier assassinated but failed.

The end of wartime alliance and damages inflicted on France's shore installations left it incapable to acquire ships or submarines, and unable to construct its own. Geopolitical uncertainty on the future of war resulted in planners unable to spot an enemy and delineate the means to fight at sea in an atomic era. As De Gaulle focused to restore France's grandeur, Lemonnier had to scale down his blue-water fleet plans.

Budget constraints inhibited shaping the future naval fleet, leaving to the Ministry of Finance what kind of navy France could afford. Pétain and de Gaulle showed the political value of the fleet. Troubles in Indochina demonstrated the benefits of ships with aircraft operating from the sea in fighting insurgencies. Russia, ensured building up forces on land and sea for control and deterrence. A new association among the Western powers ensued, with potential for naval cooperation and fleet growth.

French admirals now viewed collaborations guardedly. Wartime experience —the FNFL veterans who dealt with the British and the FMA who dealt with the CCS— revealed support from Allies were based on their own interests, largely at the French Navy's expense. Lemonnier continued leveraging U.S. support which was helpful to develop Aéronavale, though political leaders almost surrendered France's naval autonomy in adopting the "Defense of the Rhine" policy.

These CCS defined the limited extent of support it could provide to General Giraud and the navy in mid-1943. Ships would not to be transferred to the French wholesale. Existing ships were to be refitted in Allied yards as space opened up. The U.S. and Great Britain were to supply ships and submarines, and provide repair and consumables to French bases in Africa. FMA Commanders were grateful, but they too noticed the provisions were narrowly focused on wartime requirements, exploiting French naval assets and crew to augment Allied fighting power at sea, with no intention of rebuilding the French Navy ships.

[CH5]The defense of the Rhine. The moment of greatest danger to Vice Admiral Lemonnier came in the fall of 1948. Minister of National Defense Paul Ramadier proclaimed the primacy of the "defense of the Rhine," sacrificing naval growth to build up the army and air force focused on France's greatest vulnerability as a continental power –its land border. This shift stood in stark contrast to the symbolism of French sea and air power launched just a few years earlier.

The Superior Council of the Navy decided that conversion to a carrier would take as much time and money as building an entirely new vessel, and would provide a limited carrying capability—40 aircrafts ready for operations with 14 more slung from the hangar deck head—which would be obsolete when the ship is launched. Minister Jacquinot endorsed in September 1945 Lemmonier's push to complete Jean Bart as a battleship.

Rear Admiral Pierre Barjot, a veteran of Aéronavale, stated: "It was surprising in 1945 to see the Naval General Staff supporting the cause of the battleship against that of the aircraft carrier. This attitude, which dominated the discussions in September 1945, clearly reveals that despite the experience of the war, the mythology surrounding the big guns continues to rule our naval thinking." The German threat had receded behind the belligerent Soviet Union. Western fears grew as a result of Moscow's imposing behavior on friendly regimes.

Minister of Defense Ramadier put the defense of the Rhine as the apex of France's interest. This required expansion of heavily mechanized land forces in Europe and development of an air force focused on close air defense for the army. The role of the navy would thus be reduced to maintaining light escort forces and shore infrastructures in Africa. To Lemonnier and fellow admirals, it was 1943 all over again, with the Allies assisting in rebuilding the French navy yet restraining it to subordinate secondary missions, but this time by the French.

[CH6]Returning to a strategy of alliance. World War II paradoxes reappeared when France resumed a strategy of alliance in 1948. France joined NATO and gained access to the wealth of resources the U.S. made available through the Mutual Defence Assistance Program (MDAP) at a time when the French government put rearmament on equal basis with civilian reconstruction. This presented Marine Nationale an chance for quicker regeneration. Admirals Lemonnier, Battet, and Lambert quickly leveraged any available U.S. and French resources.

However, the Soviet threat on the Alliance's eastern border drove U.S. to demand continental Allies to build a credible air-land force for deployment on the central front. U.S. Secretary of State Acheson stated that failure would lead to the rearmament

of West Germany, France's former foe. The January 1951 French rearmament bill and continued U.S. support through MDAP provided Marine Nationale and French naval industries increasing capacities, but a blue-water fleet was now uncertain.

