

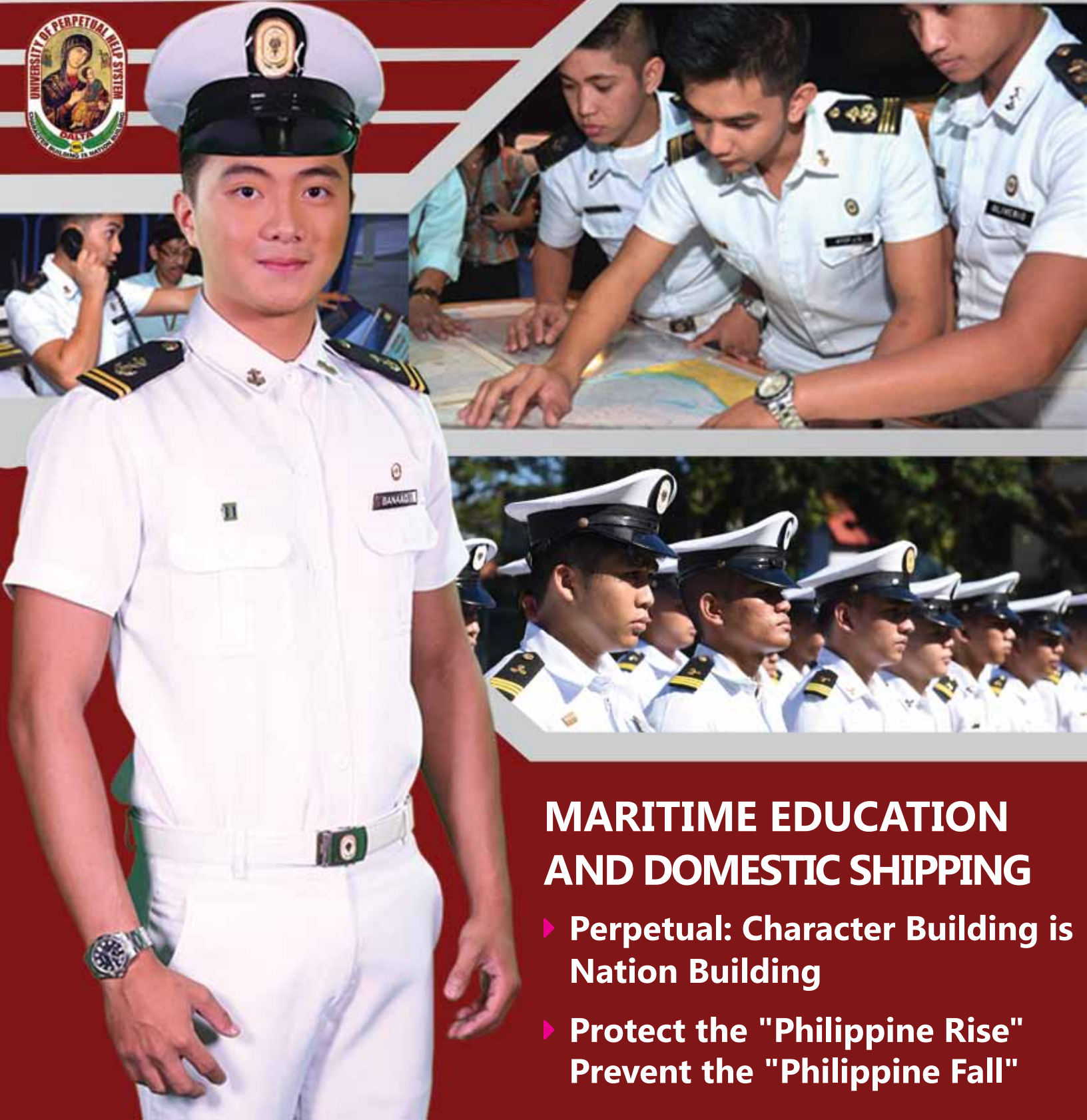


MARITIME REVIEW

A PUBLICATION OF THE MARITIME LEAGUE

Issue No. 18-2

March-April 2018



MARITIME EDUCATION AND DOMESTIC SHIPPING

- ▶ Perpetual: Character Building is Nation Building
- ▶ Protect the "Philippine Rise"
Prevent the "Philippine Fall"



Maritime Academy of Asia and the Pacific - Kamaya Point

Associated Marine Officers' and Seamen's Union of the Philippines-PTGWO-ITF

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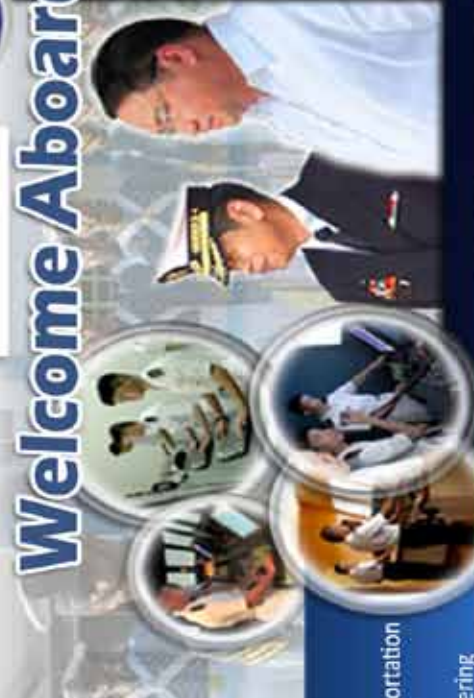
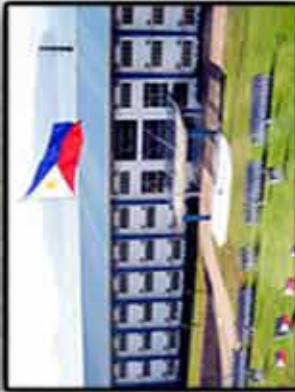
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MAAP Profile

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 Mariners Management Association of Japan, the Norwegian Seafarers' Union, the International Maritime Employers' Committee, the Danish Shipowners' Association, the Norwegian Shipowners' Association, and the Japanese Shipowners' Association.

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

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 Commission 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 Kapitán 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 Kapitán Felix Oca and/or a shipping company sponsorship.



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About the Cover: As one of the nation's maritime learning institutions, UPHSD provides not only merchant fleet fundamentals but also character building sessions for future Filipino seafarers



Maritime Events Calendar

MARCH '18

- 7 SEAGULL MARITIME SUER MEETING (AMARA SINGAPORE HOTEL, SINGAPORE, SG)
- 12-14 CMA SHIPPING 2018 (HILTON STAMFORD HOTEL, CT, USA)
- 14-16 ASIA PACIFIC MARITIME 2018 (MARINA BAY SAND, SINGAPORE, SINGAPORE)
- 20-23 GST & SHIPPING 2030 EUROPE 2018 (TIVOLI CONGRESS CENTRE, COPENHAGEN, DK)
- 21-22 22ND MARITIME HR & CREW MANAGEMENT SUMMIT (SINGAPORE, SG)
- 21-23 SHIPPING 2030 EUROPE (RADISSON BLU SCANDINAVIA HOTEL, COPENHAGEN, DK)
- 21-23 GREEN SHIP TECHNOLOGY EUROPE (RADISSON BLU SCANDINAVIA HOTEL, COPENHAGEN, DK)
- 23 MARITIME BREAKFAST FORUM #131 (MARITIME ACADEMY OF ASIA AND THE PACIFIC (MAAP), KAMAYA POINT, MARIVELES, BATAAN)**

APRIL '18

- 4-5 CLEAN WATERWAYS (HILTON ST. LOUIS, MO, USA)
- 9-11 SEA-AIR-SPACE (GAYLORD NATIONAL CONVENTION CENTER, NATIONAL HARBOR, MD, USA)
- 18-20 SHIPPAX FERRY CONFERENCE 2018 (COLOR MAGIC, OSLO-KIEL-OSLO, NO)
- 28 SEA JAPAN (TOKYO BIG SIGHT EXHIBITION CENTER, TOKYO, JP)
- 24 LNG SHIPPING & CLEAN ENERGY FORUM (MARINA BAY SANDS, SINGAPORE, SG)
- 25 SEATRADE MARITIME AWARDS ASIA (SANDS EXPO AND CONVENTION CENTER, SINGAPORE, SG)
- 27 MARITIME BREAKFAST FORUM #132 (MARITIME INDUSTRY AUTHORITY (MARINA), TAFT AVE. COR. TM KALAW ST., ERMITA, MANILA)**

MAY '18

- 1-3 AUVSI Xponential 2018 (COLORADO CONVENTION CENTER, DENVER, CO, USA)
- 2-3 OPENING OCEANS (LOKOMOTIVVÆRKSTEDET, COPENHAGEN, DK)
- 7-10 MARITIME WEEK AMERICAS (HILTON PANAMA, AV BALBOA, PANAMA, PA)
- 16-17 NAVIGATE 2018 (TURKU FAIR CENTER, TURKU, FI)
- 16-17 UNMANNED MARITIME SYSTEMS (HILTON LONDON OLYMPIA, LONDON, UK)
- 22 7TH EDITION OF NAVALIA, INTERNATIONAL SHIPBUILDING EXHIBITION 2018 (PONTEVEDRA, ES)

25

- MARITIME BREAKFAST FORUM #133 (PHILIPPINE NAVY (PN), HEADQUARTERS, PHILIPPINE NAVY, ROXAS BLVD, MANILA)**

JUNE '18

- 4-8 POSIDONIA 2018 (METROPOLITAN EXPO, ATHENS, GR)
- 19-20 GLOBAL OFFSHORE WIND (MANCHESTER CENTRAL, MANCHESTER, UK)
- 29 MARITIME BREAKFAST FORUM #134 (NATIONAL DEFENSE COLLEGE OF THE PHILIPPINES (NDCP))**
- 25 27TH WORLD GAS CONFERENCE, (WALTER E WASHINGTON CENTRE, WASHINGTON DC, USA)
- 25-29 TUG, SALVAGE & OSV CONVENTION AND EXHIBITION 2018 (PARC CHANOT CONVENTION CENTRE, MARSEILLE, FR)
- 27-29 PHILMARINE 2018 (SMX CONVENTION CENTER MANILA, MALL OF ASIA COMPLEX, PASAY CITY)

JULY '18

- 3-5 SEAWORK 2018 (MAYFLOWER PARK, SOUTHAMPTON, UK)
- 20 MARITIME BREAKFAST FORUM #135 (NATIONAL COAST WATCH COUNCIL (NCWC))**
- 25 INAMARINE 2018 (JIEXPO KEMAYORAN JAKARTA, JAKARTA, ID)

AUGUST '18

- 22 MARITIME BREAKFAST FORUM #136 (PHILIPPINE PORTS AUTHORITY (PPA), PORT AREA, MANILA)**

SEPTEMBER '18

- 4-7 SMM 2018 (HAMBURG MESSE, HAMBURG, DE)
- 21 MARITIME BREAKFAST FORUM #137 (PHILIPPINE COAST GUARD (PCG))**

OCTOBER '18

- 6-10 INTERFERRY 2018 (JW MARIOTT RESORT, CANCUN, MX)
- 12-14 RESCUE 2018 (HARPA CONCERT BUILDING, REYKJAVIK, IS)
- 19 MARITIME BREAKFAST FORUM #138 (DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (DENR))**

NOVEMBER '18

- 5-8 IRANIMEX 2018 (KISH INTERNATIONAL EXHIBITION CENTER, HORMOZGAN, KISH, IR)
- 23 MARITIME BREAKFAST FORUM #139 (DEPARTMENT OF TRANSPORTATION (DOTR))**
- 28-30 INTERNATIONAL WORKBOAT SHOW (MORIAL CONVENTION CENTER, NEW ORLEANS, LA, USA)

An Option for WPS Exploration and Development

Dear Editor:

As a victim of "aggression" in the West Philippine Sea, the Philippines should exhaust all diplomatic means to protect our rights, even though at the moment it appears "futile." Invoking the ruling in the Arbitration Case, it is not premature for the Philippines to appeal to its 4 fellow Claimants (**Malaysia, Vietnam, Taiwan, and Brunei**) to band together to seek relief from the UN Security Council in order to prevent China from extending its claim over the "nine-dash line" area by imposing an "Air Defense Identification Zone" that would prevent Claimant countries like the Philippines from monitoring the "military build-up" in the Spratly Island Group.

Claimant countries like the Philippines could also invoke "breach of regional peace and security" as a preventive step to avoid escalation of military activities — like performing surveillance flights over the on-going military constructions. But to seek relief from the UN Security Council would need the open support of at least two regular members, hence the need to draw Russia in to prevent a Chinese veto.

Without Russia, the UN Security Council, for the first time, would have to mediate with the aim to preserve "regional peace and security" in the West Philippine Sea because a possible veto by China would expose its military objective, which is inconsistent with the purposes of the Code of Conduct. A new image of the Philippines in conducting its diplomacy should be reinforced by new initiatives of its Foreign Affairs Department.

An early consultation by our Foreign Affairs Department with the 4 Claimant countries on some of the disputed islands in the Kalayaan Island Group, in anticipation of a Chinese Air Defense Identification Zone, should be made part of the objectives in finalizing the Code of Conduct, which is at present being finalized by ASEAN. Simultaneously, the Foreign Affairs Department should likewise consult with the U.S. regarding the need to draw Russia into the picture as a mediator between the 4 Claimants and China.

In a diplomatic maneuver, the Foreign Affairs Department could hold a consultative agreement meeting, as part of the ASEAN Code of Conduct meeting with the 4 Claimants affected by the projected "Air Defense Identification Zone" to agree to draw Russia in as the mediator between them and China. And by pooling together resources of the 4 Claimants to procure a squadron of Russian jets that may serve as their protective umbrella, the "non-use of the Spratly Island Chain for aggressive purposes" is ensured.

It is my belief that Russia would entertain this "protective role" in favor of the 4 Claimant countries since it would ensure the "peaceful use of the reclaimed islands." Russia would find it difficult to refuse, when approached collectively by the 4 Claimant countries. Drawing Russia in to mediate, and more importantly, to block the "Air Defense Identification Zone, is a logical step in the right direction, and consistent with the ASEAN aim of non-aggression. But early on, diplomatic moves should be initiated with Russia onboard so as to provide her a role to intervene in preventing a military confrontation over the West Philippine Sea.

The acquisition of a squadron of Russian jets by the 4 Claimant countries would also work to ensure "freedom of navigation" and in addition would prevent the implementation of the "Air Defense Identification Zone," which if allowed to continue, would bar them forever from using the seas of the WPS that should rather remain open to all.

The Philippines has to be consistent in spearheading the claim over some of these islands. And having obtained a favorable verdict from the Arbitral Tribunal, the Philippines should lead the way into the "Joint Exploration and Development" of these disputed islands.

There are many unexpected twists and turns in the on-going reclamation

activities undertaken by China in some islands of our Kalayaan Island Group (part of the larger Spratly Island Group). Having won the arbitrary award from The Hague, the Philippines should not allow the establishment of an aerial identification zone over the whole "nine-dash line," otherwise its ownership and rights over some of these islands would be forever barred.

Definitely, we need a collective action put forward by the 4 Claimant countries mainly because the Philippines' interest in the disputed island chain is also best pursued in this manner. It elevates the Philippines' proposal for "joint exploration and development" with China, on a 60%:40% sharing agreement, where 60% goes to the Philippines and the 4 Claimants (Malaysia, Vietnam, Taiwan, and Brunei) at 12% each with Philippines as the leader of the Claimants; and 40% going to China.

We shall see whether the 4 Claimant countries will support the "Russian mediator" proposal. The Department of Foreign Affairs has nothing to lose if this does not pan out, and making a move is better than none at all.

The above approach is submitted as a policy option to plot a clearer and more realistic solution for the Spratly Island Group dispute in the West Philippine Sea.

Very truly yours,

ATTY. FERNANDO C. CAMPOS



(Atty. Campos was a Congressman of Cavite in the mid-'60s, a former Governor of the province of Cavite during 1986-87; and then was appointed as DND Undersecretary during the Ramos administration. He is a businessman-realtor, a gaming technology enthusiast, and a regular attendee of the monthly Maritime Forum —ed.)



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Department of National Defense

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2:00 pm **General Membership Assembly**

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Maritime Education and Domestic Shipping

by VAdm Emilio C Marayag Jr AFP (Ret)

In the recent Maritime Forum in Cebu, the **Visayan Association of Ferryboat and Coastwise Shipping Operators (VAFCSO)** presented some challenges that affect the sea transport industry in Central Philippines. Among these are: too many, irrelevant and anti-poor domestic shipping regulations; numerous government regulators; and shortage of licensed and competent seafarers.



BS Marine Engineering students of the University of Perpetual Help's College of Maritime Education.

Regulations are designed to ensure safety of life and property at sea (**SOLAS**) and the responsibility of implementing them rest upon the government and the merchant fleet owners and operators. Updating those regulations requires constant dialogue among the stakeholders, observance of international maritime standards, and adoption of industry's best practices from leading domestic shipping companies and foreign counterparts. An interagency, multi-sectoral approach that includes the local government units to review, amend, revise and formulate regulations could address irrelevant, overlapping, conflicting, and anti-poor issuances. The delineation of responsibilities among the government regulators could also be threshed out during such interactions.

Somewhat alarming among the issues is the shortage of qualified seafarers manning inter-island vessels. **VAFCSO** further observes that the shortage may be attributed to tedious and impractical procedures in licensing, and expensive and excessive training courses for seafarers. Getting a seaman book or merchant marine officer license, for example, takes a lot of sacrifice such as queuing at the issuing agency's processing office in the early morning and undergoing a number of prerequisite courses. Update-training courses are not only expensive but also excessive and questionable in terms of necessity.

Philippine maritime schools annually produce some 40,000 graduates and more than half that number comes from the Visayas maritime institutions. Due to global shipping downturn starting 2015, and the emerging competition from other seafarer-producing countries in South

Asia and Eastern Europe, the demand for overseas Filipino seafarers declined. The result is a 50-75% reduction in the number of jobs available for these fresh graduates. This leaves about 20,000 to 30,000 prospective seafarers for absorption by the domestic shipping industry.

In 2012, there were about 300,000 seafarers in all vessels engaged in domestic trade, mostly passenger and cargo or both, except those in fishing boats. Most of these seafarers are embarked in nearly 3,000 steel-hulled ships of over 150 gross tons and the rest work in smaller vessels numbering 19,000 or so. There has been an upward trend in local ship construction since 2013, and the government still allows used ships importation as more RORO ports are constructed along or near the established nautical highways. The country also ranked 4th globally in terms of tonnage capacity in the **World Book Order**.

As a top country investment destination, partly due to the "build, build, build" strategy, our trade and commerce are expected to grow faster. With heightened economic activity and the adoption of international maritime standards, domestic shipping companies may have to hire additional qualified seafarers, not only to promote **SOLAS** but also to improve their organizational systems and procedures for more efficient services to the public and their clients.

The seafarers are the business enterprise's frontline personnel. They go through the rigors of the trade of navigating the ship that demands profound knowledge, considerable skills, and technical expertise. But there are instances when fatigue sets in and the seafarer's agility and work performance diminish. These are the times when many sea accidents occur. To prevent sea accidents, the government issues rules and regulations and assigns inspectors to compel compliance. Enforcement of rules and regulations, however, is just one aspect of maritime safety. Seafarers' education and training is another.

There are 80-100 maritime schools educating and/or training prospective seafarers: officers and ratings. To be fully qualified, graduates must pass the 1978 requirements of the International Convention on Standards on Training, Certification and Watchkeeping or **STCW**. Already twice amended, the Convention aims to enhance safety by focusing on the professional competence, physical fitness, and technical skills of all seafarers to conduct the ship from the port of origin to the port of destination. Navigating ships include not only strict observance of international and municipal maritime safety laws but also addressing emergency evolutions on board, such as firefighting, damage control, vessel and personnel security, repeal boards, inclement weather evasion, and lifeboat operation.