[CH7] Building a blue-water fleet under clashing visions. Allied material and monetary assistance to generate the means to build ships, submarines, and shore infrastructure came at a frenzied pace. France had suffered defeat in Indochina, and the Algerian struggle was turning desperate, but the French Navy performed well in both conflicts and became a respected voice in allied naval and national defense circles.

Two documents shaped naval regeneration: (1) 1952 Statut Naval, which set the path for a credible blue-water surface fleet, and (2) 1955 Plan Bleu which sought to elaborate a longer-term vision of a mature navy upholding France's grandeur under the complexity of the Cold War, and being ready to fight in the nuclear era. As MDAP ended in 1956, blue-water plans paused..

The challenge of clashing naval visions. The U.S. Embassy in Paris relayed to French authorities an aide-mémoire providing consolidated feedback of agencies "with a view to increasing the effectiveness of the present Franco-American efforts to strengthen the combat effectiveness of the French military establishment of carrier planes." The section on naval matters gave low priority to construction in France, and purchasing patrol aircrafts from Great Britain, recommending production of minesweepers, landing crafts, and destroyers instead.

This view drew a piercing response from Chief Naval Architect Louis-Lazare Kahn. He said the French plan would satisfy national and alliance requirements. He also said the increasing production of minesweepers in France would impact the construction of new fleet destroyers, and completion of the cruiser De Grasse. He decried the proposal that an American minesweeper design be adopted by French shipyards for NATO standardization, because construction of a "superior" French model had already begun while the British were still designing.

In the 1950s, the Military Assistance Advisory Group advised France to put plans on hold for the construction of 6 new Narval-class submersibles, and build surface ships instead. The U.S. was doubtful of French ambitions in building a modern submarine fleet because NATO war plans for France did not call for a large submarine beyond coastal patrol; and French shipyards were too weak to construct submersibles to postwar level (extreme depths, faster speeds, autonomous, quieter.)

Vessels of the Aréthuse class based in Mers el-Kébir and Bizerte would guard against Soviet submarines seeking to threaten strategic lines of communications between North Africa and the métropole. The small size, short endurance, and narrow specialization of the Aréthuse class proved to be a liability. But the experimentation work required for the launch of Aréthuse class led to the design of the larger Daphné class.

Rear Admiral Henri Nomy only referred to nuclear power as a means of propulsion for ships and submarines in Plan Bleu, but a study in October 1955 pressed for development and deployment of French nuclear weapons at sea: "A navy that will renounce the atomic bomb would be out of the game, even for secondary missions in war and would have no value as an ally. It is the same as constabulary forces maintained by Portugal and Thailand. The navy's future is tightly bound with government policy regarding nuclear weapons."

[CH8]Going nuclear. As Le Redoutable set out for the Norwegian Sea where her missiles can reach the Soviet Union, Marine Nationale joined a navy club (U.S., Soviet Union, and U.K.) that maintains their nuclear assets in the depths of the sea.

The lead vessel, Le Redoutable, was joined by Le Terrible, Le Foudroyant, L'Indomptable, Le Tonnant, and L'Inflexible, deployed in different patrol areas for redundancy and credibility to France's nuclear deterrence. Commissioned in 1970, the Île Longue naval complex offered a home port for the SSBN class, which continues until today to house 4 Le Triomphant SSBNs that succeeded Redoutables in the late 1990s.

The Redoutable proved an amazing achievement done in great haste based on de Gaulle's decision to complement France's nuclear deterrent with ballistic missile–carrying submarines built by France alone. Standing up to FOST (Force Océanique Stratégique) came at a huge cost. Growing tensions between the French and Anglo-Americans in the 1960s meant France would bear the cost of the submarines and missiles.

FOST meant huge investments in the navy, and dedicating much resources to ballistic submarines alone could gravely affect execution of the Plan bleu de 1955. Rear Admiral Nomy's vision of an expeditionary fleet of an aircraft carrier–centric group, with smaller surface combatants and attack submarines. Plan bleu could not reconcile with de Gaulle's drive for SSBNs.

The atomic era impacted allocation of funds to the French Navy. Bases needed to go underground to survive a nuclear exchange. While new technologies extended the autonomy of naval forces, the first decade of the Cold War showed blue-water fleets still required a worldwide network of infrastructure to be able to conduct independent operations.

Dawn of a new republic, end of allied assistance. The world's first nuclear-powered submarine was the first vessel ever to reach the North Pole. The USS Nautilus demonstrated the capability of a nuclear submarine to roam undetected for extended periods, and able to bring nuclear armed might right up to an opponent's shores. De Gaulle noted that any nation deploying such capability had powerful leverage.

Bases and shore infrastructure. All Western fleets went through retrenchment after 1945, then rapid expansion as the Cold War set in. The experience of Marine Nationale was unique given the wreckage that blocked ports and naval bases. Wartime had ruined its network of bases and infrastructure. German and Allied bombing brought devastation. Key bases of Toulon, Brest, and Cherbourg were destroyed.

The emergence of Soviet threat in Europe resulted in increased defense budgets, yet funds allocated to naval bases fell short for Rue Royal planners who sought 6 billion FF in 1949 but only received 3.16 billion. The bizarre navy budget continued into the early 1950s. In January 1959, de Gaulle assumed the presidency of the Fifth Republic for a 7-year mandate. He assigned the French Navy to deploy nuclear weapons at sea in support of the national strategy of "deterrence of the strong by the weak." As quickly as Rear Admiral Nomy had to abandon maintaining network bases in the 1950s, his successor, Vice Admiral Georges Cabanier, eyed building French sea power.

Nuclear deterrence in submarines. After de Gaulle took power in June 1958, he recalled Vice Admiral Cabanier to Paris and made him commander of the navy when Rear Admiral Henri Nomy retired in 1960. It was Nomy's initiative that the 2 aircraft carriers, Clemenceau and Foch, and helicopter-carrier Jeanne d'Arc were built. Nomy knew battleships had come to an end.

Vice Admiral Cabanier's background fit squarely within de Gaulle's agenda. He was a Gaullist and proven sailor with a solid track record, had experience working with the Americans, and had a submariner background that would greatly assist in discussions with the U.S. in the future.

French admirals were uncertain about the future of nuclear propulsion. In the early 1950s, a concerted effort was underway to grow the submarine arm, and debate arose whether future plans should focus on nuclear or conventional propulsion. Nomy and Lemonnier promoted the former while Pierre Barjot and Paul Ortoli promoted the latter. The decision was to develop one nuclear-powered submarine for the navy, while maintaining the construction of diesel-electric platforms.

In what became known as France's nuclear strategy, "the deterrence of the strong by the weak," the weaker power did not need deterrence comparable to that of the stronger enemy. It only needed the capacity to inflict greater damage than the opponent was willing to endure in comparison to the gains the latter sought to obtain by force. France could not compete with the superpowers but it could assemble an instrument of sufficient size to act as asymmetric or proportional deterrence.

50 Dassault Mirage IV two-seater jet bombers were delivered in 1963-1967, and 12 in 1964. Since the French industry had not had maturity needed to produce a jet engine of high performance required of supersonic planes, the decision to seek engines from American Pratt & Whitney to be built under license in France was made. U.S. allowed jet engine technology transfer, knowing Mirage IV could be an atomic-bomb delivery vehicle.

The decision to detonate a first atomic bomb and acquire Mirage IV strategic bombers would operationalize France's Strike Force. De Gaulle laid out his vision in November 1959: "The defense of France must be French. It ensues that we must, obviously, develop in the coming years a force which can act on our behalf, a force de frappe capable of deployment at anytime and anywhere. At the heart of this force will be atomic armament. And, since potential opponents will eventually be able to destroy France from anywhere in the world, our force must be capable of reaching anywhere in the world."

By 1961, the French Navy did not yet have a serviceable submarine nuclear-propulsion plant, an advanced navigation system for extended underwater cruising and accurate ballistic targeting, a working submarine-launched missile, nor a nuclear warhead that could fit such a missile. France was unlikely to assemble and operationalize all elements in one platform for another decade, unless the U.S. would provide a shortcut if de Gaulle deemed it would restore France to its former grandeur.