With the high cost of education and training, one formidable challenge of maritime schools is to increase the qualifying exam success rate of their graduates so they get jobs early on, hone their skills, gain experience, add value to their company, and raise seafaring standards. This will eventually make the Filipino seafarers, whether working locally or overseas, very competitive in seafaring profession. On the other hand, domestic shipping owners can assist our seafarers by providing a working environment conducive to organizational systems improvement and professional development. The Greek historian **Polybius** once said, "Education in tandem with experience is the best foundation for dealing with both adversity and good fortune." 📌

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Good news for Mother Earth?

by Commo Carlos L Agustin AFP (Ret)

Having been an enthusiastic follower of environmental issues (In fact we placed it on the Agenda of the NDCP Strategic Studies Group in 2002-2010), I have gone from naysayer to believer back to naysayer, then to a pragmatist, which certainly is a dynamic one. The reality for me today is that certainly the problem exists, as I have seen in our own environment – vanishing forests, diminishing water resources, harsher weather with stronger storms and frequent floods.

The **Climate Change** issue is a major agenda of the US left, highlighted by the Albert Gore agenda that started after he lost the Presidential election to Barack Obama. He did have some impressive presentations during his world tour, including in Manila. He continues this effort including a campaign he joined in partnership with Emmy-winning producer [Kevin Wall](#), *Live Earth* “built upon the belief that entertainment has the power to transcend social and cultural barriers to move the world community to action.” (Wikipedia)

Many of us believe in the value of technology. I have been quite disappointed in deuterium energy development, which, after viewing a British Museum of Science exposition in 1975, made me think that it would be a panacea that would break the OPEC stranglehold on the world economy and make the Philippines, next to the United States, quite rich due to our Philippine Deep alongside the Marianas Trench. As it turned out, we’re not there yet as the scientist’s theories have not been put to practical use, and a new dimension has been thrown in: D2O can be processed from

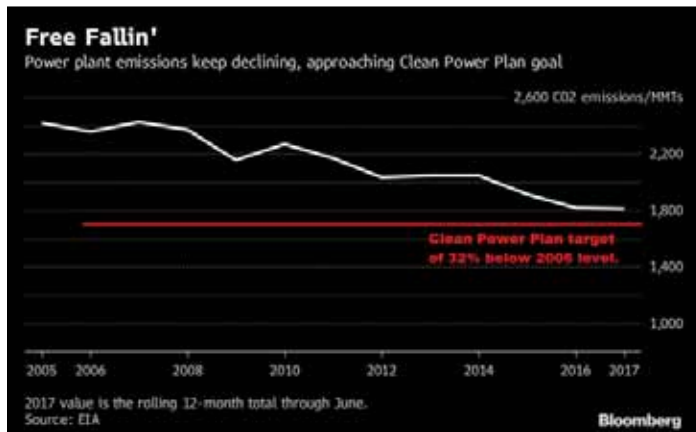
relatively shallower waters, throwing out the advantage of both Trenches, with the caveat that it could be a trade off, with cost of processing as the major element.

It is of course likewise understood that as climate change has been affected gravely by developments due to human actions, humanity can likewise develop interventions that can mitigate and even resolve the problem.

For alternative energy, one significant development, in my opinion, is forthcoming: the perfection of the application of the Tesla principle, long overshadowed by electric revolution along the AC power generation concept developed by Thomas Edison. Followers of alternative energy ideas will have noted the great amount of fake news (and SCAM ads) related to making cheap devices using this principle. But a local company that will soon emerge has actually put into fruition the real thing. It will make fossil-based power generation a thing of the past, but I surmise that given the amount of investment by existing energy players, not to mention the oil giants, that company will advance with extreme caution. Indeed they are doing so, and will limit start-up production to address islands and towns off the grid.

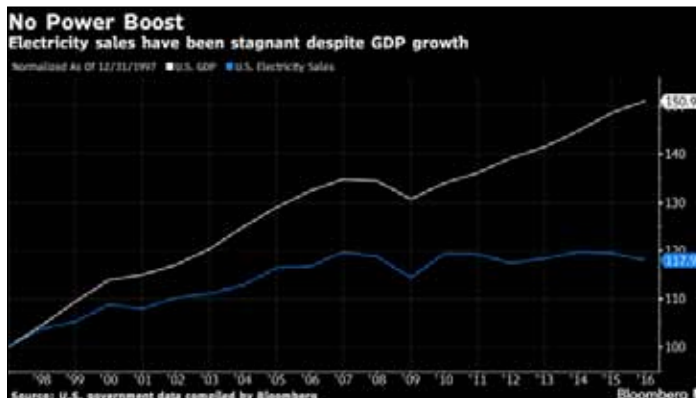
But a recent development in the utilities field may even change that – and allow that company to hasten the pace, and its added advantage of having no need to use the grid. It is because both solar and wind energy are now emerging faster than believed, and solar cell efficiency has not even gone beyond 50%.

In the utilities field, it seems that existing alternative energy players are gaining the upper hand, with the use of coal declining (a setback to US President Donald Trump's passion). From a tweet from EP Administrator Scott Pruitt, power emissions are falling, "approaching Clean Power Plan goals": (See <https://twitter.com/EPAScottPruitt>)

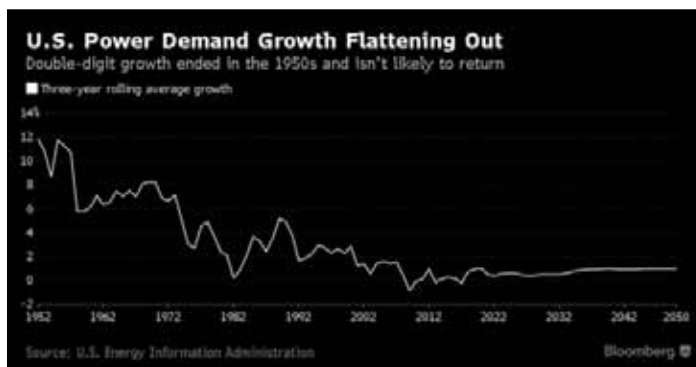


"In all that bedlam", says Bloomberg, "it's easy to lose sight of an equally important (if less sexy) trend: demand for electricity is stagnant." One of the causes, it seems, is the fact that industrial output has fallen, or moved elsewhere in the past decade, especially to China. Optimists believe that this will end and industrial output will rebound as a result of nanotechnology, and advancement in Artificial intelligence (AI).

Nevertheless, here's the graphic reality:



This leads to eventual low growth, a great plus factor for the environment.

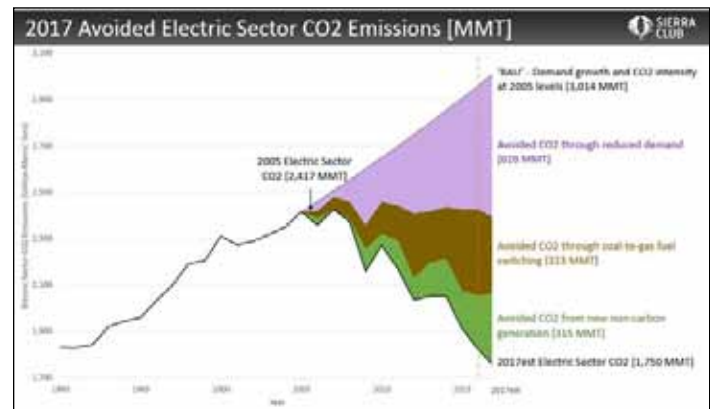


Bruce Nilles of BeyondCoal.org surmises that, "There is a lot of talk about (natural gas) being the primary cause of CO2 reductions in the US electric sector. Putting aside CH4 (for both gas and coal), the latest

analysis shows: 75% of carbon reductions from efficiency, wind and solar; 25% from (natural gas)."

That new energy system I mentioned has the possibility of getting much of these percentages in the future. That new system has the potential of powering road, rail and sea transport in the future in addition to having a monopoly of the electric utilities market.

2017 is a banner year indeed, and this final graph shows the tremendous decrease in CO2 emissions in the U.S. that will most probably be followed by dramatic changes in CO2 emissions worldwide, given the trend that has been established in the United States, its withdrawal from the Paris Accords notwithstanding.



Source: Bruce Nilles

All told, this is great news for Mother Earth!!! 📍



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Protect the "Philippine Rise" Prevent the "Philippine Fall"

by former Philippine President Fidel V. Ramos

"It would be 'dumb' of the Philippines to allow China to explore Philippine Rise despite Beijing's disrespect for a U.N.-backed arbitral court ruling recognizing Manila's sovereign rights in the West Philippine Sea."

– Supreme Court Senior Associate Justice Antonio Carpio (*Philippine Daily Inquirer*, 15-January-2018)

"Benham, or Philippine Rise, is part of our EEZ and the exploitation of its resources is exclusively ours."

– Rafael Alunan III (*BusinessWorld*, 30-January-2018)

Our Exclusive Economic Zone (EEZ) is the sea zone prescribed by the United Nations Convention on the Law of the Sea (UNCLOS) over which the Philippines has special rights regarding the exploration and use of marine resources, including energy production from water and

wind. It stretches from the baseline out to 200 nautical miles (nmi) from its coast. The term "EEZ" does not include either the territorial sea or the continental shelf beyond the 200 nm limit. The difference between the territorial sea and the EEZ is that the former confers full sovereignty over the waters, whereas the latter is merely a "sovereign right" which refers to the coastal state's rights below the surface of the sea. The surface waters are international waters.

Listen to the Supreme Court Senior Associate Justice Antonio Carpio. He was quoted in the *Philippine Daily Inquirer* (15-January-2018). **Justice Carpio**, the leading figure in Philippines' fight to nullify China's claim to almost all of the South China Sea, said "the **Duterte Administration** should stop Beijing from conducting marine scientific research in the **Philippine Rise** until it accepts the July 2016 decision of the Permanent Court of Arbitration in The Hague, Netherlands." "The ruling

invalidated China's sweeping claim and declared Beijing had violated **Manila's sovereign right** to fish and explore for resources in the **West Philippine Sea**, waters within the Philippines' 200 nm EEZ in the South China Sea." "China, which did not take part in the arbitration, ignored the ruling and went on to build artificial islands on reefs in **Spratly** archipelago, topping some of them with runways and military installations." "Pres. **Duterte**, however, refused to assert the **Philippine legal victory**, preferring loans, investments and development assistance from China. The ruling would benefit other claimants to territories in the South China Sea – through which \$5 trillion in global trade passes every year." "The refusal of China to comply with the Arbitral Award of The Hague Tribunal is not a "normal circumstance," and thus, Philippines should refuse China's request for marine specific research in **Benham Rise**," **Justice Carpio** stated.

What is the Philippine Rise? President **Duterte** issued Executive Order No. 25 in May 2017, changing the name of "**Benham Rise**" to "**Philippine Rise**." The **Philippine Rise** is a 13-million-hectare underwater plateau in the Philippine Sea, 250 kilometers east of Isabela Province, believed to be rich in resources. In 2012, the U.N. officially recognized the Rise as part of the Philippine continental shelf, giving our country "**sovereign rights**" to explore and exploit resources on the submerged plateau. "*The **Philippine Rise** became the subject of controversy in March 2017 after President **Duterte** said he had allowed Chinese survey vessels to go there. Then acting Foreign Secretary **Enrique Manalo** said he was unaware of any such statement made by Mr. **Duterte**." But **Justice Carpio** declared 'the Philippines would be dumb to grant China's request. "If a bully squatted on your front yard and requests to look at your backyard, would you grant the request of the bully? China has 'squatted on the **West Philippine Sea** and refuses to leave despite the ruling of the international arbitral tribunal. Countries that had ratified the **UNCLOS** are duty-bound to enforce and respect the contents of the international law in its entirety," **Justice Carpio** further said. **By refusing to accept the award of the Arbitral Tribunal pursuant to the dispute settlement provisions of UNCLOS, China is violating its U.N. obligations.***

Our EEZ is 360 Degrees. In his column titles, "Our EEZ is 360 Degrees," former DILG Secretary **Rafael Alunan III** (BusinessWorld, 30-January-2018) writes: "**Scarborough Shoal** (also known as **Bajo de Masinloc, Panatag, Panacot, Benham Rise** (now **Philippine Rise**) and the **Celebes Sea** have been making the news in the past week or so." "**Benham Rise** hit the headlines when the Chinese said that the Philippines doesn't have sovereignty over it. **Benham**, or **Philippine Rise**, is part of our EEZ and exploitation of its resources is exclusively ours." "The frenzy over that statement brought to mind **China's armed occupation of the South China Sea** and its **obvious imperial agenda to dominate the Indo-Pacific theater** before conquering the world in due time. Its submarines are, for certain, exploring the depths of **Benham** to familiarize themselves with critical pathways and hiding places in preparation for future conflict, citing innocent passage to mask their intentions. And if they control the depths, they will control the surface before we know it." "China's island fortifications in the SCS are vital components of its imperial agenda. Apart from **Woody Island** in the **Paracels**, China has built significant point-defense capabilities – anti-aircraft guns and (close-in weapons systems (CIWS) – at each of its outposts in the **Spratlys: Fiery Cross, Mischief, Subi, Gaven, Hughes, Johnson, and Cuarteron Reefs**. China won't spend big money building and prepositioning war assets like fighters, bombers and long-range missiles if it doesn't have a plan to suit its 'Kingdom Under Heaven.'" Unfettered access in **Scarborough, Benham Rise**, and **Celebes** would transform the Philippines into China's giant fulcrum to deny the U.S. the ability to secure the Pacific Ocean, SCS and Indian Ocean. As Deng Xiao Ping once said, "There can't be two tigers on the same hill."

Strong Opposition to China's Philippine Rise Sortie. The *Philippine Daily Inquirer* (15-January-2018) article continues: "Last week, **Magdalo** Rep. **Gary Alejano** said the **Department of Foreign Affairs** allowed a research vessel operated by the Institute of Oceanology of the Chinese Academy of Sciences to conduct research in the **Philippine Rise**, despite **China's militarization** of artificial islands in the SCS. "*Foreign Secretary **Alan Peter Cayetano** defended the **DFA's** decision, saying the law allowed foreign research in Philippine territory so long as a Filipino scientist is aboard the research vessel and the findings of the study are shared internationally. "On the other hand, Senior Associate **Justice Carpio** said the President and **Cayetano** were in no position to cede the country's ownership of several islands and waters in the **West Philippine Sea**. **Justice Carpio**, whose criticisms of the Duterte Administration's diplomacy in the **WPS** dispute have gotten him into **Duterte's** crosshairs, said "Filipino scientists should be aboard China's marine research vessels to ensure that the Chinese were not exploring for purposes of exploitation." Clearly, findings of such scientific 'marine explorations' must be made known to the whole world. Marine scientific research by foreign states in **Benham Rise** is purely for scientific research and cannot be conducted to explore the mineral resources for purposes of exploitation of such resources.*

Beijing's Tricky Modus Operandi. Rep. of **Bayan Muna Carlos Isagani Zarate** urged the **DFA** to rethink its decision allowing Chinese exploration in the **Philippine Rise**, calling the supposed research as Beijing's "Modus Operandi" to undermine Manila's maritime claims in the SCS during **Arroyo's** Administration. In a statement, **Zarate** said that a joint marine seismic undertaking (**JMSU**) between Philippines and China in 2005 gave Beijing access to valuable data on natural gas deposits, which 'jeopardized' the Philippines' claim to **Recto Bank** or **Reed Bank**, in the **Spratly Archipelago**. (*Philippine Daily Inquirer*, 15-January-2018)

Zarate emphasized the Philippines lost control and supervision over exploration for oil and other minerals in **Recto Bank** when the **Arroyo** Administration entered into the deal with the **China National Offshore Oil Corporation** and **Vietnam Oil and Gas Corporation**. With that **JMSU**, the **Arroyo** Administration effectively sold out the country to the Chinese, who were granted unbridled access to our maritime territory, especially the gathering of valuable data on natural gas deposits in our territories like Recto Bank. Our bad experience with the **JMSU**, where our country was placed in a very disadvantageous position, is bound to happen again. In 2008, **Bayan Muna** challenged the **JMSU** in the Supreme Court. The case remains unresolved.

FVR's Assessment. Some 12 years ago, the *Manila Bulletin* (then chaired by the late philanthropist-icon **Emilio Yap**) offered **FVR** to take over former President **Diosdado Macapagal's** Sunday column after the latter passed away. Boy, what a challenge – It is not easy to crunch out 1,500 words, even if only once a week! *Manila Bulletin* is known for truth, relevance and quality.

Therein was the daunting challenge! Of course, **FVR** took it up (and is glad he did), because that serves our national interest. **FVR** believes that, in due time, people/nations would bond more closely as one family because of deadly threats from weapons of mass destruction, calamities, diseases, pollution, waste and other man-made corruptions! Such bonding would lead to more harmony, enduring peace and sustainable development. Meantime, let's protect the "**Philippine Rise**" and prevent the "**Philippine Fall**."

KAYA NATIN ITO!



Please send any comments to fvr@rpdev.org. Copies of articles are available at www.rpdev.org.



Character Building is Nation Building

University of Perpetual Help addresses modern challenges for maritime cadets

by C/M James Nikko R Hosana, MBA

The influx of contemporaneous challenges in the maritime arena is sending a strong signal that modern day students must be accorded the best of maritime education and training especially when it comes to building the very foundation of their future. And if one chooses the path of becoming a maritime professional, the matter of deciding where to jumpstart his career is one of the struggles of every hopeful captain, chief engineer, and naval architect in the making. The good news is, there is no need for aspiring maritime students to go far from home because over the years, the University of Perpetual Help (UPH) has developed its maritime education and training institutions very well.

With an integrated system that upholds the time-honored guiding principle of “Character Building is Nation Building”, the University of Perpetual Help offers more than the basics of teaching and training. Among others, the development of the necessary attributes of a well-rounded seafarer is a top priority that should make each and every Perpetualite mariner count. In making every Filipino seafarer count, there’s no doubt that the Philippines will continue to be the crewing capital of the world.

With the pillars of education, training, and deployment steering the way of our combined institutions’ vision and mission, the students must know what to expect aside from the traditional well-wishes of *fair winds, clear skies, and following seas*.

Commitment to Quality Maritime Education

The University of Perpetual Help currently offers, among its many accredited programs, three maritime programs, namely Marine Transportation, Marine Engineering, and Naval Architecture and Marine Engineering, which are available in two accessible campuses – one in Las Piñas City and the other in Biñan, Laguna. Both campuses are equipped with state-of-the-art instructional facilities such as the Kongsberg Full-Mission Bridge and Engine Room Simulators and other technical laboratories. Dedicated UPH maritime professionals are always ready to mold students to the best of their abilities while instilling in them the core values of professionalism, teamwork, and excellence which are essential to the students’ pursuit of a dignified maritime profession. Recently, Senior High School with Pre-Baccalaureate Maritime Specialization has likewise been introduced into the system.

To attest to UPH’s long-standing commitment to excellence, Perpetualite maritime institutions have achieved several recognitions, from Commission on Higher Education (CHED) and Maritime Industry Authority (MARINA) to Bureau Veritas ISO 9001:2015 Certification, and even the much sought after MARINA’s list of recognized schools. UPH has been making a name for itself when it comes to quality education and training. The Philippine Association of Colleges and Universities Commission On

Accreditation (PACUCOA) has ranked the UPH Las Piñas campus as the second university with the highest number of accredited programs in the Philippines. The University of Perpetual Help Las Piñas and Biñan

“With the pillars of education, training, and deployment steering the way of our institutions’ vision and mission, the students must know what to expect...”



campuses which are offering medical, health, business, engineering, computer studies, international hospitality management, education, law, maritime education, aviation, criminology, and graduate programs have already been granted Autonomous Status by CHED.



The Bachelor of Science in Naval Architecture and Marine Engineering (BSNAME) program is also being upgraded through enhanced learning techniques in the classrooms, and related works on the testing tank and mold lofting facility. BSNAME students also undergo summer On-the-Job Training (OJT) in the shipyards where their individual performances are assessed. Most of the UPH BSNAME graduates are now practicing their profession in local and international shipyards, classification societies, surveying and marine insurance companies, government agencies, uniformed services, and the academe.

Proficiency and Teamwork in Training

The University of Perpetual Help has its own training center located in Marinig, Cabuyao, Laguna which is also known as the University of Perpetual Help System Laguna - Maritime Training Center, Inc (UPHSL-MTCI).

Unlike most of the other centers, UPHSL-MTCI offers in-house training programs to provide quality maritime training instructions and services to students, seafarers, and would-be seafarers in order for them to acquire the necessary skills and knowledge to be globally competent and competitive in the industry without all the hassle of travelling back and forth from their home. In-house trainees likewise develop camaraderie and teamwork while learning as they stay 24/7 inside the training site for the duration of the course.

UPHSL-MTCI is also equipped with up-to-date and well-maintained facilities and equipment vital to the students' learning. It has been accredited by the MARINA to offer Basic Training (BT), Advanced Firefighting (AFF), Proficiency in Survival Craft and Rescue Boat (PSCRB), Medical Emergency First Aid (MEFA), Consolidated Marine Pollution Annexes I-VI (Conso MARPOL I-VI) and Ship Security Awareness Training and Seafarers with Designated Security Duties (SSAT-SDSD).

Moreover, the training center has met all the requirements for certification to guarantee to its trainees that its top priority is to help them optimize their learning potentials from the classrooms and practicum. UPHSL-MTCI is also ISO 9001:2015 Certified.

Preparedness for Deployment

The two UPH maritime colleges' Shipboard Training Offices have been strengthened to further assist the students in the fulfillment of their shipboard training (SBT) pursuant to CMO No. 70, series of 2017. Partnership with various shipping companies engaged in international and domestic trade has been enhanced, thus providing more cadet berths for the students. Enrichment programs are likewise conducted to further ascertain the students' preparedness with the full understanding and support of their parents for SBT deployment.




The knowledge, skills, and attitude acquired by the cadets during the conduct of their SBT on board numerous inter-island vessels will definitely help enable the Philippines to sustain its global maritime manpower dominance. The combined SBT experience gained from international and inter-island vessels will better prepare them for deployment and thus, continue to make the Filipinos the world's maritime professionals and seafarers of choice.

Dr./BGen Antonio L. Tamayo AFP (Res), Chairman of the Board and CEO, and Founder of UPH is very proud that the University has already produced and deployed not only a significant number of maritime professionals and seafarers but also many other professionals for our country and the international community.

Admiral Wilfredo D. Tamayo, former Commandant of the Philippine Coast Guard, and presently the Senior Executive Vice President for Maritime Affairs of UPH added, "along with the other maritime schools in the country, our primary goal is to produce more competent seafarers and maritime officers for both the global fleet, and the shipping industry, maritime services, and cognizant government agencies of the country".

Here at the University of Perpetual Help, students are trained to serve and learn with a heart, mind, and hand. With the heart means to do things not just by the book but with great passion for the profession; with the mind means being mentally, socially, and spiritually prepared for whatever hardships life has to throw whether in school or onboard which would eventually make

the cadet a seasoned seafarer, and lastly, with the hand means to pursue a colorful career not just for the student's personal growth, nor for his family's, but more so, for the betterment of our seafaring nation, guided by the very principle that every Perpetualite has known, and that is "Character Building is Nation Building". 

*"...a career not
just for the
student's
personal growth,
nor
for his family's,
but
more so, for the
betterment of our
seafaring
nation..."*



JBLFMU Cadets at their regular Flag Ceremony

The JBLF Maritime University in the Philippines

by Rachel N. Manero and Joan Paulette Mary Libo-on

Progress is evident in the city and province of Iloilo. The city teems with both private vehicles and public modes of transportation. The province is dotted with beautiful homes and commercial edifices. The place has become a destination for middle class leisure. This economy boost is attributed to the belief that in the city and province of Iloilo, there is at least one seafarer in every family. Seafaring has become a lucrative profession for the Ilonggo people, and being a contributor to the seafaring profession, is likewise a pride and joy of Iloilo City being the seat of the first maritime university in the country, the **John B Lacson Foundation Maritime University (JBLFMU)**.

JBLFMU, the former Iloilo Maritime Academy, is the first maritime school in the Visayas and Mindanao regions; and the first private maritime education and training institution in the Philippines.



The late **Captain Juan Bautista Lacson**, its founder, was a seafarer himself, who wanted to share his knowledge and professional experience.

History. The institution opened originally as a Review Center to assist seafarers in preparation for the licensure examinations for the Marine Deck and Engine Officers in May 1931. Seeing it prosper, Capt. Lacson further formalized the review classes for seafarers, giving birth to an unstructured organization of

review classes for marine officers who wanted to upgrade their licenses to higher grades. The first class was composed of about 40 candidates; and 95% passed the examinations. When World War II broke out, the review school closed. Capt. Lacson went back to the US to serve as a U.S. Coast Guard Officer. When the war ended, Capt. Lacson perceived the potential of the marine profession being the fastest and the least expensive to join. He retired from the **U.S. Coast Guard**, went back to the Philippines and together with his brother, **Frank Lacson**, a pilot and a US government disability pensioner, drew a 2-year nautical curriculum. In 1948, 60 cadets had enrolled.

Enrollment increased year after year. In 1954, Capt. Lacson offered vocational courses for high school graduates. He then changed the name of the center to Lacson Vocational Institute. The curriculum included practical livelihood skills that could provide employment after high school graduation. It flourished until 1956 when the institute had to be abolished to give way to the marine engineering program that was badly needed by the maritime industry. Automotive mechanics and diesel mechanics were added to maximize the use of the equipment.

In 1957, Capt. Lacson decided to convert the institute to a stock corporation and registered it as the Iloilo Maritime Academy with the Securities and Exchange Commission. In 1958, Iloilo Maritime Academy was granted permit to conduct Naval ROTC training. In 1966, student activism gained ground in the campuses brought on by left-wing indoctrination. Despite the chaos and disquiet of the student leaders, Capt. Lacson bought a training ship for the use of the students, and was named M/B John B. Lacson. He had not wavered from his commitment to provide quality education and training to students. The training ship served as a floating laboratory, which gave the cadets some practical lessons by plying waters between Panay and Guimaras during the weekends.

The Daughter at the Helm. In 1968, activism grew out of hand.

Labor strikes, demonstrations and pickets plagued almost every business establishment in the Philippines including the Iloilo Maritime Academy. Capt. Lacson was growing old and because of hearing problems, he found it difficult to deal with the multi-faceted problems of the school. He asked for assistance from his youngest daughter, **Mary Lou Lacson**, to help him with the labor problems and the increasing requirements of the Ministry of Labor. The academy's labor union had been shaking the foundation of the administration. In 1972, Mary Lou came onboard as President, and conducted dialogues and meetings. Her leadership was able to bring back peace into the academy.



Dr. Mary Lou Lacson Arcelo, President Emeritus & Chairman of the Board

The entry of the young Mary Lou began the transformation of the Iloilo Maritime Academy into a more progressive institution. Her management style and accomplishments won the hearts of people under her command. New campuses were acquired and structures were constructed. New programs were introduced and methods and standards of instructions were improved. The institution applied for accreditations and recognitions in the national

and international arena, and did not fail. Her promise to her father to give the management of IMA a 1-year try became a commitment for the long haul instead.

The Birth of a System. The expansion and growth of the school made it difficult for just one person to oversee and manage the different campuses. On 18-September-1993, during one of the regular monthly meetings, **Dr. Mary Lou Lacson Arcelo** recommended to the Board of Trustees to create and establish different units. This gave birth to the John B. Lacson Foundation System. Under its umbrella are the John B. Lacson Colleges Foundation (**JBLCF**) **Arevalo**, which became the home of the deck cadets; **JBLFC Molo**, which offered the marine engineering program, customs administration, tourism, computer engineering, and cruise ship management; **JBLCF Bacolod**, which offered programs in nautical studies, marine engineering, customs administration, hotel and restaurant management; and **Puerto del Mar**, which became the seat for aquatic sports and the 13.6-hectare practicum site for SOLAS courses.

Each campus was designed to be autonomous under separate boards but bound by one common vision, mission, and set of objectives. All units were mandated to attain the same degree of compliance to the school's criterion of excellence.

In 1991, the Norwegian Ambassador to the Philippines, H.E. Lars Tangeraas, became the first Norwegian to visit the institution. On his second visit, he took with him The Director General of the Norwegian Maritime Directorate, Ivar Sandvik and the Executive Director of the **Norwegian Shipowners Association (NSA)** Rolf Haselgard. Together, they paved the way for the Norwegian assistance to **JBLFC**. The first NIS Class started in June 1993. This opened greater opportunities for the youth in Region VI who aspire to become competent Merchant Marine Officers.

On 15-June-1992, Capt. Lacson bade his school goodbye, leaving a very influential and everlasting legacy: his name etched in every seafarer leaving the portals of the school as a Lacsonian. In 2006, the university became a recipient of the Philippine Quality Award. In 2007, the application for university hood was granted. The John B. Lacson Colleges Foundation became the first maritime university in the Philippines, as the **John B Lacson Foundation Maritime University**. With the change of name came an evolution of compliances in the courses offered.

JBLFMU Arevalo retained its offering of the Bachelor of Science in Marine Transportation and Graduate School Courses. With the implementation of the K-12 program, it added offerings for the Senior High School. The **JBLFMU Molo** also maintained its offerings of Bachelor of Science in Marine Engineering; Bachelor of Science in Customs Administration; Bachelor of Science in Business Administration; Bachelor of Science in Information Technology, Bachelor of Science in Cruise Ship Management; Bachelor of Science in Tourism; and Maritime Junior High School. Its latest addition is the Maritime Senior High School. The **JBLCF Bacolod** on the other hand still offered Bachelor of Science in Marine Transportation; Bachelor of Science in Marine Engineering; Bachelor of Science in Hotel and Restaurant Management; and now, the Maritime and Junior High School. The **JBLF Training Center** offers MARINA-accredited trainings for seafarers.

The **JBLFMU** is steered by its REAL culture --*Resilience, Excellence, Agility, and Leadership*-- and is guided by its 7 core values: *Integrity, Perseverance, Loyalty, Excellence, Discipline, Godliness, and Equality, or I-PLUDGE*. In this quest, the institution is committed to its quality policy, which is "to comply with national and international standards and strive to exceed the customer's expectations."

All campuses are equipped with state-of-the-art training facilities used by students in their day-to-day learning activities. There is incorporation of the new technologies in the teaching and learning process such as eLearning and simulation (navigation, seamanship, radio communication-GMDSS). **JBLFMU** has opened its own maritime museum, which gives visitors a deeper understanding and appreciation of maritime history, maritime profession, and the Filipino heritage.

JBLFMU also undergoes voluntary and required accreditation and certification from the Bureau Veritas for its ISO, Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA), CHED, and TESDA.



Dr. Ronald Raymond Lacson Sebastian, CEO, JBLFMU

Capt. Lacson's Grandson as CEO. In 2008, **Dr. Mary Lou Arcelo's** youngest son, **Dr. Ronald Raymond Lacson Sebastian**, took over the reigns as Chief Executive Officer heading the Executive Council composed of the unit administrators, the auditors, the QA managers' coordinators; and functions as the central and top management council of the institution. **Dr. Mary Lou Lacson Arcelo** remains as Chairman of the Board of Trustees, the top policy-governing body of the **JBLF**. The then Quality, Health, Safety and Environmental Protection

policy, now the Integrated Management System policy, is one of Dr. Sebastian's priority thrusts. This advocacy led the way for a strengthened community extension service, which includes the creation of the **Guimaras Bike Paradise** of the Philippines project, conceptualizing and pioneering of the **Iloilo Bike Festival** and spearheading the **Paraw Regatta Festival** both for Iloilo and Guimaras. Also a priority project for his leadership is the preservation of the **Igang Bay Marine Sanctuary** in Guimaras, which has now shown a remarkable improvement. **JBLFMU** has become a major supplier of Filipino marine officers, with a 12% contribution out of the 30% national contribution of the Philippines to the world's seafaring manpower total. Before the K-12 program implementation, its linkages include 165 shipping companies, both international and domestic; a student population of 8,000, and a faculty force of 314, of which 123 are deck and engine officers. Amidst stiff competition with various other maritime institutions, the **JBLF** is one of the top 10 maritime institutions, having earned both global and national recognitions over the years. Its competitive advantage is highlighted by the many "firsts" that it has achieved, such as:

1. The first maritime educational institution accredited by the Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA). (March 1986)
2. The first maritime educational institution in the Philippines that has a Maritime High School. (1990)
3. The first maritime school in the Philippines that has formulated and adopted the Enriched CHED Curriculum incorporating the IMO Model Courses. (June 1995)
4. The first maritime educational institution granted Level III accredited status and re-accredited status, a distinction, which it holds up to this day. (October 1995)
5. The first maritime educational institution in the Philippines to attain an international accreditation, the DNV Certification for its Quality Assurance System- the first in the Philippines, second in Asia and third in the world to have such a distinction. (November 1997)
6. Among to the first cluster of 11 maritime educational institutions that have complied with the International Maritime Organization (IMO) requirements, for the inclusion of the Philippines in the "White List". Of the 11 schools, JBLCF was counted 3 times for its three campuses. (1998)
7. The first maritime educational institution granted Autonomous Status. (October 2001)
8. The first maritime institution whose graduate program was subjected to the PACUCOA preliminary visit for Level 1 accreditation. (2004)
9. The first maritime institution to be a recipient of the Philippine Quality Award (PQA). (2006 and 2009)
10. The first private maritime university in the Philippines. (2007)
11. The first maritime school granted level IV accredited status by the PACUCOA. (November 2008)
12. The first Philippine Maritime HEI to be a member of the International Association of Maritime Universities (IAMU) (2008)
13. The first maritime school to be granted Institutional Accreditation Status by PACUCOA (2011)
14. The first Philippine maritime school to be a member of the International Association of Maritime Universities (IAMU)

In relation to management undertakings, **Dr. Mary Lou Lacson Arcelo** was accorded the **Juran Award** in recognition of her achievements in promoting quality. She also became the 3rd Filipino to have been chosen as an **Officer of the Royal Norwegian Order of Merit** in recognition of her fruitful and mutually beneficial maritime cooperation with Norway.

Presently, Dr. Sebastian is steering the university towards coming at par with the challenges brought about by modernization and technology in maritime education. Under his leadership JBLFMU has established itself as The Maritime Vanguard, a leader and innovator in the field of maritime education and maritime-related courses. It has an Information Technology and Software Engineering Department that develops software programs for the university to make administrative procedures electronic and paperless. This department has also worked closely with a software developer to produce the **JBLFMU App**, launched in 2016, now available on Google Playstore. The app contains a range of services to students, employees and stakeholders that are accessible through smartphones. The university also has an integrated Media Production, Public Relations and Corporate Communications Office that produces tri-media content for the institution.

Sustained by its flagship courses and the consistent adherence of its programs to international university standards, **JBLFMU** has contributed a positive impact to the maritime industry as a provider of excellent seafarers worldwide.

WELCOME ABOARD!





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- Risk Evaluation and Analysis
- Superintendency and Repair Supervision
- Naval Architecture and Ship Design
- Project Cargo Surveys
- Nickel Ore Loading Surveys
- Management System Development, Consultancy
- JH143 Shipyard risk assessment surveys



Services that we offer:

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Navigating the Naval Defence of Asia-Pacific

by Maritime Security & Coastal Surveillance Week Asia 2017 – Indonesia | Defence IQ

Exclusively from the Maritime Security and Coastal Surveillance Week Asia 2017, we share some key takeaways on Asia-Pacific naval defence.



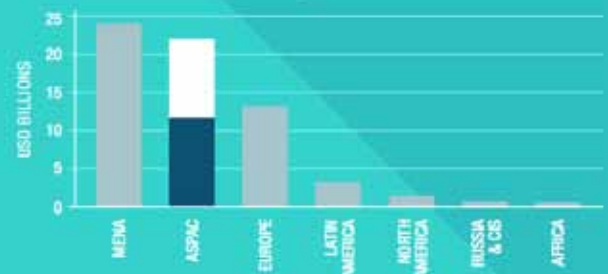
DEFENCE SPENDING IN ASIA-PACIFIC

A demonstration of China's fully flexed muscles as Japan growth declines due to lower spending on military pensions.

COUNTRY	DEFENCE BUDGET (USD)	GROWTH 2014 – 2017
CHINA	\$192.5 billion	22.8%
JAPAN	\$44.5 billion	-5.0%
SOUTH KOREA	\$34.7 billion	6.2%
TAIWAN	\$13.8 billion	-5.7%
SINGAPORE	\$9.6 billion	14.8%
INDONESIA	\$7.7 billion	17.4%
VIETNAM	\$5.9 billion	12.6%
THAILAND	\$4.9 billion	16.4%
MALAYSIA	\$3.3 billion	-10.3%
PHILIPPINES	\$3.0 billion	41.5%

ASIA-PACIFIC 2ND LARGEST GLOBAL EXPORT MARKET

Investment in the region is promising with Asia-Pacific standing at 2nd largest export market globally in 2017 and East Asia alone in 3rd, worth around USD12 billion. All in all the region accounts for around 1-in-5 dollars spent on imported defence equipment.



PROJECTED SUBMARINE STRENGTH OF SEA NAVIES IN 2025

Prior to the early 2000s, Indonesia was the only post Second World War submarine operator in the region. Acquisitions have rocketed in the region leading to speculation of an Asia-Pacific arms race.



SAFEGUARDING INDONESIAN MARITIME SOVEREIGNTY THROUGH A 360° ACTIVE DEFENCE STRATEGY

COASTALSURVEILLANCEINDONESIA.IQPC.SG



Wreckage of Warship That Fired First US Shot of WWII Found Near Philippines

by Wyatt Olson, Courtesy of STARS and STRIPES

Navigea Ltd, R/V Petrel
2017-12-01 06:32:53



Dive: 5

FORT SHAFTER, Hawaii — Just days before the 76th anniversary of the surprise attack on Pearl Harbor, marine researchers have found and explored the undersea wreckage of the U.S. ship that was the first to fire upon a Japanese vessel that day.

On 01-Dec-2017, the crew of the research vessel *Petrel* sent an underwater drone 650 feet below to explore and document the remnants of the **USS Ward**, according to a statement by the **USS Ward Expedition**.

The *Ward* has rested unseen at the bottom of **Ormoc Bay** — just off the island of **Leyte**, Philippines — since it was destroyed by kamikaze planes in 1944. It was the end of the line for a ship that played a historic role in the beginning of World War II.

During the early morning hours of 07-Dec-1941, the Wickes-class destroyer was patrolling the entrance to Pearl Harbor. Just after 6:30 a.m., the officer of the deck spotted the periscope of a Japanese 80-foot midget submarine trailing the cargo ship **USS Antares** into the harbor, which was home to the Pacific Fleet.

The **Ward** fired on the sub and dropped several depth charges.

"We have attacked, fired upon and dropped depth charges on a submarine operating in defensive sea areas," the **Ward's** commander



A machine gun on the USS Ward, which was sunk during World War II off Leyte, Philippines, is seen on Nov. 30, 2017. COURTESY OF PAUL ALLEN

radioed a few minutes after the sub rolled over.

The submarine was sunk almost two hours before the first wave of Japanese fighters and bombers attacked the island of Oahu and decimated the Pacific Fleet's Battleship Row.

The **Ward's** shots are regarded as the first fired by America during World War II, even though the United States did not officially declare war on Japan until the next day.

Three years to the day, on 07-Dec-1944, the **Ward** was attacked near **Leyte** by several Japanese kamikazes — suicide aircraft loaded with explosives. One slammed into the ship's hull, igniting a fire that could not be contained. The crew was ordered to abandon ship, and the **Ward** was intentionally sunk by a fellow Navy ship.

*"The **USS Ward** found herself in the crucible of American history at the intersection of a peacetime Navy and war footing,"* Adm. **Scott Swift**, Pacific Fleet commander, said in a statement issued by the expedition's organizers. *"She took decisive, effective and unflinching action despite the uncertain waters. Now 76 years on, her example informs our naval posture."*

The **Petrel** is owned by Microsoft co-founder **Paul Allen**. The 250-foot ship is one of the few capable of exploring waters as deep as 3.5 miles. The **Petrel** began its five-day expedition in the Philippines on 28-Nov-2017, first surveying five Japanese destroyers sunk during World War II's **Battle of Surigao Strait**, the statement said. The research vessel then surveyed the **Ward** on 01-Dec-2017 before returning to port in **Surigao City** on Saturday. Searchers verified the wreckage by cross-referencing historic drawings and schematics of the **Ward**.