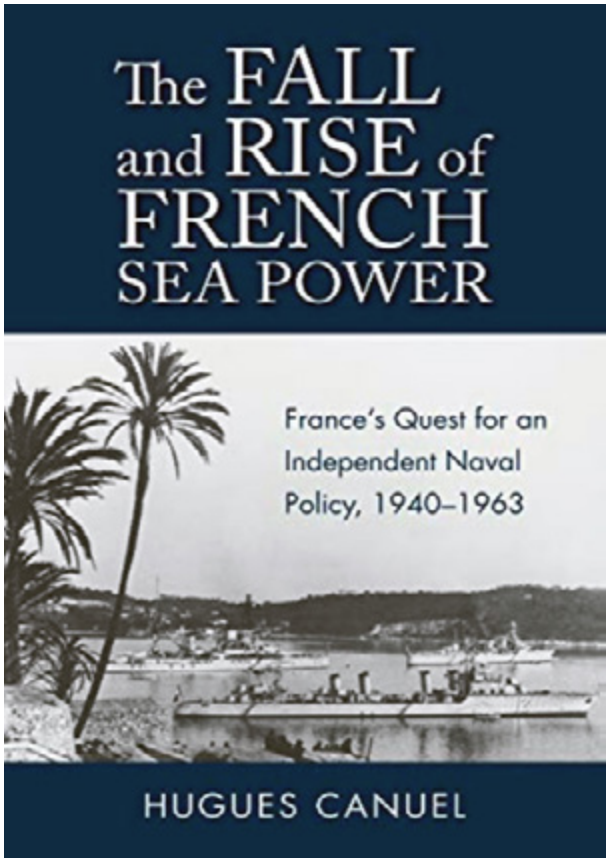
But Marine Nationale was going nuclear, whatever the cost. The sea-going vessels would soon assume a central role in de Gaulle's vision of a credible and independent strategic deterrent for France. Having launched this massive effort, de Gaulle proclaimed in 1965 the navy's rise to prominence in the nation's defense: "The navy now finds itself, no doubt for the first time in history, at the apex of France's military power. And this will become a little truer every day in the future."

Conclusion. None of the Admirals —Muselier, Auboyneau, Lemonnier, ,Nomy, Cabanier— ever accomplished the grandiose visions they set out to achieve. Nevertheless, history shows their incredible agility to work with the compromises forced down upon them by the Allied military leaders and the powerful politicians during the 1940s-1960s. These compromises were called the "least bad" arrangements that the French Navy had to accept. But later, these "least bad" arrangements themselves became the essential force that allowed the proceeding admirals to rebuild its French Naval Fleet and the French Naval Aviation with an uncommon unity of purpose —to attain an independent naval policy with an alliance strategy— in remembrance of the horrendous suffering brought on by World War II and the new beginnings of distrust as the Cold War began in the next decade.

During the Cold War, the French Navy was organized in to two squadrons in Brest and Toulon for the Atlantic and the Mediterranean. Post-Cold War, the two squadrons were divided into the Naval Action Force and the Anti-submarine Group.

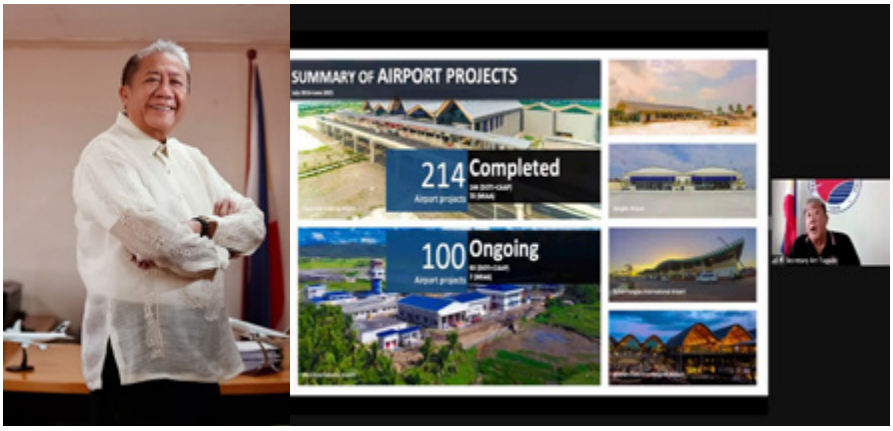
Recommendation. "The Fall and Rise of French Sea Power" shows the twists and turns year after year that the French naval officers had to maneuver, and comply with the Allies during World War II and at the onset of the Cold War. For countries that have a fledgling navy, this is an excellent read, to witness how a small devastated navy can still be useful to its allies, and turn into a formidable one with the will to rebuild itself back to its glory days, armed with the humility to seek and maintain long-term alliances. Like many small nations that are Army-centric within the department of defense, having only one Naval officer, or none at all, to provide a naval perspective, this book will open their eyes to the utmost importance of having a strong Navy fleet with combined Air power to address external threats. It is a basic naval strategy worth applying for control and deterrence.

Captain Hugues G Canuel RCN, Ph.D. The Fall and Rise of French Sea Power: France's Quest for an Independent Naval Policy 1940-1963. (April 2021) U.S. Naval Institute Press, Annapolis, Maryland.



UPDATE ON DEPARTMENT OF TRANSPORTATION PROJECTS

by DOTR News

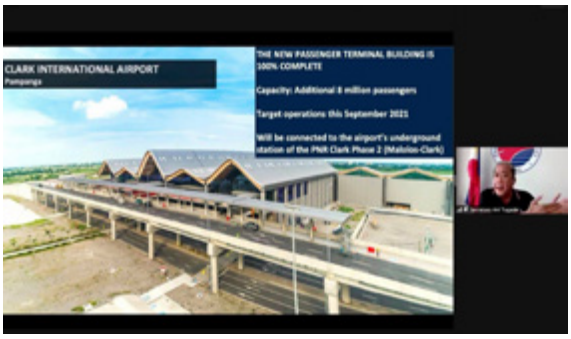


In between an important, symbolic landing at the runway of the Bicol International Airport in Daraga, Albay, and its inspection, Department of Transportation (DOTr) Secretary Arthur Tugade was able to participate virtually in the Megaworld International Philippine Property Expo 2021 today, 30-July-2021, to give a bird's eye view of the revolutionary transport infrastructure programs, projects, and initiatives rolling out in the country, and its significance in real estate development,

Underscoring how the DOTr has been undertaking transformation of the Transportation system to make the lives of every Filipino comfortable and convenient, Secretary Tugade highlighted the completed and ongoing projects under the four (4) transport sectors, namely Aviation and Airports; Railways; Road Transport, and Maritime.

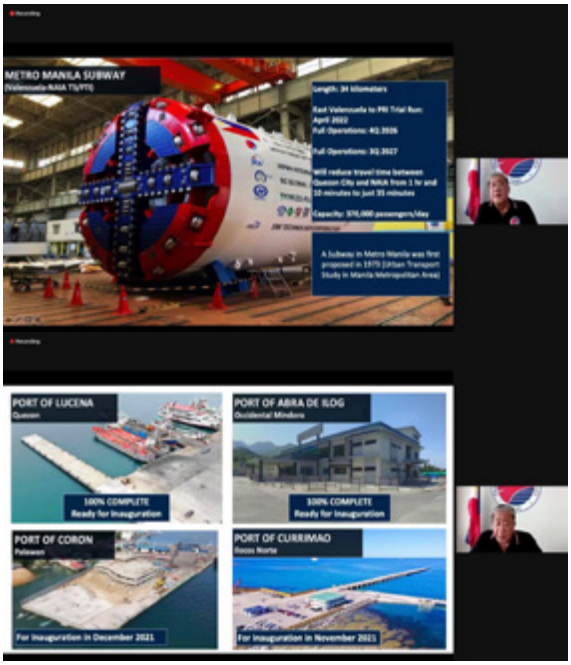
"Considering what is being done in the transportation sector, the Transportation Department can be a partner, an instrument, and a tool in revolutionizing the future of the real estate," Secretary Tugade remarked.