Paul Allen has also spearheaded expeditions that discovered the wrecks of the **USS Indianapolis** in August, and the Japanese battleship *Musashi* in 2015.



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Implementing the ASEAN-China Declaration for A Decade of Coastal and Marine Environmental Protection in the South China Sea (2017-2027)

by balikBALANGAY - An extended commentary

Part I

Introduction: Laying the foundation for ocean governance in the South China Sea maritime region, defining the concern relating to the coastal and marine environment, and prescribing the ocean governance approach. On the occasion of the 20th ASEAN-China Summit on 13-November-2017, the Heads of States/Governments of ASEAN Member States and the People's Republic of China proclaimed 2017-2027 a decade of coastal and marine environmental protection in the SCS. The **Declaration** embodies a 15-paragraph mix of preambular *cum* substantive provisions. The operative part at the end of the Declaration proclaims the decade 2017-2027, "**A Decade of Coastal and Marine Environmental Protection in the SCS,**" and that the Governments of the ASEAN Member States and China are "committed to meet the **aspirations** of this **Declaration.**" References to the SCS, which is mainly concerning ocean governance, reflecting the essence and aspirations of the **Declaration**, would therefore refer mainly to the maritime area, and minimized allusions to the disputed areas.

The **Declaration** takes note that it coincides with the 15th anniversary of the signing of the ASEAN-China **Declaration** on the Conduct of Parties in the SCS (ASEAN-China DOC-SCS). It also reaffirms the "regional commitments" in 2016 on the **19th ASEAN-China Summit to Commemorate the 25th Anniversary of ASEAN-China Dialogue Relations**, and in the **Joint Statement of the Foreign Ministers of ASEAN Member States and China on the Full and Effective Implementation of the DOC**. The **Declaration** affirms the commitment of Governments under the ASEAN-China DOC-SCS "particularly on undertaking **cooperative activities** on marine environmental protection," and that the parties concerned may explore and undertake cooperative activities in accordance with universally recognized principles of international law, including the UNCLOS 1982. It acknowledges the importance of protecting the SCS as a natural resource base for economic and social development, and that the preservation and sustainable management of the coastal and marine environment is vital to economic well-being and enhanced quality of life of the peoples of ASEAN Member States and China.

The **Declaration** cites interrelated framework instruments relevant to protection of the coastal and marine environment; recalling the "obligations of Governments" as contained in the following international agreements: (a) United Nations Convention on the Law of the Sea, 1982; (b) United Nations Decade on Biodiversity (2011-2020); (c) Convention on Biological Diversity (CBD), and **relevant international instruments**; and (d) United Nations Agenda 2030 for Sustainable Development, particularly Goal Number 14, Life Below Water, to promote conservation and sustainable use of the oceans, seas and marine resources. A general reference is made in regard to UN resolutions and other efforts to preserve and protect coastal and marine environment and resources.

In regards to the management of marine resources "to ensure its rational and sustainable development," the **Declaration** cites specific reference to generally accepted scientific principles: (a) the need to promote responsible fishing practices, environmentally-friendly

fishing methods; and combat illegal, unreported and unregulated (IUU) fishing, to ensure sustainable fishery resources and achieve food security; (b) a precautionary and ecosystem-based approach based on the best available science in marine resources management to ensure rational and sustainable development could be applied as appropriate; (c) sustainable management and conservation of fresh water eco-systems such as lakes and rivers, wetlands, and adjacent estuaries along coastal areas in the overall health of the marine environment (of particular interest to the Philippines and other ASEAN countries is environmental management in "water communities" or those located onshore or in lakes as they have significant impacts "on the overall health of the marine environment"); and (d) conservation of endangered and migratory wildlife species warrants cooperation from countries within the region where such species spend any part of their life cycle. As a management principle, is "the need to continue developing and sustaining environmentally-friendly mechanisms to mitigate the effects of climate change and trans-boundary marine environmental pollution and degradation."

The scientific framework and parameters are not intended to be exhaustive or all-inclusive as they merely set the collective tone and convey the message in regard to ocean governance in general that highlight their special relevance to sustainable management and conservation concerns of the coastal and marine environment in the SCS. Moreover, the **Declaration** notes the current environmental situation in the SCS requires **collective attention and action** to protect the marine environment and biodiversity; noting further "**that coordinated and cooperative regional efforts** are essential for the scientific conservation and management of the marine environment, biodiversity, and coastal zone of the ecosystem of the SCS."

As an aspiration of the Parties for the sake of the preservation and conservation of the coastal and marine environment is to explore and undertake other cooperative activities under universally recognized principles of international law, including UNCLOS 1982, "**pending a comprehensive and durable settlement of territorial and jurisdictional disputes ...without prejudice to the positions of the concerned parties to the disputes.**" The "benefits to be gained from having the SCS as a sea of peace, stability and prosperity," is in the Declaration. The obligations and commitments of the ASEAN Member States and China, and their collective aspirations under the **Declaration**, transcend the maritime disputes in the SCS and lead towards a pure science norm-based management approach collectively and cooperatively to conserve, preserve and protect the coastal and marine environment.

Implementing the Declaration – a rules-based regional ocean governance framework under UNCLOS 1982. The **Declaration** lays down the foundation for collective and cooperative regional ocean governance among States bordering the SCS, but assumed as an ASEAN-China undertaking among all the Parties to the **Declaration**. The legal and scientific framework for implementing the **Declaration** is UNCLOS 1982, which is attributed all prominence in ocean governance, and the rights, duties and obligations among States Parties to UNCLOS to cooperate in the implementation of the provisions. In the

situation of SCS with characteristic regional features (UNCLOS Article 197) that necessitates collective and cooperative ocean governance, and additionally burdened with intractable maritime jurisdictional issues among bordering States, the appropriate legal and scientific framework for the immediate governance concerns reflected in the **Declaration** (i.e., coastal and marine environment protection) would be the UNCLOS Part IX on enclosed and semi-enclosed seas. The SCS meets the UNCLOS definition of an enclosed/semi-enclosed sea defined at Article 123 thereof, as **a gulf, basin or sea surrounded by two or more States and connected to another sea or the ocean by a narrow outlet or consisting entirely or primarily of the territorial seas and exclusive economic zones of two or more coastal States**. As regards a governance regime for enclosed and semi-enclosed seas, the same UNCLOS provision also calls for cooperative undertaking, bilateral or collective, in all aspects of ocean governance and management for such seas.

The **Declaration** is an ASEAN-China undertaking in SCS and the governance approach is explicitly determined therein to be collective and not bilateral. Under UNCLOS Article 123, the parties directly concerned in an UNCLOS Part IX arrangement in the SCS would be China, Vietnam, Laos, Philippines, Malaysia, Brunei, and Indonesia as bordering States. The ASEAN member countries and China would form the principal participating States in an UNCLOS Part IX arrangement implementing the **Declaration**. However, in the context of the **Declaration** in relation to UNCLOS Part IX, the rest of the ASEAN member States would necessarily be direct participants in its implementation, in two categories subsumed together: (1) as signatory to the **Declaration** as ASEAN Member States, and (2) as “other interested States” under UNCLOS Article 123 that do not border the SCS, wherein the “invitation” from the principal participating States to the rest of the ASEAN member countries is necessarily impliedly contained and accepted in the **Declaration** itself. In the context of the **Declaration** implementing UNCLOS Part IX, the distinction between States bordering the SCS and the rest of the ASEAN Member States has been erased, and that all ASEAN member countries are collectively participants with China as Parties to the Declaration. Moreover, the duties and obligations between the ASEAN Member States and China, would necessarily extend throughout an expanded maritime area as interconnected enclosed and semi-enclosed seas under UNCLOS Part IX, that would encompass all the seas of the ASEAN maritime region beyond the intended SCS ambit of the **Declaration**.

Implementing the **Declaration** on coastal and marine environmental protection in the SCS is an all-inclusive undertaking among ASEAN Member States and China by virtue of the terms of the **Declaration**, and not only among ASEAN countries bordering the SCS and China. The undertaking among ASEAN Member States in regard to coastal and marine environmental protection in SCS under the **Declaration** is differentiated from that in the ASEAN-China DOC-SCS, and for that matter under the ASEAN-China Code of Conduct being formulated, which binds directly only the ASEAN claimant countries and China. The obligations and commitments under the **Declaration** is an active collective and cooperative engagement among ASEAN Member States whether claimant or non-claimant States in the SCS maritime jurisdictional disputes. Whereas, non-claimant countries in the ASEAN-China DOC-SCS (and the proposed Code of Conduct) are simply passive participants and not even guarantors of its faithful compliance – a factor in the seeming indifference and perceived failure of the ASEAN to reach consensus on the SCS agenda.

Implementing the Declaration – Defining the scope of collective cooperation in ocean governance. The activities outlined in the **Declaration** would be implemented collectively and cooperatively as prescribed and not bilaterally as otherwise allowed under

UNCLOS Part IX. Since the **Declaration** mentions UNCLOS as the principal instrument to implement the **Declaration**, and UNCLOS Part IX being the relevant governance regime for the SCS as enclosed/semi-enclosed sea, the appropriate modality or vehicle for a collective and cooperative maritime and ocean governance scheme would necessarily be through **an appropriate regional organization** (UNCLOS Article 123) to be established through an implementing agreement among UNCLOS Part IX stakeholders: (a) the States bordering the SCS: China, Vietnam, Laos, Philippines, Malaysia, Indonesia, Brunei; (b) the rest of the ASEAN Member States as Parties to the **Declaration** that binds them collectively; and (c) international organizations and NGOs upon invitation of the principal stakeholders under the **Declaration**.

Faithful to the rationale and aspirations expressed in the **Declaration** on coastal and marine environmental protection, the connectivity of the ocean, the geomorphological and large marine ecosystem setting of the SCS, and the rationale for such seas being accorded a sui-generis governance regime under the UNCLOS, it cannot be too early to start adapting a mindset to project holistic and comprehensive governance to the entirety of the ASEAN seas. They share characteristic regional features and are inter-connected enclosed/semi-enclosed seas that encompass inter-connected archipelagic waters within. An expansion of coastal and marine environmental protection for the wider maritime region would be a compelled regional undertaking per UNCLOS Part IX.

Implementing the Declaration – Target activities relating to coastal and marine environmental protection in the SCS for the decade 2017-2027. The ocean governance activities are: (a) to promote responsible fishing practices, environmentally friendly fishing methods, combating illegal, unreported and unregulated (IUU) fishing; (b) scientific conservation and management of marine resources and environment, biodiversity, and coastal zone of the ecosystem; (c) sustainable management and conservation of fresh water eco-systems such as lakes and rivers, wetlands, and estuaries along coastal areas, and the overall health of the marine environment; and (d) to continue developing and sustaining environmentally-friendly mechanisms to mitigate the effects of climate change and trans-boundary marine environmental pollution and degradation.

While the **Declaration** mentions specific activities, it cannot be intended as a neat exclusionary enumeration. The **Declaration** encourages that “the parties concerned may explore and undertake relevant cooperative activities in accordance with universally recognized principles of international law, including the UNCLOS 1982” and not confine themselves solely to specified activities of the **Declaration**. The framework instruments in the **Declaration** serve as guidance documents for crafting a regional ocean governance regime in the SCS, and provide a wide scope of protective and conservation measures including a general reference to “UN resolutions and **other efforts to preserve and protect the coastal and marine environment and resources.**” Other efforts may include “developing and sustaining environmentally-friendly mechanisms to mitigate effects of ... **trans-boundary marine environmental pollution and degradation.**”

The target activities can be an initial or “starter package” for the SCS under the **Declaration** and for constructing a regionwide ASEAN-China Integrated Coastal Zone Management (ICZM) program addressing the economic, socio-cultural, and security pillars of AEC 2015 vital to food security, “economic well-being, and enhanced quality of life of the peoples of ASEAN Member States and China.” The Parties can explore and undertake cooperative activities under UNCLOS and universally recognized principles of international law, rendering **open-ended** the collective and cooperative ocean governance activities beyond the Declaration’s specificity. In effect, no **limits or constraints** exist to collective and cooperative ocean governance activities under the **Declaration** from the outset.

Implementing the Declaration — China's design and unilateral commitment to ocean governance, a **Silk Road Spirit** in a **Blue Partnership** for a **Blue Economy**; and its direct relevance to the **Declaration**. On 20-June-2017, or 5 months preceding the **Declaration**, China promulgated its **VISION for Cooperation under the Belt and Road Initiative** (the **VISION**). It is an updated version proceeding from the **2015 Visions and Actions on Jointly Building the Silk Road Economic Belt and the 21st Century Maritime Silk Road**. The **VISION**, together with the ASEAN **VISION 2025**, are both "acknowledged" in the **Joint Statement between ASEAN and China on Further Deepening the Cooperation on Infrastructure Connectivity** issued on 13-November-2017 as *strategic guiding documents*.

As an **economic development** belt, the **VISION** spells out in greater detail China's overall proposition "to synchronize development plans and promoting joint actions amongst countries along the **Maritime Silk Road**." **VISION** shall elicit the highest level of interest and attention from ASEAN as a regional organization; and the ASEAN must attribute due importance to the **VISION**. Firstly, because it is an economic development proposition that would benefit all individual member countries of the ASEAN as among countries along the 21st Century **Maritime Silk Road**. The **Maritime Silk Road** would facilitate outward economic and trade interaction between ASEAN and other economic groups along the maritime route. The **Maritime Silk Road** under China's Belt and Road Initiative must be accorded greater prominence in the ASEAN-China Dialogue agenda as it has strong impacts and direct relevance to the 3 pillars of AEC 2015 related to ASEAN **VISION 2025**.

Secondly, ASEAN is a maritime region striving for a maritime connectivity under AEC 2015 that spills over to or from China. The **VISION** is a **Blue Partnership** "together to build platforms for maritime cooperation ...as an effective way for promoting ocean cooperation ...to promote policy coordination, deepen common understanding, enhance mutual **political** trust, build bilateral and multilateral cooperative mechanisms ...to jointly participate in ocean governance." It entails an "all-dimensional, multi-tiered and broad-scoped partnership" in a "new era of increased focus and dependence upon maritime cooperation and development." All efforts are "in order to provide the institutional framework for ocean cooperation" to "jointly protecting and sustainably utilizing marine resources to achieve harmony between man and the ocean for common development and enhancement of marine welfare." **VISION** accords parallel importance to economic development and a sustainable coastal and marine environmental protection and management, in a synergized approach along the **Maritime Silk Road** and the wider maritime region it serves. The practical link between the **Declaration** and **VISION** is established under both instruments. The **Declaration**, ASEAN-China DOC-SCS, and **VISION** enhance the ocean as a source of life, sustainable livelihood, shared development, and for quality of life.

An ASEAN-China partnership for ocean governance under the Declaration and VISION for an Asian Century in a new world economic and political order. Underlining the **Blue Partnership** is what China calls The **Silk Road Spirit**, which is about "peace and cooperation, openness and inclusiveness, mutual learning and mutual benefit," expounded in the 10-page **VISION**. There is a political strand in the geo-economic line, nonetheless a truism relevant to the SCS embroiled in maritime jurisdictional disputes, that "**enhancing maritime cooperation also enables various countries to jointly tackle challenges and crises, thus promoting regional peace and security.**" Trans-border maritime issues are endemic to the wider maritime region traversed by the **Maritime Silk Road**, many of which are related to resource exploitations not necessarily connected to jurisdictional issues. Some even antedate UNCLOS, thus have historical roots. Many

are low-intensity resource competition that could be resolved through a re-established ancient Asian culture of negotiations applicable to present-day collective ocean governance cooperation. **VISION** seeks "mutual political trusts" to "promote harmonious co-existence."

Pursuing development cooperation would be further enhanced by "strengthening cooperation through existing multilateral mechanisms" and "boost cooperation with multilateral organizations" (IMO, FAO, IHO, IOC/UNESCO, International Ocean Institute). Peaceful dispute resolution and management resorting to consultations and negotiations would likely involve delving into technical and scientific parameters under UNCLOS Article 123 that would involve international organizations and NGOs as stakeholders. It would strengthen synergies between sustainable development and sustainable ocean governance. The political influence of States with competing self-interests must not be a factor in maritime dispute settlement.

This is the general exposition of the direction and approach of the **VISION**, which is the **assurance** of China's commitment to the **Declaration**. The **VISION** contains elements that reinforce the **Declaration**, the full and effective implementation of the ASEAN-China DOC-SCS, and the UNCLOS Part IX on enclosed and semi-enclosed seas. It is a detailed translation into a comprehensive regional ocean governance architecture that can consolidate elements contained in the **Declaration** and the ASEAN-China DOC-SCS under the umbrella of UNCLOS Part IX, in support of AEC 2015, ASEAN **VISION 2025**, and the Belt and Road Initiative. This direction could be the signal contribution towards a rules-based "progressive development" of an ASEAN-China partnership in SCS, and beyond.

The undertakings and commitments towards regional ocean governance contained in the strategic guidance documents can be consolidated into a coherent component "annex" to UNCLOS Part IX. It can also be taken as a purposeful modern-day adaptation of collective security in regard to an appropriate role of a de facto or informal regional organization (i.e., ASEAN-China) in resolving maritime disputes — a regional maritime security concern appropriate for regional action. This regional undertaking would be a more constructive alternative wisely attuned to a regional Asian culture and values, than the contrived and discredited recourse to a unilateral compulsory arbitration under UNCLOS. It would also lend substance and credence to the 1976 ASEAN Treaty of Amity and Cooperation in Southeast Asia (ASEAN-TAC) subscribed to by China, and to promote adherence towards dispute resolution or conflict management elements contained therein.

There is a clear and desirable connection linking the **Declaration**, the ASEAN-China DOC-SCS, and China's vision for a blue cooperation under the Belt and Road Initiative. The documents impact on the SCS, and dwells on cooperation among the same Parties to the said separate documents in regard to ocean governance cooperation transcending any political hindrances to pursuing practical cooperation activities. The **Declaration** reflects multilateral engagement in furtherance of the ASEAN-China DOC-SCS. The **VISION** for the Belt and Road Initiative on the other hand is a unilateral China undertaking for a wider and comprehensive ocean governance cooperation in support of a shared economic development and prosperity among countries along the **Maritime Silk Road**. The undertakings and commitments in the documents and the ASEAN **VISION 2025** as strategic guidance documents would be a comprehensive program planning and implementation under UNCLOS Part IX.

The agreed initial ocean governance cooperation called for in the **Declaration** appears more limited than the broad scope of China's vision for cooperation under the Belt and Road Initiative. The **Declaration** as the primary framework instrument for pursuing ASEAN-China maritime cooperation has a built-in provision for expansion of practical

cooperation activities that can be added incrementally to the scope of cooperation for the decade 2017-2027. This expanded envelope of activities under the **Declaration** could be in as many aspects of China's vision commitment under the all-embracing **VISION** for a **Blue Partnership** under the Belt and Road Initiative. A number of existing ASEAN-China maritime cooperation arrangements, and sets of separate bilateral arrangements between China and ASEAN member countries are catalogued in China's vision document. These bilateral arrangements, which involve all ASEAN member countries except Philippines, can be used as building blocks under the Declaration and UNCLOS Part IX.

Maritime jurisdictional issues as perceived hindrance to ocean governance cooperation in the SCS. Awareness of a brewing and escalating conflict situation in the SCS became palpable since the mid-1990s with the "Mischief Reef incident" involving China in the Spratly archipelago. The "incident" was seen as overt and proximate that raised tensions in the SCS, and was generally regarded as signaling China's "assertiveness" in a maritime dispute situation. It is also said that China's assertive moves in the Spratly archipelago to reconsolidate on what it considers its rightful entitlements in national territory, was further fueled by a vacuum created with the departure in 1991 of U.S. presence in the SCS through their military bases in the Philippines. This was in the wake of a catastrophic volcanic eruption that destroyed physical facilities in the military bases, a natural event almost coincidental with the termination of the Military Bases Agreement between Philippines and U.S.A.