In the aviation and airports sector, the transportation chief announced that the DOTr and the Civil Aviation Authority of the Philippines (CAAP) has already completed 214 AIRPORT PROJECTS across the archipelago, with 100 more well underway.



Amongst the completed airport projects Secretary Tugade highlighted were the Clark International Airport's new Passenger Terminal Building (PTB), Bohol - Panglao International Airport, Mactan-Cebu International Airport, Dumaguete Airport, Calbayog Airport, as well as the Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM), and a lot more.

Secretary Tugade further mentioned several airport projects that are targeted to be inaugurated before the President's term ends, such as the Bicol International Airport, Butuan Airport, Siquijor Airport, Catarman Airport Rehabilitation Project, General Santos International Airport, among others.



For the railways sector, Secretary Tugade provided updates on the developments of several rail infrastructure projects, such as the MRT-3 Rehabilitation, Common Station, Metro Manila Subway, and MRT-7, among others. He also highlighted the recently-completed LRT-2 East Extension Project.

For the road transport and infrastructure, Secretary Tugade underlined three (3) vital projects. These are the establishment of Bike Lane Network in Metro Manila, Metro Cebu and Metro Davao, the EDSA Busway, and Paranaque Integrated Terminal Exchange (PITX).

For the Maritime sector, Secretary Arthur Tugade announced that the DOTr and the Philippine Ports Authority (PPA) have already completed 451 SEAPORT PROJECTS, and DOTR is currently working on 101 more seaport projects to be completed.

Aside from the Transport infrastructure projects, Secretary Arthur Tugade underscored how the DOTr continues to champion its culture, values, and ways of doing things, that made the agency's processes and system efficient, effective, seamless, and transparent.

"Apart from our accomplished programs and projects, what we are most proud of are the cultures and values that we were able to cultivate and nurture in the DOTr, especially the value of punctuality, transparency, and our uncompromising culture against corruption and red tape," Secretary Tugade said.

Secretary Tugade likewise presented the agency's shift towards digitization as a means for a swifter delivery of processes, as well as ensure the safety of its employees and clients amid the pandemic, through limiting human intervention.

In his closing remarks, Secretary Tugade sounded the clarion call to Megaworld to continually partner with the DOTr. *"Partner with us [Megaworld]. Makipagkapit-bisig kayo sa amin, nang sa ganon, sama-sama tayong gawin ang buhay ng Pilipino comfortable and convenient,"* Secretary Tugade concluded.

With the theme, *"Revolutionizing the Future of Real Estate,"* the pioneering virtual event aims to exhibit the real estate investment opportunities in the country, and provide a platform to learn from the expertise and experiences of prominent leaders from the public and private sector, in a bid to shape the future of the Philippines' real estate market.

On a personal note, Secretary Tugade's participation in this virtual conference is considered extraordinary as he attended this in between his landing and inspection of the BIA project. It is extraordinary that he made it possible to be able to deliver his promise to Bicolanos to land at the runway of BIA by end-July, and at the same time ensure his attendance in this virtual expo, to show how he values and honors his commitment.

Source: *https://dotr.gov.ph/10-press-releases.html*

NEW SHIP-PORT INTERFACE GUIDE TO SUPPORT GHG EMISSIONS REDUCTION

by SAFETY4SEA

The list of presented measures is non-exhaustive and is a result of initial research and findings, aiming to raise awareness of potential ideas which the maritime community could explore further. The measures have not been ranked in terms of emission reduction potential, but have been ordered into measures related to port operations, administrative data, nautical data and speed optimization.

Each measure presented in the Guide can be individually implemented, or implemented collectively – which would maximize the emission reduction benefit.

The eight practical measures presented in the guide are:

1.Facilitate immobilization in ports: Implementation of this measure would allow for maintenance and repairs of the main engine (ME) to occur simultaneously with cargo operations. This would contribute to a reduction in GHG emissions as it would optimize the time spent in port, and eliminate the need for the ship to transit to another location for work to be undertaken.