The Mischief Reef "incident" was not an aggressive display of force but the setting up of a flimsy "fisherman's shelter" that when discovered, was announced by China to be made available in due time to fishermen of any nationality facing a distress situation in the SCS. China's move was taken as establishing an occupation or at least a "presence" in the disputed area. If it were indeed so, the excuse then relates to an ocean governance concern for fishermen and a proffered shared solution; thus planting the seeds of an idea for collective cooperation.

The underlying cause of the conflict situation was the unsatisfactory disposition, bordering on utter neglect or total indifference, at the United Nations Conference on International Organization (San Francisco, 1945) in regard to islands and other marine geological features in SCS. The post-colonial and post-WWII sovereignty issues in SCS thereafter remained festering and percolating. China's change of government, from the Kuomintang to the Peoples' Republic, raised regional apprehensions that translated into the "Domino Theory," triggering a free-for-all territorial grab. Remember: it was the Kuomintang Government era that first emphasized application of the "9-dashed line," and Taiwan is still in possession of Itu Aba, the largest island in the Spratlys. The current involvement of China merely arises from governmental succession as well.

Awareness was growing among countries surrounding the SCS that the latent conflict situation in the Spratly archipelago could hamper normal State-to-State interactions. These early apprehensions were accompanied by a sense that the escalating conflict situation might yet be deflected, and political tensions eased, through cooperative ocean governance activities among regional States, in particular among the "claimant countries," a point that has not been lost on the **Declaration** and **VISION**. Earlier, China had offered a "soft" formula to peacefully resolve the conflict situation, which is about "shelving" sovereignty issues among claimant countries and engaging in joint cooperation/joint development of marine resources, leaving the sovereignty issues to future generations who may have the wisdom to work out the solution.



(Part II to be featured in the Maritime Review's May-June issue)



MARITIME FORUM

The League organized the Maritime Breakfast Forum (MBF) series in 1995 as a venue for developing plans and programs to discuss and resolve issues in the maritime industry. The MBF is attended by stakeholders in the maritime sector and resource persons in the government and private agencies involved in maritime concerns. The MBF is regularly held, without fail, every month except December, hosted by different agencies and organizations in the maritime industry. Policies and projects presented during the forum are published in the Maritime Review for information and dissemination to the general public.



The Conflict in Korea – Rivalry of the Big Powers

by Brig. Gen. Manuel Oxales AFP(Ret)

"An enemy of my enemy is a friend."

--An Arab Saying

"There are no eternal friends, nor permanent enemies, only eternal and permanent interests."

--Lord Palmerston

Last September 2017, two heads of states — President of the United States Donald Trump and President of North Korea Kim Jong-un hurled invectives at each other and issued statements threatening to launch an attack on each other's territories. In November, during the ASEAN Summit in Manila, President Trump said he would strike back if U.S. or its allies (Japan and South Korea) would be attacked. The spectre of a nuclear war by the two countries, one, the most powerful and the other a new nuclear power, their capitals apart by more than 10,000 kms. has given much fear and anxiety all over the world.

Let us have a brief narration of the significant events in China, the Far East, and the Pacific from the turn of the 20th century that became the underpinnings of the division of Korea after WWII in 1945; the post-war world situation in Europe; China and Southeast Asia before the outbreak of the Korean War (1950-53); and thereafter. With this background, we can see a weak state rich in minerals, strategically located but hemmed in by much stronger neighbours, became a bone of contention for power and influence, the result of which was the beginnings of WWII in the Pacific, and after the war, an object of rivalry by the world's two Big Powers; and much later, with a rising Big Power.

Japan Opens Up to the West and Rises as a World Power. After the visits in 1853 of American ships led by Commodore Matthew Perry, Japan opened its ports to world trade and commerce. Emperor Meiji's reign (1860-1912) was the period of Japan's transformation from an isolationist feudal state to a western mold with its political, social and economic systems and practices. Japan became forward-looking in its foreign relations. She embarked on a rapid industrialization and eyed her closest neighbors for the needed raw materials. She wanted to become a world power and not be bullied by Westerners like Great Britain, France, Germany and Russia which had sliced off parts of Japan's territory over which they exercised degrees of sovereignty.

She adopted Prussian militarism, started organizing and equipping her armies and a navy that could rival the Royal Navy of England. At the close of the 20th century in April 1894, Japan fought China for supremacy and sphere of influence over the Korean peninsulas. After 8 months of land and naval battle, China sued for peace and conceded the Liaodong Peninsulas, south eastern Manchuria, and Formosa (Taiwan). It was Japan's first battle and victory as an emerging world power.



Japanese Navy Defeats Russian Fleet, Annexes Korea.

A decade later in May 1905, Japan, a rising naval power, decisively defeated the Russian Fleet in the Battle of Tsushima off the sea lanes between southern Japan and Korea. It was one of the greatest sea battles in modern times with some 130 ships of 20 battleships, cruisers, destroyers and other vessels engaged on both sides. Emboldened by her victories, in August 1910, Japan annexed her neighbor across the sea, the Korean peninsula, getting now a foothold from which she would embark on an invasion of China two decades later. Korea, then a unified territory and nation, experienced Japan's harsh and brutal colonization and occupation characterized by forced labor, enslavement, mass evacuation, and repression of her language and culture — a bitter past the Korean people would never forget. In exploit, Japan took 2 million Koreans as immigrants and workers in factories and recruited 300,000 soldiers to fight her wars in China, Burma, and the Philippines in WWII. Japan's annexation of Korea was her grand debut on the stage of building an empire. Riding on the crest of the nationalistic aspirations of colonized

peoples in Asia, she pledged to free them from the white man's burden and make them partners and beneficiaries of an East Asia Co-Prosperity Sphere she had envisioned as the sole Colonizer. Due to scarcity of oil and minerals for her factories, and food for a large burgeoning population, she coveted rich resources of her weak neighbors.

Japan Builds an Empire, Invades China, Occupies Manchuria.

In 1933, she invaded Manchuria, a territory northeast of China, a vast fragmented country ruled by warlords who ruled with almost absolute authority, its southern parts sliced off by western colonizers, Great Britain, France, Germany and Russia who governed like sovereign despots. For 14 years until her surrender in 1945, Japan occupied

Manchuria, exploited its rich mineral resources, and governed its people with such brutality the most infamous of which was the massacre of some 300,000 soldiers and civilians and rape of 20,000 women in Nanking, the memory of which would haunt and embitter the relations of the two countries up to the present.

Japan Attacks U.S., WWII Starts in the Pacific. Finally, Japan challenged U.S. domination of the Pacific, with a treacherous and surprise attack on Pearl Harbor, Hawaii, a U.S. territory, on 7-December-1941, simultaneously attacking British Malaya and the Philippines, a U.S. colony. The sudden attack impelled the U.S. to abandon her isolationist stance and forthwith declare war against Japan and the Axis Powers led by Germany and Italy. Encountering no heavy resistance, Japan successively invaded and occupied many Southeast Asian countries and islands. (At this time, war was raging in Europe after Germany invaded Poland on 1-September-1939 starting WWII; France had fallen, 300,000 British soldiers escaped capture and death through Dunkirk, France; and crossed the English Channel as German Panzer divisions assaulted and bombarded Stalingrad.)

Japan's Demise, Atomic Bomb Hastens Her Surrender. For 3 years Japan basked in her imperial glory and dominance. But soon overreach, big losses in aircraft carriers, fighter aircrafts, battleships, and limited resources took their toll. The U.S. control of the skies and sea lanes, superior air and naval power, weapons and industrial might, doomed Japan to inevitable defeat. By end-1944, she began losing conquered territories in the Pacific, including the Philippines. Told by Allies to surrender unconditionally as set forth under the Potsdam Declaration, Japan refused, determined to defend her homeland. It was not until two atomic bombs were dropped on the first week of August 1945 on her populous cities, Hiroshima and Nagasaki, that hastened Japan's surrender on 2-September-1945. With her surrender, Japan lost her conquered territories in China namely Formosa (Taiwan) and Manchuria; British colonies Malaya (Malaysia), Burma (Myanmar); Singapore; Dutch East Indies (Indonesia); French colonies Laos, Cambodia and Vietnam; U.S. colony Philippines; and other Pacific islands.

It was the first time in the history of mankind that such a powerful and destructive weapon was ever used in war. It resulted in the instant death of some 120,000, the figure to reach 200,000 Japanese in the next five years and 50,000 more burned, wounded, maimed and crippled for life physically and mentally. The cities were flattened to the ground and all that was left were a few standing steel frames and broken concrete structures. The world had not seen such destruction and devastation so horrible and terrible to imagine or describe.

U.S. and Soviet Union Divide Korea. After the war in 1945, the victorious allies principally led by U.S. and Soviet Union divided Korea along the 38th parallel into spheres of influence and control, the North under Soviet hegemony and control, and the South allied to U.S. and the west. The North became communistic and adopted a one party rule government, while the South became democratic and embraced free market economy and capitalist practices of the west. (The Soviet Union declared war only hours after the first atomic bomb was dropped on 8-August-1945. As planned, she invaded her neighbor to the east, China, to fight the Japanese Imperial army that had occupied Manchuria since 1933. To secure her flanks on the east, the Soviet Union signed with Japan a Pact of Neutrality on April 1941. France had fallen and the German armies were poised to attack, and did invade Russia in June. The entry of Soviet Union in the war sealed Japan's fate. She was left with no powerful broker for a negotiated peace with the Allies.)

A Weakened Japan. Under a Constitution crafted during a post-WWII government overseen by General Douglas McArthur, WWII Supreme Commander of the Allied Pacific and de facto ruler of Japan (1952-1955), Japan renounced war as a means of settling international

disputes. Since then, Japan's armed forces have been organized and equipped solely for self-defense, maritime missions, and prohibited from acquiring and building offensive equipment and weapons such as bombers, aircraft carrier, battleships, battleships, and attack missiles. The situation made Japan vulnerable to threats and actual attacks by North Korea, and thus became more dependent on the U.S., her former enemy, for the defense of her territory and survival of her people. These threats became real and frightening after North Korea hurled missiles over Japan's northern islands in August 2017, and warned to pulverize them.

Today, Japan has regained her imperial glory not by arms but through trade and export of her products. Toyotas, Sonys, Hitachis, teriyaki and sushi, and other popular products have conquered far more territories and gained wide acceptance by nations than her vaunted dream of an Asian Pacific empire. South Korea and Japan are now allies against a common enemy — North Korea. They are uneasy bedfellows as the Korean people from both South and North have not forgotten the bitter and cruel experience under Japan's harsh and brutal colonial rule. Ironically, U.S. and Japan, enemies in WWII, became allies 5 years later in the Korean war, and are strong allies until today.

Let us now review the global situation and significant events prior to the outbreak of the Korean War in 1950.

Post-WWII World Situation and the Cold War. At the end of WWII in Europe with the surrender of Germany on 7-May-1945, the U.S. and Soviet Union began to have their very serious and major differences. Germany was divided into East Germany under Soviet domain and control, and West Germany under U.S. and the Allies. The Soviets erected a wall in Berlin into zones of jurisdiction for the two Powers, which prevented Germans in the east from fleeing to the west. Countries in central and eastern Europe fell under Soviet Union domination and became communist. The Soviet Union's challenge to U.S. domination, influence, and supremacy in world affairs climaxed to a near nuclear exchange during the Cuban missile crisis of 1963.

(By 1991, Soviet Union had dismembered; its satellite countries separated and became republics; central and eastern European countries freed from Soviet hegemony shook off communism and adopted west European type of economy and government; the Berlin wall was toppled and Germany was once again reunited. What remains of the vast Soviet Union that stretched from the Urals to Asia in the Pacific, was Russia of the Tsars, and turned its back on Leninism-Marxism, embraced free market economy, capitalism and multi-party democracy.)

China Turned Communist, Southeast Asia Imperilled. In another part of the globe, China in the Far East, communism had taken hold. China, a U.S. ally in WWII against Japan, was torn by a civil war that started in the 1930s between the Nationalist government of General Chiang Kai Sek and the communist armies led by revolutionary leader, Mao Tse Tung. (They had a temporary truce during the war and united to fight the Japanese who have occupied Manchuria.) By 1949, Mao had consolidated his power over China and unified its once fragmented country. The Nationalist Kuomintang government, written-off by U.S. as irretrievably lost to communism, was driven off to the tiny island of Taiwan. In Southeast Asia, communism was getting inroads and subverting the governments of the Philippines, Indonesia, Malaya (Malaysia), Burma (Myanmar), Cambodia, Laos, Singapore, and French Indo China (Vietnam). With countries in eastern Europe under Soviet Union domination and control, China turned communist and many governments of Southeast Asia under peril, U.S. President Harry Truman announced his doctrine of 'containment of communism,' the policy that would guide U.S. direct involvement in North Korea (1950-53) and Vietnam, from the late 60's to the mid 70's, and in other parts of the globe.

The Korean War (1950-53). This was the situation in central and

eastern Europe. and in east and southeast Asia and the Pacific when on 25-June-1950 about 75,000 troops from North Korea invaded South Korea crossing the 38th parallel. Forthwith, the UN Security Council organized a coalition force principally led by the U.S. which contributed a large air, and naval and ground personnel totalling of 200,000 soldiers, commanded by General Douglas MacArthur. (The Philippines contributed three combat battalions of 7,000 military personnel equipped and supplied by U.S. and fought side by side with the Americans. Since the defense of Bataan in WWII in 1942 against the Japanese invading army and during the Korean war, the Philippine army has had no experience in conventional war where both sides engage in wide open battlefield in mass formations involving ground, air and naval arms, employing tactical maneuver and firepower to destroy each other's capacity and will to fight.)

U.S. Signs Defense Pacts with Philippines and Japan. Fearing a raging conflict between the two Koreas might spill overseas and involve the Philippines and Japan over the presence of American military forces on their territories, their governments saw the an urgent need for protection from U.S. On 30-August-1951, a year after the Korean War broke out, the governments of U.S. and Philippines signed a **Mutual Defense Treaty**, with the principal provision stating, "*Each Party recognizes that an armed attack on either Parties in the Pacific area would be dangerous to its own peace and security and would act to meet the common danger in accordance with its constitutional processes.*"

Obviously, the Philippines needed protection since Clark Air Base in Pampanga and Subic Naval Base in Zambales were used extensively for the training, assembly, logistic and maintenance support of U.S., and military operations in Korea. Also, the Philippines was battling a countryside communist inspired rebellion in Central Luzon. A month later on 8-September-1951 U.S. and Japan signed a Mutual Security Treaty which allowed U.S. to station American soldiers on Japanese territory for the defense of Japan and for military operations in the Far East. How valid today what British Prime Minister Lord Henry Palmerston said in 1842 before the Parliament, "*There are no eternal friends, nor perpetual enemies. There are only eternal and perpetual interests.*"

The alignment and realignment of powerful states before, during WWI and WWII and thereafter confirmed that statement. In WWI (1914-1918), Japan sided with the Allies [U.S., Great Britain, France, Italy and Soviet Union] against the Central Powers [Germany, Austria-Hungary and the Ottoman Empire of Turkey]. In WWII from 1939 to 1945 Italy and Japan sided with Germany against the Allies [U.S., Great Britain, France, Soviet Union, Turkey and China]. Five years after the end of WWII in the Korean War (1950-1953), the Soviet Union and China, both allies of U.S. in WWII, sided with North Korea against the major participants — U.S. and South Korea. (A further affirmation of Lord Palmerston's statement is familiar: The Filipinos and Americans fought the Japanese in WWII. Today their respective countries are close friends and allies. Japan is the biggest benefactor of the Philippines in terms of economic aid and investment. U.S. is the strongest protector of Japan which received much more military assistance from her former enemy than an ally and ex-colony. That is 'real politik'.)

By September 1951, U.N. forces made a surprise amphibious landing at Inchon Bay, west of Seoul, trapping the bulk of North Korean army south of the 38th parallel. Advancing rapidly towards the north, U.N. forces were about to reach Yalu River, the border of China and North Korea, when some 130,000 Chinese troops crossed the river to aid the beleaguered North Koreans. It was China's support for a communist brother and reciprocity for North Korea sending 60,000 soldiers to fight Mao's civil war against the U.S. backed Kuomintang army. The UN made a hastily organized retreat by sea and land as the well-equipped and numerically superior Chinese troops advanced rapidly and reclaimed lost territories of North Korea.

It was during this critical period that MacArthur recommended the bombing of Chinese troops north of the Yalu River. He felt he could not win the war if his arms were tied and the enemy given sanctuary. But President Harry Truman and his Joint Chiefs of Staff felt that American people had just come out of WWII weary and exhausted, and would not want young American men sacrificed for a country remotely connected to their homeland. Extending the war farther into the vast China territory would widen the conflict into a land warfare that would involve a large number of American troops.

(The Soviet Union at the closing weeks of WWII deployed 1.7 million soldiers, 10,000 tanks, vehicles and 25,000 artillery pieces to fight 700,000 Japanese soldiers who had occupied Manchuria, a territory less than 1/5 of China.) Truman relieved MacArthur, an adherent of Clausewitz' total war doctrine that posits the employment of weapons of war against the entire resources and support structure of the enemy. He was not ready for the concept of limited war, which meant a limited geographical scope, size, and magnitude of forces employed but with broad achievable political goals and U.S. strategic interests upheld. This was exemplified decades later in U.S. involvements in conflicts in Iraq, Kuwait, Syrian, Afghanistan, and countries in Latin America and Africa.

Korean War Ends in an Armistice. With U.N. and South Korean forces pushed back below the 38th parallel by the combined Chinese and North Korean troops, and American casualties rising to 40,000 dead and 100,000 wounded, American people wanted an end to U.S. involvement. Finally representatives of the U.N. coalition forces led by U.S., the North Korea Peoples Army and Chinese Volunteer Army signed an Armistice on 27-July-1953, agreed to a ceasefire, and a creation of Demilitarized Zone 2.5 miles wide along the 38th parallel. South Korea did not sign the armistice. Despite urgings from the UN, no peace settlement exists between the two Koreas. As an inconclusive war with neither victor nor loser, neither side could claim a gain in territory. Until today, no peace agreement has been signed. Technically, South Korea and North Korea are still at war. (In contrast, after North Vietnamese guerillas defeated French colonial forces in the famous Battle of Dien Bien Phu in 1954, France signed the Geneva Accord and gave up her colony. After North Vietnam forces captured Saigon in mid-1975, she annexed South Vietnam thus ending the war, and U.S. involvement in Vietnam. South Korea sent 320,000 combatants to support U.S. in Vietnam. The Philippines sent 2,000 civic action personnel, gave asylum and homes to 10,000 Vietnamese refugees, an act that endeared the Filipinos to the Vietnamese people.)

Violations of the Armistice Agreement and Arms Build-Up. Both parties in the agreement claimed the other side violated a key provision of the Armistice Agreement para. 13(b) which mandates that each side is bound not to introduce new weapons in each respective territory except on a piece-to-piece basis as replacement of existing ones.

In 1957, the U.S. claimed North Korea put in new weapons and equipment in violation of para. 13. The U.S. said it was no longer bound by this provision and installed Honest John atomic canons in South Korea. A year later, U.S. sent in nuclear tipped Matador surface-to-surface missiles that could reach China and Russia. In response, North Korea positioned her conventional forces proximate to the Demarcation Line about 18 miles from Seoul so that in the event of an attack, civilians from the South would also be hit. She dug tunnels as entry passages of her army to the South, which the U.S. says violates the Armistice Agreement. Seeking protection from possible attack, North Korea signed in 1961 with China the Sino-North Korea Treaty of Friendship and Cooperation, obligating each other to come to assist and defend in the event of an unprovoked aggression. North Korea also sought assistance from Soviet Russia and China for nuclear capability and was refused, but later was granted for peaceful use. By 1980, North Korea got assistance from other countries and started developing nuclear weapons capability. In 1999,

U.S. installed Patriot missiles in South Korea, which were capable of intercepting enemy missiles. In 2006, North Korea declared it exploded its first nuclear weapon and tested six in total. In 2010, she became a full-fledged atomic power. In 2016, she exploded a hydrogen bomb. In 2017, she launched its first ICBM capable of carrying a nuclear weapon able to reach continental U.S. In response, U.S. flew B-52 bombers and Stealth fighter jets over North Korea, and held ground and naval exercises with South Korea. U.S. announced setting up in South Korea the THAAD (Terminal High Altitude Area Defense) systems designed to shoot down missiles within short, medium, and intermediate ranges. The arms build-up on both sides escalated into nuclear threats. Last August, North Korea hurled missiles over the northern islands of Japan and landed on the sea. In September, she threatened to send missiles over Guam, to which the U.S. warned it would strike back and destroy North Korea's regime.

Rivalry of Big Powers. The division of Korea into North and South in 1945 was the undoing of two remaining Big Powers after WWII — U.S. and the Soviet Union (Russian Federation). A new Figure has entered the equation — China, an awakened Dragon, a rising and dominating Power, that can challenge U.S. presence in the Pacific. The U.S. needs China, the second largest economy of the world, to rein in North Korea's nuclear ambitions. China sanctioned her communist neighbor by curtailing imports of coal and other mineral ores and exports of fuel. She banned domestic banks from financing materials and equipment for nuclear weapons development.

If sanctions fail there is the danger of a Thucydides trap, as one Harvard professor calls it, named after a Greek historian who wrote in the **History of the Peloponnesian War** 450 B.C. that a rising power (Athens) went into conflict with an already dominant power (Sparta) as the two had opposing interests that made the conflict inevitable. Sparta was hurt tremendously, paving the rise of a new power 30 years later. The reference to ancient history may not apply. But two events, one at the turn of the 20th century and the other in a not too distant past happened that triggered the U.S. entry into war. The first was the 1898 internal explosion of the USS Maine moored in Havana Harbor that led U.S. to intervene in the Cuban people's independence struggle against Spain; and months later involved itself in the Philippine revolution against Spain. The second was the 1964 firing on two U.S. destroyers at Tonkin bay by North Vietnamese gunboats; and led U.S. to escalate involvement in a decade-long war that ended with her departure in 1975.

Other pitfalls, that of the mind, may happen: Misreading each other's intentions, underestimation of one's capabilities, and inadequate risk assessment or miscalculations.

Hopefully, these missteps would not happen after President Trump's meeting with President Xi in Beijing last November 10 on his way to Manila for the ASEAN Summit, and thereafter.

Only the two Big Powers in Asia-Pacific can lead the world in easing anxiety and fear and in de-escalating tension arising from exchanges of threats — one from a nuclear Power and another that has just become nuclear.



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Damen Marine Aggregate Dredger (MAD)

Marine Aggregate Dredger to Futurize Fleet

by Damen

On 19-December-2017 in Southampton UK, **Laurence Dagley**, Director, **CEMEX UK Marine Limited** signed a contract with **Frank de Lange**, Regional Sales Director of the **Damen Shipyards Group** for the delivery of the first **Damen Marine Aggregate Dredger (MAD)**. The vessel, which will be built at **Damen Shipyards Galati** in Romania, is designed to extract sand and gravel from the seabed up to depths of 55 meters, including in the challenging conditions experienced in the North Sea.

The **MAD** vessel is the result of extensive market research and customer consultation. A new, future-facing vessel of this type is aligned with an aggregate industry faced with an aging fleet of vessels and an increased focus on marine activity.

CEMEX UK is a leader in the building materials industry with over 3,000 employees, supplying aggregates, cement, concrete and other building solutions. The company has a pre-existing relationship with Damen, having utilized the service of **Damen Shiprepair Amsterdam** for maintenance of their vessels.

When approaching **Damen**, the client had a clear set of requirements. **Laurence Dagley**, Director, **CEMEX UK Marine** explains: "We wanted a cutting edge design, something for the 21st century with all the safety, efficiency, environmental and on board comfort credentials this implies. Achieving a maximum uptime within what can be a challenging working environment is also important to us. Damen accepted the challenges that we gave them, delivering a robust yet innovative design that demonstrates the combined experience and ingenuity of our respective teams. Proudly wearing **CEMEX** colors, this new ship represents the start of our ambition to modernize our fleet over the coming years, to serve the increasing need for marine dredged aggregates in the UK."



Frank de Lange (Regional Sales Director, Damen Shipyards Group) and Laurence Dagley (Director, CEMEX UK Marine Limited) signing the contract.

The **MAD 3500** design has the optimal balance between payload and efficiency within limited dimensions. With a specific lock passage limiting the vessel's overall length to 103.5 meters, a dead weight of just under 7,000 tons and a speed at loaded draught of approximately 12 knots are still achieved. In comparison to **CEMEX's** current vessel, **Sand Heron**, which the new ship will replace, this translates into an additional 20% of aggregates that can be delivered per trip.

The vessel will boast **Lloyd's Register** ECO-notation, courtesy of its green credentials as well as a CAC-3 notation offering a high standard of crew comfort.

The optimal uptime the client required comes courtesy of a number of features. Included is exceptional sea-keeping behavior, offering crew comfort in rough seas and the capability to work in heavy weather conditions. The bow is enclosed, protecting deck equipment and reducing green water ingress into the cargo hold. A user-friendly approach to maintenance also helps to maximize uptime. All dredge pipes are situated above main deck level for safety, as well as easy inspection and crane reach. Besides this, the modular construction of the **Damen** designed and built dredge systems makes for the easy replacement of wear parts on the piping and screening installation.

Damen regional sales director, **Frank de Lange** says: "We are honored to work with **CEMEX** on this innovative project. At **Damen**, we are always happy to embrace a challenge and this vessel, which includes a number of never before seen features, is a good example of that. We feel confident that the **MAD** has all the attributes required to bring the aggregate dredging fleet up to date and into the future. We're looking forward to seeing the first **MAD** in action at the end of 2019." ⚓



CSL Australia's DIANA ISLAND. Photo by: Les Blaire. Courtesy of Shipspotting.com

ITF: Filipino Seafarers on CSL Australia's DIANA Ship Underpaid

by World Maritime News

The **Filipino seafarers** working onboard the Bahamas-registered Flag-of-Convenience (FOC) vessel **Diana**, owned by **Canadian Shipping Lines (CSL) Australia**, are underpaid, the **International Transport Workers' Federation (ITF)** said.

The union informed on Tuesday that it had inspected the Handy bulk carrier in Melbourne having received a tip-off.

The **Filipino seafarers** are effectively operating full time on the Australian coast, according to the union. **CSL** has recently increased the use of foreign seafarers in coastal trades replacing Australian crew.

Under coastal trading rules introduced in 2012, foreign crew must be paid award rates as the vessel is working more than two domestic voyages in Australian waters.

As informed, **CSL Australia** has so far refused to sign an industrial agreement guaranteeing international minimum standards on its fleet of deregulated FOC vessels: **Acacia**, **Adelie** and **Diana**.

"Under Australian legislation all foreign workers must be paid award rates while operating in the local trade."

*"The ITF has contacted the **Fair Work Ombudsman (FWO)** to investigate further but we are yet to receive a response."*

"These are vulnerable foreign workers used by an Australian company to replace Australian national seafarers working exclusively in the Australian trade."

*"The ITF demands the government investigates these clear breaches of our trading laws immediately and prosecute the perpetrators," ITF Australia Coordinator **Dean Summers** said.*

When approached by **World Maritime News**, the **CSL** spokesperson dismissed the allegations.

"CSL refutes the allegations made by the Australian ITF representative. CSL is compliant with all wage and employment requirements applying to all of its seafarers throughout all of its operations, at all times," the CSL spokesperson said.



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worldmaritimeweb.com/archives/238654/itf-filipino-seafarers-on-csl-australias-ship-underpaid

New Warning on Hazards of Carrying Bauxite by Ship

by IMO News



IMO has issued a new warning that bauxite may become unstable when carried in bulk on a ship, potentially causing the vessel to capsize. Bauxite is one of the world's major sources of aluminum with around 100 million tons (MT) transported annually by sea. In 2015, a bulk carrier sank while transporting **bauxite**, with the loss of 18 seafarers. Research presented to an **IMO** sub-committee found that certain forms of bauxite with a large proportion of smaller particles could be subject to a newly-identified phenomenon of "dynamic separation" when there is excess moisture in the cargo.

In such conditions, a liquid slurry (water and fine solids) can form above the solid material, according to the report of an international **Global Bauxite Working Group (GBWG)** on *Research into the Behaviour of Bauxite during Shipping*. The resulting free surface effect of liquid sloshing about could significantly affect the vessel's stability, leading to the risk of the ship capsizing.

IMO's Sub-Committee on Carriage of Cargoes and Containers (CCC4), which met 11-15 September at **IMO HQ**, raised awareness of the potential risks posed by moisture and provided new guidance on carriage of bauxite, in the form of a circular aimed at shippers, terminal operators, ship owners, ship operators, charterers, shipmasters and all other entities concerned.

The circular requests that extreme care and appropriate action be taken, taking into account the provisions of relevant **IMO** instruments, when handling and carrying bauxite in bulk.

The circular takes immediate effect, ahead of the next scheduled adoption (in 2019) of the new test methods and relevant schedules for bauxite cargoes during the routine scheduled updating of the **International Maritime Solid Bulk Cargoes (IMSBC) Code**. The **IMSBC Code** is the industry rulebook on how to deal with bulk cargoes.

The CCC.1 circular updates a previous circular on carriage of bauxite and invites governments to note that some bauxite cargoes (specifically those with a larger proportion of smaller particles) present a risk caused by moisture and should be treated as "Group

A" cargoes. Excess moisture in such cargoes can lead to a free surface slurry. This can cause atypical motion of the ship (wobbling). The master should take appropriate action in the event of this possible sign of cargo instability.

The circular includes the draft Test Procedure for Determining the Transportable Moisture Limit (TML) for bauxite of "Group A" (Bulk Cargo Shipping Name "BAUXITE FINES"); and draft amendments to the existing individual schedule for bauxite of "Group C" (bauxite with a lower proportion of smaller particles with a degree of saturation by moisture not liable to reach 70%).

Bauxite is a rock formed from weathering of either silicate rocks (granite/basalt) or carbonate rocks (limestone/dolomite). Bauxite is found mainly in tropical and sub-tropical areas such as Africa, South America, and Australia with some small deposits located in Europe.

A total of approximately 100 MT of bauxite is transported by sea annually. Brazil and Guinea dominate seaborne supply and over 30 MT per annum each. Australia supplies over 20 MT per annum. Small amounts are supplied from Sierra Leone, Guyana, Ghana, and other shippers.

Global Bauxite Working Group. There is a long history of safely shipping bauxites over many decades and problems and accidents resulting from carrying **bauxite** cargoes are extremely rare. However, after the loss of the bauxite-carrying vessel, the **Bulk Jupiter**, in early 2015, the global bauxite industry was requested by **IMO** to undertake research into the behavior of bauxites during ocean transportation. The global bauxite industry responded by forming the **GBWG** to conduct research on the behavior and characteristics of seaborne traded **bauxites** to inform the **IMO** in relation to the safe shipping of bauxites.

The **GBWG** membership consists of a wide variety of key disciplines, including shippers (miners), transporters (ship owner/operators) and users (alumina refinery operators) as well as various consultants with backgrounds in geotechnical and hydraulic engineering, maritime science engineering, and real world operations. ⚓

A-Suite Brings AI to Maritime to Reduce Human Error

by Transas Marine News

Transas has launched its first package of applications built on **THEESIS**, a unified cloud-based platform for managing operations across the full breadth of the maritime ecosystem. The A-Suite package sets a new precedent by utilizing the latest in machine learning techniques to reduce the potential for human errors on the bridge or poor decisions elsewhere in the vessel operational chain. In addition to the officers and crew working on board ships, the benefits of **A-Suite** is available to personnel managing VTS systems, those running shore-based fleet operational centers or training facilities, allowing them to participate in real-time decision-support and post-voyage analysis.



"Technology shouldn't be an end in itself – but a tool to achieve an end," said **Transas** CEO **Frank Coles**. "We are proud to go beyond the hype by bringing to market a set of revolutionary AI-powered e-navigation tools apposite to the needs of modern ships operating in an increasingly automated and digital world."

The **Transas A-Suite** employs machine learning techniques to de-risk vessel operation on the bridge, at fleet operation centers and in **VTS** centers. Algorithms detect anomalies in the behavior of the human operator wherever they are in the operational chain and raise the alarm before the consequences of a course of action or momentary lapse in attention become irreversible. The first version of the package comprising three core modules – **Advanced Intelligent Manoeuvring (AIM)**, **Advanced Intelligent Diagnostics (AID)**, and **Advanced Intelligent Routing (AIR)** is now available and services operational in the coming months.

AIM is a track prediction system and anti-collision support tool designed to improve situational awareness and reduce the probability of officer inattention or poor judgment leading to an incident. Using data previously collected on the actions and behavior of personnel sailing in the same location, together with a sophisticated hydrodynamic model of the vessel and a programmatic abstraction of the anti-collision regulations, the system provides advanced decision support.

AID detects anomalies and provides decision-support in real-time or during post-voyage analysis. **AID** detects excessive or unusual maneuvering patterns, keeping an eye on parameters such as speed and rate of turn, and unexpected deviations in fuel consumption. By taking data from conventional equipment and environmental sensors, and recording how and when operators interact with vessel controls,

AID marks a major step forward in real time operational monitoring.

AIR creates a platform for voyage planning and optimization based on an extensive set of parameters. The application absorbs real time metocean data, hazards, hydrodynamic performance, as well as taking account of the impact of known and anticipated vessel traffic along the route and at bottlenecks.

These are supported by **Advanced Data Delivery (ADD)** and **Advanced Remote Maintenance (ARM)**. **ADD** frees deck officers from laborious tasks of updating special electronic charts (SENCs), weather data, and other navigational safety notices. It creates an audit trail for shore-based offices ensuring managers are fully informed of a vessel's navigational status for compliance purposes. **ARM** provides remote diagnostics and performance analytics for bridge and satellite communication equipment. **ARM** backs-up key software together with its configuration data and parameters to **Transas Cloud** allowing rapid restoration of service in the event of system failure.

A-Suite features a sophisticated e-learning solution, **Advanced Remote Training for Seafarers (ARTS)**, with online access to manufacturer-approved, type-specific training courses for **Transas ECDIS**. This is fully compliant with **SOLAS**, **ISM**, and **STCW** requirements. **A-Suite** establishes critical links between vessels and shore-based offices, vessel traffic control centers and training institutions and embodies the core principles of **THEESIS**, **Transas'** vision of a harmonized ecosystem, meeting the needs of multiple operational stakeholders simultaneously.

Resilience, security and deep data integration are fundamental to the **THEESIS** concept and **A-Suite**. As a cloud-based technology, the applications can be accessed from ship or shore. Recognizing the reality that outages in connectivity do happen at sea, ship-based installation contains an onboard pre-processing data management server, so that applications and decision support can continue to operate without a live connection to the cloud.

The **THEESIS** network architecture has been designed from the ground up to be secure. Because it encompasses the entire vessel operational ecosystem it is possible to incorporate encrypted channels for all data delivery rather than rely on conventional email for the exchange of potentially sensitive operational data, route plans, or chart updates. **A-Suite** is not exposed to the vulnerabilities inherent in email.

At the heart of the **A-Suite** is the same software kernel that powers **Transas'** industry leading **ECDIS** solutions. This gives the applications direct access to all user interactions and the various sensors on the bridge in real time. This level of integration and availability of data allows **A-Suite** to derive insights that would not be possible with bolt-on standalone third-party solutions.

"When we first started to envisage how ships would be operated in the future, we realized there would be much greater collaboration between ships, back-offices, traffic control centers. With **A-Suite** built a set of intelligent decision support tools for working in this shared environment," explained **Coles**.

The 3-day **Transas Global Conference 2018** in Vancouver in March will provide greater insight into the **A-Suite**, its tools and capabilities in the eco system. ⚓

How Drone Technology is Improving Safety in the Maritime Industry

by Martek Marine

UAS advancements are increasingly impacting our everyday lives, from agriculture and filmmaking to security and communications down to the products we have delivered. Its advances present major changes for the future of the maritime industry. As disruptive as the smartphone has been to the world, the use of drones will revolutionize the landscape of ship operations for years to come. Drones are quickly becoming a regular tool in the maritime industry, although developed for government and military operations, over the next half a decade, growth in the commercial and civilian drone industry is expected to surpass defense industry, with an estimated value of \$127 billion. As the development of UAS technology gathers momentum, we're going to see UAS used more and more in maritime applications than ever before. Drones can safely go where humans can't. Improving safety, reducing costs, speeding up processes and making access challenges a breeze, are just a handful of the benefits of using drones in the maritime industry.

Improving Ship Safety & Speeding up Maintenance & Repairs



Replacing the need for human inspections, routine maintenance can be monitored remotely in real-time by surveyors, providing instant feedback to the vessel or offshore Superintendent. This, in turn, reduces costs, increases efficiency and significantly reduces the risk to human life during essential maintenance.

Tank inspections are common tasks onboard vessels and are always a risk to the participating crewmembers. Dangerous gases are the biggest killer at sea: often, a crewmember will enter an enclosed space – unbeknownst to them, that it contains a noxious gas. Unfortunately, often they will become unconscious and suffocate. However, this can be completely avoided by the use of a drone. Easy and quick analysis will determine the safety of the tank for entry – saving lives with just a matter of minutes of drone flight. Equally, video feedback can be used to identify if human inspection is even required, completely removing any threat to human lives.

Aside from the safety and efficiency aspects, shipping companies also want to avoid typically three things: whales, icebergs and pirates. Since the advancements of drones have allowed imagery from over 30km away, dealing with the task of hazard avoidance has become far easier for commercial shipping companies.

Reducing Costs

Drones can be operated by one person without any extensive safety equipment, meaning the costs associated can be significantly reduced. UAS are so quick to deploy in comparison to traditional methods, reducing downtime.

The use of drones for delivery has become a fast-approached topic in the maritime industry, a topic that has now become a reality. The use of drones, rather than launch boats could help to reduce costs by up to 90% for vessel operations and ship managers. Research has shown that on average, the cost of a launch boat is \$1,500 per hire. However, it can be as much as \$4,000 depending on port locations, and it's been estimated to save the entire industry upwards of \$675 million.

Making Access Challenges a Breeze



Drones can be flown into high up or hazardous areas to check the structural integrity of a vessel or of loaded cargo. Whereas previously this high-risk job was down to a crewmember, now a drone can be flown to the inspection point, and with a high definition video feedback to the control centre, not only does this mitigate any risk, it is also far quicker.

While much has been made of re-supplying ships whilst at sea, especially since the evolution of drones, this task has become a far simpler concept. Although initial tests show multiple hurdles have yet to be overcome to make this option of delivery viable — Are the use of drones disrupting the maritime industry as we know it? Since the first trial in January 2016, when a drone made an at-sea delivery, the industry rut began to budge. Although only travelling a distance of 247 meters and was launched from a smaller tug-boat rather than from the shore, the optimism and promising signs were ever present. However, there are still far more speed bumps to overcome, from improving the distance a drone can travel to its ability to handle heavy and large loads. Until these progressions take place, UAS technology is currently primarily being focused on inspection and surveillance.

Drones are only one small part of the bigger puzzle in helping transform and disrupt the maritime industry. What do we know? That UAS play a critical component in the future of the maritime industry in increasing its effectiveness, efficiency and safety and before we know it, the maritime industry will be altered forever. ⚓

Combat Management Systems and War-Fighting Attributes of Frigates

by: Captain Tomas D Baino PN (Ret) Naval Architect



Incheon Class Frigate

INTRODUCTION

The Philippine National Defense has signed a contract with Hyundai of South Korea for the construction of two units of the Incheon Class Frigate last 24-October-2016 at the cost of US\$337M to modernize the capability of the Philippine Navy's surface combatants.

This article is a guide to craft the circular of requirements for the Frigate in order to enhance its survivability in combat.

WHY A FRIGATE?

A frigate represents lower investment in terms of cost and displacement compared with a full-size destroyer, making frigates very attractive to many navies. Frigates attain almost the same effective combat capabilities in anti-surface, anti-submarine, and anti-air warfare but with lower operating and maintenance costs.