2. Facilitate hull & propeller cleaning in ports: Implementation of this measure would allow hull and propeller cleaning to take place in port, ideally simultaneously with cargo operations. This would contribute to a reduction in GHG emissions as it would optimize the time spent in port and eliminate the need for the ship to transit to another location for hull and propeller cleaning to be performed, as well as the reduced GHG emissions as a result of the hull and propeller cleaning itself.

3. Facilitate simultaneous operations (simops) in ports: Implementation of this measure would allow operations to occur simultaneously (e.g., cargo, bunkering, provisioning, tank cleaning, etc.). This would contribute to a reduction in GHG emissions as it would optimize the time spent in port, as operations can be concluded in parallel rather than in sequence.

4. Optimize port stay by pre-clearance: This measure optimizes the port call and aims to eliminate unnecessary waiting time by facilitating all required clearances in advance, thereby contributing to a reduction in GHG emissions through the optimized port stay. Ships may experience operational delays on arrival, during port operations or at departure due to clearance processes in ports. The delays may need to be recovered in transit, often resulting in higher transit speeds, and thereby increased fuel consumption and emissions. Port stay optimization can be supported by introducing pre-clearance of e.g. customs, immigration, port health or port authority formalities, avoiding waiting time to arrive, during operations alongside or to depart, in line with standard 2.1.2 of the FAL Convention: *"Public authorities shall develop procedures for the lodgment of pre-arrival and pre-departure information in order to facilitate the processing of such information for the expedited subsequent release/clearance of cargo and persons."*

5. Improve planning of ships calling at multiple berths in one port: This measure aims to improve the planning of ships calling at multiple berths in one port, as is often the case with container feeder ships, chemical and parcel tankers. This measure aims to ensure:

- Just in Time shifting of ships between berths; and
- Optimization of cargo operations.

Addressing the planning would result in lower GHG emissions as the ship's time under engine in port, the terminal operations, as well as all services ordered (e.g. nautical service providers), are aligned which result in improved port turnaround times and present an opportunity for bunker savings in a subsequent voyage to the next port of call, thereby contributing to a reduction of GHG emissions.

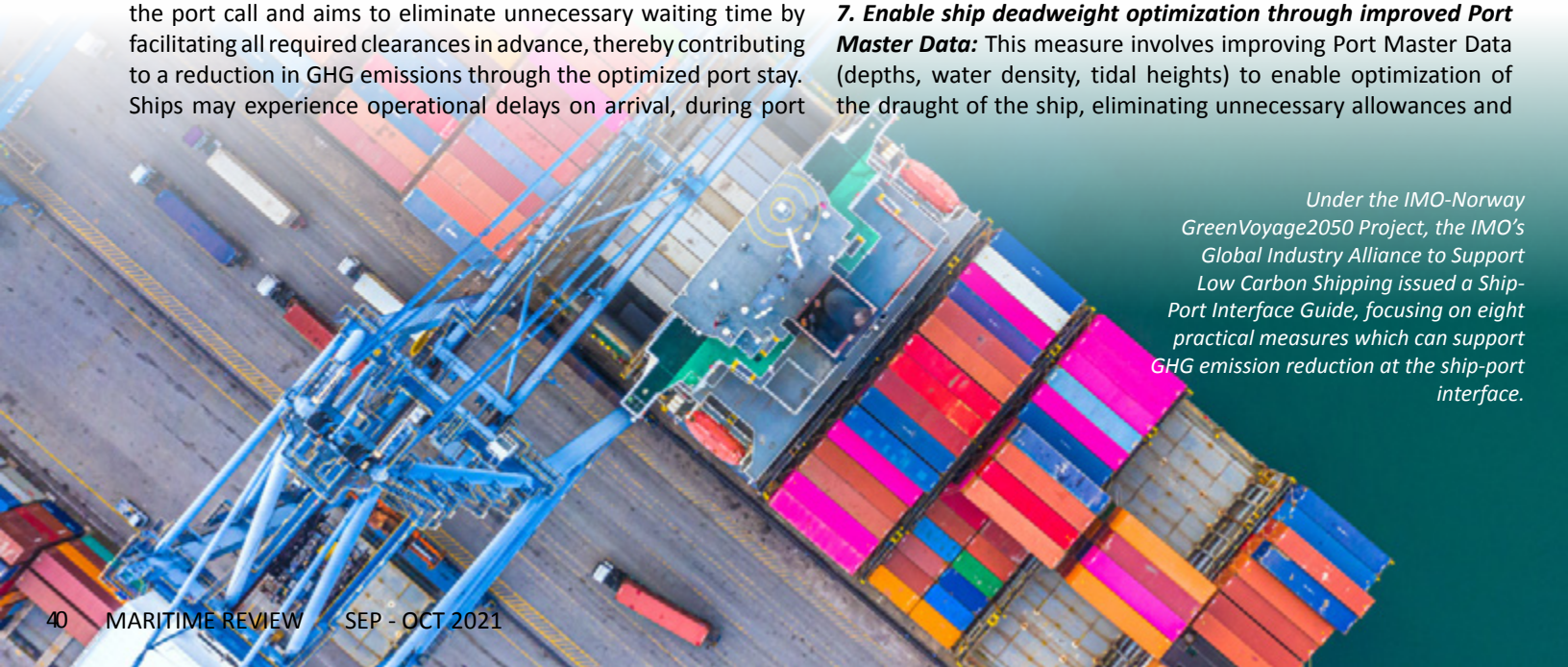
6. Improve ship/berth compatibility through improved Port Master Data: This measure involves improving Port Master Data to ensure that the right ship size is utilized, by:

a) reliable identification of the terminal and berth, and

b) reliable maximum length and beam per berth.

Having the right ship size utilized results in lower GHG emissions per carried ton of cargo.

7. Enable ship deadweight optimization through improved Port Master Data: This measure involves improving Port Master Data (depths, water density, tidal heights) to enable optimization of the draught of the ship, eliminating unnecessary allowances and



Under the IMO-Norway GreenVoyage2050 Project, the IMO's Global Industry Alliance to Support Low Carbon Shipping issued a Ship-Port Interface Guide, focusing on eight practical measures which can support GHG emission reduction at the ship-port interface.

additional buffers in the Under Keel Clearance (UKC). Improved access to reliable and up to date Port Master Data allows for better optimization of the deadweight capacity and therefore contributes to a reduction in GHG emissions per cargo ton transported.

8. Optimize speed between ports: This measure would allow for ships to optimize speed between ports, to arrive "Just In Time" when the berth, fairway and nautical services are all available. This "Just In Time Arrival" concept (JIT Arrival) will improve the port call process and ultimately reduce GHG emissions.

Through the application of JIT Arrival, GHG emissions and air pollutants can be reduced in a twofold manner:

- for the ship voyage through the optimization of the sailing speed and hence more optimal engine efficiency resulting in lower fuel consumption; and
- for the port area as the number of time ships maneuvering in the approaches or waiting at anchorage is reduced.

While particularly useful for stakeholders within the port community (e.g., port authorities, terminals, nautical service providers), the Guide is also relevant for ship owners, operators, charterers, ship agents, shipbrokers, and other relevant stakeholders. These play a key role in implementing the necessary changes and facilitating the uptake of emission reduction measures in the ship-port interface.

The Low Carbon GIA was launched with the aim to identify and develop innovative solutions to address common barriers to the uptake and implementation of energy efficiency technologies and operational measures. Since January 2020, the Low Carbon GIA has been operating under the GreenVoyage2050 Project, a joint IMO-Norway initiative to support the implementation of the Initial IMO GHG Strategy.

Download the Ship-port Interface Guide: https://safety4sea.com/wp-content/uploads/2021/03/IMO-Ship-Port-Interface-Guide-2021_03.pdf

Source: https://safety4sea.com/new-ship-port-interface-guide-to-support-ghg-emissions-reduction/?utm_source=noonreport&utm_medium=email&utm_campaign=green&cmid=b0fd9e9c-d984-4c98-a056-feb2e9abca66







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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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Japanese Compact Ship Handling Simulator

Our Curricula

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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