In terms of displacement, the frigate is between a destroyer and a corvette. Capability-wise, its capability is in this order of priority: (1) anti-air; (2) anti-submarine; and (3) anti-surface.

MODERN WAR AT SEA

Recent conflicts have provided sharp reminders that a surface combatant ship must be able to withstand certain battle damage level, and prevent complete loss of its war-fighting capability. This means survivability.

Enhancing ship survivability has been a focus of several studies on naval warfare. The destructive effects of new weapons launched from the air, surface, and subsurface platforms affected ship designs and ship

defense systems. To optimize survivability naval planners must consider some parameters resulting from a number of naval clashes worldwide.

THE FALKLAND WAR OF 1982



HMS Ardent (F184)

Royal Navy frigate **Ardent** was attacked by at least three waves of Argentine Ground Fighter Attack Aircraft (GFA). The air strikes caused **Ardent** to sink. The first attack took place when a lone A-4 Skyhawk dropped two bombs, which straddled the Frigate but failed to explode.

A second coordinated air strike composed of three Skyhawks and IAI Daggers pressed the attack. The only weapons of the **Ardent**, which reacted to the attack, were 20mm Anti-Aircraft guns. The Sea Dart anti-aircraft missiles system failed to lock-on. The 4.5-inch gun was too slow, ran out of arc of fire, and failed to hit the Skyhawk. Two bombs hit

the ship. The auxiliary machinery room and power switchboard were severely damaged, and the helicopter hangar were in flames. The loss of power caused by damaged switchboard rendered the ship's major combat systems inoperable. Communications were cut off, making the ship defenseless. Thus, the Skipper ordered, "Abandon Ship."



HMS Antelope (F170)

On 23-May-1982, the **Antelope** came under attack by four A-4 Skyhawks from Grupo 5 of the Argentine Air Force. **Antelope** was hit by a bomb at the starboard quarter but did not explode. The bomb disposal team made an attempt to defuse the bomb. However, it exploded. The ship was torn open from the waterline, and the blast started major fires in both engine rooms that spread quickly. The starboard fire main was fractured, and the ship lost all electrical power that the Skipper ordered, "Abandon Ship." Within 5 minutes, after the Commanding Officer was last to abandon ship, the missile magazine room exploded. The explosion fire continued all night.



HMS Coventry (D118)

On 25-May-1982, the Argentine Air Force A-4 Skyhawk sunk the **Coventry**. The ship was fitted with Sea Dart surface-to-air missiles to counter threats from the air. The Sea Dart is constrained by a limitation on its firing capacity and reaction time. **Coventry** fired a Sea Dart surface-to-air missile but missed the attacking aircraft. **Coventry's** targeting radar failed to lock-on, and the tracking system locked down during the attack and could not be reset before the attacking Argentine A-4 Skyhawk released their bombs. However, the attacking A-4 Skyhawk missed the targeted **Coventry**.

Coventry used the 4.5-inch gun and small arms against the attacking aircraft. The 20mm Oerlikon canon jammed, leaving the ship with only rifles and machine guns to defend itself against the A-4 Skyhawks. The ship greatly suffered from 3 bombs that hit it above the waterline,

exploding beneath the computer room, and destroying the Combat Information Center. **Coventry** then began leaning portside. Within 20 minutes, the Skipper ordered, "Abandon Ship."



HMS Sheffield (D80)

On 4-May-1982, two Argentine Naval Aviation Units consisting of super Étendard (3-A-2002 and 3-A-2003) fighter aircraft, both armed with Exocet anti-ship missiles (AM 39) attacked the **Sheffield**. The **Sheffield** picked up the signal of the incoming Exocet missile but was late by 5 seconds. The Exocet (AM 39) hit amidship, creating a hole approximately 2.4m above the waterline, tearing a gash in the hull. The damage caused by the missile impact severed the high-pressure fire main pipe. The resulting fire caused by the burning propellant ignited the diesel fuel oil from the ready-use tanks in the engine room. As **Sheffield** was ablaze, the Skipper ordered, "Abandon Ship."

THE PERSIAN GULF WAR IN 1987



USS Roberts (FFG-58)

On 14-April-1988, the USS **Roberts** was deployed in the Persian Gulf, and struck an M-08 Naval Mine in the central Persian Gulf. The mine blew a 4.6m-hole diameter in the hull, flooded the engine room, and rendered 2 gas turbines out of operation. The blast broke the keel of the ship. Such structural damage is almost always fatal to most vessels. The ship survived and was brought back to Portland, Maine, USA then carried back by Dutch Shipping with a cost of \$1.3M. Repairs and damages reached \$89.5M at the shipyard. The ship was decommissioned on 22-May-2015 and has been slated for dismantling.



USS Stark (FFG-31)

On 17-May-1987, an Iraqi Mirage F1 aircraft hit the **USS Stark** with 2 Exocet Anti-Ship missiles. The first missile was fired at stand off range of 22.5 nautical miles (41.7 km) and the second missile at 15.5 nautical miles (28.70 km). The ship's radar did not detect the missiles. The lookout crew gave the warning only moments before one of the missiles hit **USS Stark**.



USS Cole (DDG-67)

On 12-October-2000, the **USS Cole**, while refueling at Yemen's Aden Harbor, was attacked by Al-Qaeda. A small fiberglass boat loaded with C4 explosives and 2 suicide bombers approached the portside of the destroyer and exploded, creating a 12m x 18m gash on the ship's portside hull. The blast penetrated the mechanical space, violently pushing the deck up.

Characteristics of Threat. There are various threats to a Frigate. Some of the greatest assortments of weapons platforms that can interfere in the survivability of the Frigates are:

- ♦ Ground Fighter Attack Aircraft (GFAA) – capable to launch multiple and coordinated attack at the speed of Mach 2 (ratio of speed of sound versus speed of aircraft), and can launch anti-shipping missiles at a stand off distance of 50 km.
- ♦ Attack Helicopter – capable to launch multiple and coordinated attacks with anti-shipping missiles at a stand off distance of 50 km. Helicopters are difficult to destroy, relatively slow, but very agile.
- ♦ Shallow Water Attack Submarine – capable to launch wire-guided torpedoes or with homing acoustic guidance system from a distance of 8-10 km, and torpedo speed of 40 knots in extremely shallow waters where it is very difficult to detect and conclude a deliberate attack.
- ♦ Fast Attack Missile Boat – a single or multiple attack craft can attack Frigates from different directions, and launch anti-shipping missiles with an active radar-infrared homing system.
- ♦ Suicide Terrorist – A Frigate is a sitting duck while docked at the pier. Being stationary and moored alongside the pier makes for an easy target to swimmers and attackers loaded with RPGs.
- ♦ Characteristics of Hostile Threat Ordnance – Anti-ship Missiles equipped with active radar homing seeker; infrared homing guidance with a speed of Mach 2; Stand off range of 15km-20km-50km; flight altitude of 20m above water surface; single shot with a kill probability of 90%; Anti-surface Torpedoes capable of 40 knots speed at firing distance of 8-10 km; Guidance system of wire guided or acoustics guided lock-on systems; and Warhead weighing 100 kgs, and capable of splitting the ship's keel in half. This is the most dreaded ordnance feared by the ship crew.

Naval mines are the weapons that wait at the chokepoint, navigational route of shipping and in extremely shallow water. The charge capacity of mines is 200kg and can destroy surface and submarine targets at a radius of 50 meters. Naval mines can trigger through magnetic and pressure-signature of the target.

SURVIVABILITY OF THE FRIGATE DEFENDS UPON THE FOLLOWING TECHNOLOGY DEVELOPMENT. Survivability is defined as the ability of the Frigate to remain mission capable after multiple combat punishments, and still resume fighting.

- ♦ **Electronic Warfare Systems** – the basic fundamentals of survivability is the effectiveness of the electronic warfare system, superiority, agility and quick response to counter the threat. Defensive measure can be done through the following:
 - *Reduction of ship signatures* – signature control to minimize degree of attraction from hostile anti-shipping missile that could lock-on to radar, and infrared acoustic (torpedoes), magnetic and pressure signatures of the ship that could trigger naval mines underwater to explode.
 - *Distraction* – agility of the Frigate counter-measure electronic warfare equipments to interfere, jam, or distract the guidance system of hostile anti-ship missiles.
 - *Denial* – ability of the Frigate to protect itself by employment of some counter-measures such as:
 - i. *Softkill* – using chaff, made of aluminum powder spread to the atmosphere, decoys, distraction, and confusion to create a false target and divert the path of the attacking missiles away from the ship.
 - ii. *Hardkill* – using rapid firing guns such as close-in weapons system (*phalanx*; *Goalkeeper*) or anti-air-missiles to destroy the attacking anti-ship-missile or aircraft in flight.
 - *Deception* – an electronic warfare role to provide counter-measures to confuse the electronic warfare capability of a hostile threat; or to mislead adversaries with a combination of human mind, mechanical or electronic means to manipulate the decision loop, making it difficult to establish an accurate deliberate decision to attack your ship.
 - *Disruption and Degradation* – to interfere with the hostile forces' electronic warfare capability through jamming, electronic deception, and electronic intrusion. This acts as a force multiplier by increasing the adversary's uncertainties to conduct deliberate attacks on your ship.
- ♦ **Naval Architecture Ship Design.** The design of the ship structures, noise emanating from cavitation of the propulsion, inter-action between the hull, and the water called frictional resistance create acoustics are signatures that can be detected by anti-shipping missiles, torpedoes, and naval mines.

- *Vulnerability* – the capability of the Frigate structure to withstand the spread of damages, and several hits from exploding hostile munitions.
- *Recoverability* – the ability of the Frigate system and sub-system after temporary stoppage of operation to restore vital ship systems, and resume operation after sustaining combat damage.
- *Concentration of vital Equipment* – should not be co-located in one place aboard ship to avoid disruption of operations from a single hit.
- *Duplications* – parallel arrangements of electrical cable installation, firefighting, and damage control equipment must be dispersed to allow use of redundant systems to prevent sudden failure.
- *Separations* – taking apart similar functions of equipment used in utilities can provide the same functions for another equipment in case of damage in one system.
- *Protection* – provisions in the ship systems to resist spread of damage during weapon attacks on the Frigate.
- *Zoning* – vital shipboard services should be grouped to its zone and must have several series of watertight compartments and blast resistance doors.
- *Reliability* – battle readiness under the system must work accurately and efficiently within a short time scale.

EFFECT OF SUCCESSFUL ATTACK AGAINST A FRIGATE CAN BE BASICALLY DIVIDED INTO THREE (3) PHASES:

- ♦ *Primary Weapons Effect.* This consists of kinetic energy, blast, fragmentation, shockwave, whipping etc. likely from an Anti-Shipping Missile (ASM) hitting the center of the large cross section of the ship. Torpedoes and mines can create underwater explosions lifting the ship from the water, and breaking the ship into parts. Naval Gunfire with armor-piercing shell/high explosive incendiaries could penetrate the hull's inner section and explode at the interior section of the ship.
- ♦ *Secondary Weapons Effect.* In the aftermath of an attack, a large portion of the lethality is the ability to create a ball of fire from the exploding ordnance and munitions at the magazine room onboard, spreading smoke, confusion, and dead bodies everywhere in the ship.
- ♦ *Tertiary Weapons Effect.* The principal hazard to the ship could be a total loss when the ship becomes dead in the seaway due to power disruption, flooding, inoperable pumps, damage in the engine room, loss of steerage and propulsion, damage in the bridge and combat information center (CIC), collapse of super-structures, before capsizing and sinking to the bottom of the sea. The last ditch defense is damage control, which depends on how fast the damages can be repaired to prevent the ship from sinking to Davy Jones Locker at the bottom of the sea.



Combat Management Systems (CMS) are valuable to match the threat and neutralize the hostile platform and ordnance in flight or underwater. The following are a variety of weapons and sensors managed by the CMS. It must be a proven design with good combat reputation.

Combat Management Systems is the brain of the combat engagement capabilities of the Frigate. The basic principles of the CMS emanate from surveillance, detection, tracking, identification, target acquisition, quick reaction time in acquisition, and neutralization of the target. The CMS provides:

- ♦ *Situation Awareness* – Awareness of sea battle environment, which includes surface, sub-surface, and air. Sensors via radar, electro-optical system and sonar collect the information.
- ♦ *Intelligence* – Convert the information gathered into a timely actionable interpretation, collation, evaluation, and a timely produced common combat operational picture.
- ♦ *Planning and Decision Making* – These steps helps the Frigate commander to rapidly make a quick actionable plan for decision-making and implementation, in a rapidly changing complex battle environment.
- ♦ *Weapons Systems Command and Control* – The CMS will direct weapons, sensors to engage the incoming threat. The CMS is carried out through the crew, sensors and weapons system. It is a software which is flexible to operate in a complex naval battle environment, able to electronically interact with other sub-systems, but interoperable with the system of one's own as well as other allied navies.

LESSON LEARNED IN THE ABOVE CONFLICTS. Frigate war-fighting doctrine is the primary document in the identification of a threat — how it will be neutralized, and by what weapon. Without a doctrine, a Navy combatant is as good as anyone not knowing how to survive from a hostile threat.

The unimaginable casualties suffered by two powerful navies during naval operations are grim reminders of combat systems management in an actual hostile environment. This involves war-fighting doctrine, systems maintenance, combat systems operators skills, and commander's decision making. Casualties could be a result of poor CMS systems and sensors maintenance, outdated war-fighting doctrine, and a crew with a lack of combat skills, among others.

The goal of a Navy is to maintain a battle-ready fighting ship. An enormous budget is needed in support of its life cycle cost for the periodic operation and maintenance that a government must set aside. The absence of such plan to maintain a battle-ready warship is a Navy destined to fail and defeated in battle.

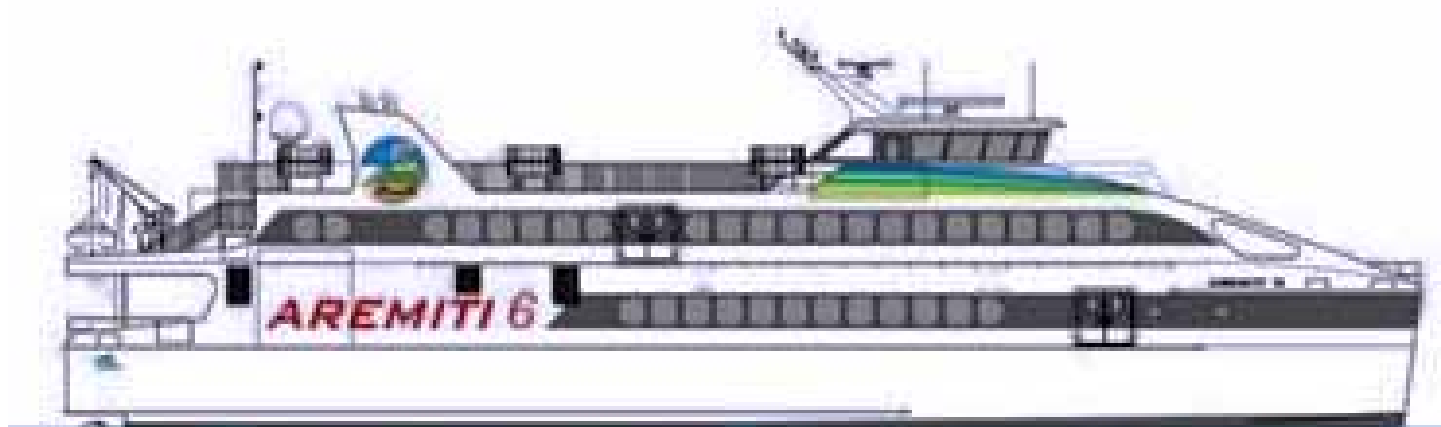


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New Passenger Ferry Contract from SNC AREMITI Celebrates Austal's 5th Vessel for French Polynesia

by Austal Media



This 49-meter passenger ferry will be designed and built by Austal for long standing client SNC Aremiti of French Polynesia. Image: Austal

Austal Limited announced that long-standing client and French Polynesia's leading commercial ferry operator, **SNC Aremiti** (part of the Groupe Degage), has awarded a AU\$30 million contract to Austal to design and build a new 49-meter high-speed passenger catamaran ferry.

This will be the 5th vessel **Austal** has delivered to French Polynesia since 2002. **Austal** has previously designed, and built 4 vessels for the **Groupe Degage** comprising two 69-meter monohull cruise ships, a 56-meter vehicle passenger catamaran ferry, and an 80-meter vehicle passenger catamaran ferry.

"This contract not only continues a successful relationship between **Austal** and **SNC Aremiti** but further confirms the company's leadership position in the international high-speed ferry market" **Austal** CEO, **David Singleton** said.

"**Austal** has always been an export-focused company. We have sold ships to every corner of the globe this year including Taiwan, Southeast Asia, Norway, the Canary Islands, and now Tahiti. I am confident that we will continue to build on the success of 2017 for an even better 2018" Mr **Singleton** added.

"**Austal** is at heart an advanced technology company and this next generation high-speed passenger ferry demonstrates **SNC Aremiti's** endorsement of our innovative ship design and internationally competitive, high quality construction," Mr **Singleton** said.

"This order from **SNC Aremiti** caps off an incredibly successful year for our international commercial ferry business. We have added 8 new vessels, worth more than AU\$380 million, to our order book in the past 12 months, including 2 trimarans of 117-meters in length and a 109-meter catamaran. We also recently signed an MOU with

JR Kyushu of Japan for an 80-meter trimaran." said **Austal** VP Sales & Marketing, **Ben Marland**.

This **Austal** design features seating capacity for 620 passengers and garage space for up to 30 motorbikes, small vehicles and cargo. With a top speed of 36 knots it will be fitted with **Austal's Ride Control System** to improve seakeeping, and provide greater passenger comfort on the Papeete – Moorea route in French Polynesia.

The vessel will be designed in Australia and construction of the vessel will commence at **Austal Philippines** during 2018, with delivery scheduled for July 2019.

Austal is an Australian shipbuilder and global defense prime contractor which designs, constructs and sustains some of the world's most advanced commercial and defense vessels.

Austal successfully balances commercial and defense projects and celebrates 30 years of success in 2018. **Austal** has designed, constructed and delivered more than 300 commercial and defense vessels for more than 100 operators in 54 countries worldwide.

Austal is Australia's largest defense exporter and the only **ASX**-listed shipbuilder. **Austal** has industry leading shipyards in Australia, the United States of America and Philippines and service centres worldwide.

Austal delivers iconic monohull, catamaran and trimaran commercial vessel platforms – including the world's largest trimaran ferry and multiple defense programs such as the **Littoral Combat Ship (LCS)** and **Expeditionary Fast Transport (EPF)** for the United States Navy. **Austal** has grown to become the world's largest aluminium shipbuilder. ⚓



Disposing of Fiberglass Vessels

by IMO NEWS

A large number of abandoned or no-longer usable fiberglass vessels – including fishing vessels and leisure craft – are dumped at sea each year, possibly due to a lack of land-based disposal facilities. This was a concern raised by Pacific delegations to the Parties to the treaties, which regulate the dumping of wastes at sea. However, full data on the scale of the problem is lacking.

Fiberglass is a highly recyclable material, and the technology for recycling fiberglass already exists, but the logistics of handling the large amounts of fiberglass hulls from abandoned or derelict vessels poses a significant challenge, in particular in Small Island Developing States.

However, some countries reported that they had implemented a program or strategy for disposal or deconstruction of fiberglass pleasure boats. Following discussion, the Parties to the London Convention and London Protocol agreed further work was needed. The IMO Secretariat was instructed to commission a study to collate information on the scale of the problem and identify key knowledge gaps relating to impacts of fiber-reinforced plastic vessels dumped or placed in the marine environment.

The Scientific Groups (which provide scientific and technical

advice to the Parties to the Convention and Protocol) will be invited to consider the study and evaluate whether there is a need for disposal into the sea of fiber-reinforced plastic vessels or vessels with fiber-reinforced plastic components. If there is a need, then whether such vessels could be disposed of in the sea in a safe and environmentally sound manner would be examined.

Additionally, the Scientific Groups should consider whether there is a need to develop guidance on the disposal of fiberglass vessels.

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The Scientific Groups are scheduled to meet in April-May 2018 in Chile. ⚓



The Port of Barcelona takes a Quantum Leap in 2017 to become the Fastest-Growing European Port

by Port de Barcelona News

In 2017, the Port of Barcelona recorded its best results yet in the main traffic indicators, figures that allowed it to take a quantum leap to become the fastest-growing European port. Total traffic (including all cargo modes) surpassed 61 million tons for the first time, recording a year-on-year increase of 26%.

This result contributed significantly to the excellent behavior of container traffic, one of the most strategic segments of activity for the Port and also a more representative marker of the surrounding economy. Nearly 3 million TEUs were moved in 2017, an increase of 32.3%. A very significant factor in this increase was transshipment containers (+137%), which are those unloaded from one ship to be reloaded onto another for final shipment. Although this activity does not impact directly on the economy of the Port's surrounding economy, it does help to make stowage operations more competitive and to provide greater connectivity for the region's importers and exporters.

Containers for Foreign Trade. Containerized import cargo stood at 561,103 TEU (+8.3%) and export cargo (the most significant in volume terms, at 705,204 TEU) was up 2.6%. These figures also indicate a significant degree of recovery compared to pre-crisis levels. Reactivation of traffic in export containers had already begun in 2010, but it is worth noting that in 2017 the Port of Barcelona channeled 68% more of this type of cargo than in 2007. Last year, the all-time record for import containers established in 2007 was surpassed for the first time. Specifically, the Catalan port channeled 3% more import containerized cargo than it did 10 years ago. China continues to be Port of Barcelona's prime trading partner, both in terms of imports (44.3% of foreign trade containers unloaded in the Catalan facility), and exports (since it receives 11.6% of the containers leaving the Port). The remaining trading partners of the Port, and type of products channeled, are highly diversified.

Liquid Bulk Transport. 14.4 million tons of goods were transported (mainly hydrocarbons), an increase of 27% year on year. There was growth in specific products: natural gas (+64%), gasoline (+30%), and chemicals (+23%).

Dry Bulk. 4.4 million tons of goods were handled, or an increase of around 1%, soya beans (+10%), and cereals and meal (+13%), a most positive development.

UTI and Goods transported to the Balearic and Canary Islands, and freight travelling on the motorways of the sea. The Port channeled 393,601 intermodal transport units (UTI) of Ro-Ro traffic (truck, platform or trailer), marking an increase of 6.2%. Barcelona channeled a total of 144,723 UTI (+7%) via the motorways of the sea (or short sea shipping services), resulting in an identical number of trucks diverted from the road to the maritime mode, which is more efficient both economically and environmentally. Traffic on the motorways of the sea also hit a new record for the Port and contributes significantly to boosting sustainable logistics chains in the Mediterranean area.

Vehicles. During 2017 the Port of Barcelona channeled a total of 837,273 vehicles, down 8.7% year on year. Spanish vehicle production and exports also declined last year, which can be seen in the Port's vehicle traffic results. Even so, Barcelona remains the leading port within the Spanish port system in terms of movement of vehicles.

More cruise passengers in winter, fewer in summer. For the first time, the Port of Barcelona moved 4.1 million people, comprising ferry passengers (1.4 million) and cruise-goers (2.7 million). The number of passengers increased by 4.5%, caused mainly by the increase in ferry passengers (+12%). Cruise passenger numbers increased by 1%. In the "low" season (January, February, March, November, December), cruise passenger numbers were up 13%, while in the remaining months there was a decrease of 2%.

Economic results. In 2017, net turnover was €167 million, up 7% year on year, due mainly to increased revenue from the upturn in activity. At the provisional close of the financial year, the Port recorded a profit of €50 million (+50%). The Port's ability to generate cash flow was up 15% from the previous year's €99. In 2017, the Port of Barcelona managed to cut significantly the long-term debt contracted with the European Investment Bank (EIB). It reduced its debt by 8%, which now stands at €281.1 million. Regarding the consolidated economic results (Port of Barcelona, CILSA, World Trade Center Barcelona and Port Vell), net turnover amounted to €215.6 million (+8%), while profits stood at €58.4 million (+45%).

The Impacts of Global Sand Mining

by Vicky Viray Mendoza

The Bued River, Pangasinan, Philippines. Photo Credit: Greedypeg.org

Beaches around the world are disappearing. Riverbanks are getting wider and deeper, as large sections of riverbanks collapse. Most people would not know about this because sand mining is an invisible problem until it's too late. Sand is used mainly to make cement for construction projects. Yet after decades of continuous hauling and dredging, the negative impacts have become too egregious to completely reverse. Sand mining is known to occur in 73 countries, on 5 continents. Because of the difficulty in regulating sand mining operations, the tragedies of the commons results from operators that massively extract the sand without considering long-term consequences, leading to over-exploitation and eventually degradation of the environment. Even with regulated sand mining, the industry is still subject to rampant illegal extraction and trade, which would not have been almost an impossible mission to curtail if not for the collusion of powerful entities with the sand mine companies. Although much of the mining industry is legal, sand mining has become so lucrative that illegal activities are widespread and brazen. Numerous reports carry news of murders and crimes carried out by "sand mafias" during the course of illegal sand mining crackdowns around the world. At the root lies the law of supply and demand. The supply of sand is finite and in some places diminishing, while the demand for sand is ever increasing, and thus the price of sand consequently increases, making illegal sand mining even more alluring. This is the reason behind rampant illegal sand mining.

Based on a cursory look at Coastal Care's sand mining database which identifies a country's number of areas with sand mines, the countries likely to be affected the most by global sand mining and sand theft include India (12); Australia (6); Cambodia (5); Mexico

(5); Philippines (5); Senegal (5); France (4); Morocco (4), Nigeria (4), Singapore (4), South Africa (4); and 6 out of 26 Caribbean Islands. There are also countries like Cape Verde (2) with fewer sand mines but are just as highly affected. It seems that the "sand mafia" operates both globally and locally in countries highly dependent on beach tourism.

Based on the latest (2014) data from the **Observatory of Economic Complexity** (OEC) Database, the world's top 10 sand-exporter countries are: USA, Germany, Netherlands, China, Belgium-Luxembourg, Australia, Vietnam, Cambodia, France, and Malaysia. The world's top 10 sand-importer countries are: Singapore, Canada, Belgium-Luxembourg, Netherlands, Japan, Mexico, Germany, Hongkong, China, and Italy.

In the **U.S.A.**, the Cemex Mine in Marina City is the only remaining coastal sand mine in operation in the entire U.S.A. At a time when other countries are taking efforts to dump sand on their beaches to combat sea level rise, Cemex continues to erode the 30-mile long Monterey coastline, averaging 4 ft annually. Should the mine shut down, the coastline would rather be growing by 3 ft annually. The conclusion had been reached in a recent paper by Prof. **Edward Thornton** of the **Naval Postgraduate School**, and one of the world's leading experts in coastal erosion. *"They're taking property from the whole coast, which I calculate to be more than 8 acres a year," Thornton* said. Cemex was established years before the 1977 **Coastal Act** was established that banned sand mining. Thus, Cemex falls outside the jurisdiction of the Monterey Bay National Marine Sanctuary, State Lands Commission, and U.S. Army Corps of Engineers, that had shut down all the other sand mines in 1990. After Thornton wrote a letter to the California Coastal Commission in 2009 about his findings, Cemex was investigated in 2010. Then in July 2017, in what was viewed as a momentous

agreement reached between Cemex, California Coastal Commission, State Lands Commission, and Marina City — the cease and desist order to Cemex mining in 3 years (2020), and shut down of Cemex business in 6 years (2023) was approved. During this time, Cemex is to restore and rehabilitate the coastline. This outcome closes the final chapter on coastal sand mining in the **U.S.A.**

In **Morocco**, at the edge of the Atlantic Ocean, the beaches have disappeared. Along the shoreline, beach mining operators that also involve the “sand mafia” hire hundreds of poor boys to do the sand pillaging. The boys walk knee-high into ocean waters to scoop up and bag the sand, to be carried up the cliffs by donkeys. Coastal sand mining operations across **Morocco** are the world’s largest. Thus, the environmental impacts are enormous. In the rivers near Lake Victoria, **Kenya**, there are 180 trucks daily that leave with a truckload of sand, which is the biggest source of income for the residents. The villages along the riverbank are on the brink of collapse as the water has eaten up most sections of the riverbank. In **Namibia**, sand mining companies can operate with an environmental clearance certificate, but due to high growth in construction, many people extract sand illegally.

In the **Caribbean**, beaches are disappearing at alarming rates as sand thieves feed a local construction boom. Among the hardest hit is **Grenada**, where a \$1.2 million seawall is being built to protect the 131-square-mile island. “Large sand thefts have exposed the north coast towns to rough seas,” said **Joseph Gilbert**, Minister of Works and Environment. One of the region’s largest sand thefts targeted Jamaica, where nearly 100 truckloads of sand were swiped from private property. Two-thirds of Tortola’s and Nevis’ sand dunes were decimated. On Grenada’s 13 sq. mile Carriacou Island, “the beach is shrinking by 3 linear feet every year due to illegal sand mining. If we continue to mine the beaches the way we’ve been doing, we will have no sand to boast about. Just sea and sun,” **Gilbert** added. In **Barbuda**, the Department of Environment found that after they announced suspension of sand mining by December 2017, reports of an increase in beach sand removal surfaced in **Antigua**, where it is absolutely illegal to dig or haul sand. In **Mexico**, sand is mined mostly from riverbeds in Baja California, then filtered and washed into high-quality sand for construction. The sand travels by barge from Ensenada or by train from Tecate, over the border to San Diego, California, to be blended with other minerals to make concrete for its increasing infrastructure construction needs. “The increased mining south of the U.S. border is depleting the supply in Baja California,” said **Jorge Escobar Martinez**, Mexico’s Director of Ecology.

In **India**, the “sand mafia” had for years been robbing the Raipur Khadar village of sand. People are getting killed over sand. Thousands of truckloads are mined every day in Tamil Nadu, which has India’s second-longest coastline. Sand is key to the construction industry, which provides about 35 million jobs. Mined sand is worth 450 billion rupees (\$6.6 billion) annually, but much of this is illegal and brings serious impacts. **India** is now taking steps to get sand mining under control. Almost every day, local or state officials declare their determination to combat sand mining. In some places, villagers block roads to stop sand trucks. Despite laws regulating sand mining in most states, the rivers and beaches are dredged beyond safe levels. Bribing local officials and the police to turn a blind eye is commonplace. Corruption, violence, and death stupefy many of even the best-intentioned attempts to crack down on illegal sand mining.

In **Indonesia**, sand miners have completely eradicated 24 islands since 2005. The sand from those islands ended up in **Singapore**, which needs colossal amounts to continue its construction of territorial expansion. **Singapore** has created an extra 20 square miles in the past 40 years and still adding more, making **Singapore** the world’s largest sand-importer by far. In comparison, China is only the 9th largest sand-importer. But to put this into perspective, between 2011 and 2013,

China used more concrete than the United States did during the entire 20th century. The demand for sand has denuded beaches and riverbeds in neighboring countries that **Indonesia**, **Malaysia** and **Vietnam** have restricted or banned export of sand to **Singapore**. In **Cambodia**, “A lack of proper scientific methodology for river sand mining has led to indiscriminate sand mining, while weak governance and corruption have led to widespread illegal mining,” the **United Nations** Report noted. In **Vietnam**, sand miners have torn up hundreds of acres of forest and farmers’ fields to get at underground sand deposits. In the **Philippines**, the Coastal Care database identifies sand mining operations in Cagayan-Gonzaga, Aparri-Cagayan, Ilocos Sur, Lingayen, and Sorsogon City. “Many riverbanks were mined massively that are evident on a drive leading to Baguio. One is the Agno River in Pangasinan; another is the Bued River” **Vadm Emilio C. Marayag** stated. Bued became the drainage of mine tailings from copper and gold mines in Benguet. Both legal and illegal mining operations persisted in these sand mining areas.

IMPACTS. The disappearance of a riverbank or a beach will certainly have impacts on humans, marine animals, and the ecosystems. Sand exploitation also has a negative effect on the climate change phenomenon. Direct impact is related to the extraction process and transport; and indirect impact to the cement production. Carbon dioxide emissions from cement production could account for about 5% of global CO2 emissions from all industrial process and fossil fuel combustion.

In Southern Monterey Bay, Marina, **USA** sand mining was ironically taking place along the shoreline of one of the largest protected National Marine Sanctuaries. Marina City now has the highest coastal erosion rate in the State of California. For over 20 years, scientists had been speculating the sand mine’s contribution to beach erosion, until a 2008 study concluded sand mining was the primary cause. The Surfrider Foundation paints a grim picture of what could happen to the beach if sand mining isn’t stopped. It stated that coastal erosion could one day even affect Highway 1. In addition to the impact on marine animals along the shoreline, erosion impacts on government infrastructure right along the much-eroded beachfront areas.

In **Morocco**, sand mining operators hire hundreds of boys as child laborers to do 8-hour workdays, providing them quick earnings to help lift their family out of poverty but are robbing the boys the long-term benefits of being in school instead. In **Kenya**, government officials stated that illegal sand mining along the banks of River Nzoia stands to displace 7,000 river people from their homes due to flooding; and some of the negative environmental impacts include the drying of aquifers; riverbank and riverbed erosion; water and air pollution; and the loss of valuable crops, trees, and animal species. In **Namibia**, the uncontrolled quarrying of sand for road construction and brick-making has left the environment scarred with large open pits that pose a danger to people and animals. These pits are visible all over Namibia, and have become garbage dumpsites, causing further environmental damage.

In **Jamaica**, excessive sand mining exposed protected mangroves and a limestone forest to wind and waves, and the Islands of **Tortola**, **Anguilla** and **St. Vincent** are now vulnerable to flooding, said **Gillian Cambers** of the University of Puerto Rico.

In **India**, removing large amounts of sand has eroded river beds and beaches, enlarged river mouths, destroyed bio-diversity, and exacerbated groundwater shortages and flooding, leading to the loss of livelihoods of coastal communities. Sand mining has depleted fish stocks, and made water unfit for agriculture. It has also led to landslides, which further eroded coastlines and hurt communities that depended on the water for their livelihood. In **Cambodia**, illegal sand mining has caused the disappearance of beaches and the collapse of mangroves. The coastal dredging has destroyed sea grass beds, and threatened endangered species like Irrawaddy and spinner dolphins from the coastal waters, as well as the

royal turtles from their natural habitat. In **Vietnam**, the latest report of the Ministry of Agriculture and Rural Development showed that the whole Mekong River Delta had suffered 406 landslides with a total length of 891 kms, including 393 riverbank erosions with a total length of 583 kms, and 13 coastal erosions with a total length of over 300 kms.

In **Indonesia**, there are early negative impacts of the sand extractions. The local people and activists believe the flood soaking their homes in Selok Awar-Awar Village happened because of the destruction of coastal ecosystems along the southern coast of Lumajang. International activists together with local people have clamored for the stoppage of quarrying. On 23-September-2015, the group staged a protest against sand mining in Watu Pecak Beach. The protest halted the quarrying and blocked dozens of trucks transporting the sand. The protesters claimed that the sand mining operations damaged the environment, leaving holes 5 meters in diameter and 1 meter deep, on the beach. Three days after the protests, an environmental activist, Salim Kancil, was killed by a group of more than 30 men. He was dragged from his house to Selok Awar-Awar Village, where he was beaten up, and mortally struck with a hoe on his head. An environmental activist named Tosan was assaulted in his home, beaten with wood, stones, and farm implements, and run over by a motorcycle. He was in critical condition upon arrival at the Hospital. In Makassar, the injustice fishermen face is being banned from using blast-fishing and threatened with jail time, while reclamation is allowed wherein ocean sand is dredged out, and the damage to the ecosystem is far worse than blast-fishing. The fishermen are worried that over-exploited sand mining would drastically reduce the fish stocks in their seas. About 97% of the townsfolk are fishermen whose livelihoods are fully dependent on fishing. The lower fish catch, as a result of dredging, would be felt by 20,000 fishermen in the area. A fisherman said that when the seabed gets deeper, the waves get bigger, which makes it more difficult to catch fish.

In black sand beaches in the **Philippines**, a type of valuable iron ore called magnetite abounds. However, black sand mining often takes place illegally, which increases the risks and magnitude of threats, such as gradual or sudden land subsidence which as a result of erosion, exposes the coastal communities to rising sea levels and typhoons. Destruction of sand dunes and coastal sediment from illegal magnetite mining resulted in erosion of the coastlines of Gonzaga, Aparri, Buguey, Ilocos Sur, Lingayen, and Sorsogon. The widened riverbanks as a result of exploitive sand mining have affected the groundwater. The once flowing rivers are almost dried-up due to heavy silts and exposure to solar radiation as the riverbeds were stripped of sand and stones for gravel. Subsidence



Magnetite beach sand Mining Operation, Buguey, Cagayan, Philippines

will proceed even centuries after stoppage of sand mining in these coastlines and riverbanks. But "sand mining is acceptable (and a necessity) in case of volcanic areas where excessive sand over-silts the riverbed that causes yearly flooding and prevents use of the river for navigation, as had happened in a few rivers in Zambales and Bataan after the Pinatubo eruption, isolating Bataan and Zambales from the rest of Luzon during the rainy season," **Commo. Carlos L. Agustin** stated.

Globally, some of the sand comes directly from the beach, which can do damage to habitats for sea turtles and birds, but much of the sand is dredged up from the seafloor by riverboats and large ocean ships. **Le Guern Lytle** said sand mining "destroys critical breeding habitats for fish and other marine life. Extracting sand from the river or sea bottom dissolves ecosystems."

MITIGATION STRATEGIES. In many of these countries, environmental laws are interfered by the political leaders themselves and hamper enforcement for their own political and financial gains. Sand mines operate with relative impunity as they continue to mine the waves for decades. The central government must build capacity and visibly support its enforcement arm to dissuade illegal sand mining. Local government must stop issuing new permits or deny renewal of permits to operators that do not meet environmental requirements in mining rivers and harbors. Operators that excavate beyond an agreed load with the city government should face financial penalties greater than the profit from sand trade. Dragline operators should obtain a permit. Local mining sector provincial government representatives should take a stand against illegal sand mining through enforcement of the law, to prevent adverse environmental consequences of sand mining.

In Grenada, legislators expect to triple penalties and extend prison terms from 3 months to 2 years. Jamaica plans to approve new maximum fines of \$11,000 and allow police to seize sand-mining equipment. Mexico's National Water Commission is doing its best to limit the number of mining permits, and the State has plans to study the environmental damage, and the effects of sand mining. The Mexico is also considering placing stricter limits on the weight of vehicles allowed in the streambeds, and requiring sand miners to leave an undisturbed layer in streambeds to protect aquifers.

In **Namibia**, dealing with SMEs poses a big problem. When the local official tells them to stop operations, the local authorities have to give them another area to excavate sand. Construction companies ignore local and regional councils, as the land where they mine is under the jurisdiction of traditional authorities. In **Morocco**, the penalty fines are cheaper than the fees to obtain a permit to mine sand. Oceanographer **Abdou Khouakhi**, believes there is a need to "adopt conservation and preservation methods, rather than defense approaches, that take the wider ecosystem into consideration." He prescribes an all-encompassing program emphasizing stabilization, vegetation, beach rehabilitation and avoiding future sand mining operations. In **Kenya**, the Machakos County Sand Harvesting Act of 2014 regulates sand mining. It states: "On-farm sand harvesting shall only be undertaken by open-cast harvesting method and no underground tunneling or extraction of sand shall be undertaken." The law restricts sand mining during 6 a.m.-6 p.m. but farmers say illegal miners avoid arrest by mining at night.

In **India**, the National Green Tribunal, an environmental federal court, allows any citizen to file a complaint on illegal sand mining. Local and state officials have impounded sand trucks, levied fines, and arrested people involved in illegal sand mining. The punishment for illegal sand mining is jail up to 2 years or fines of up to 25,000 rupees (\$370), or both. The Supreme Court in February 2012 had ruled environmental permission was required for all sand mining as a result of indiscriminate sand theft affecting **India's** ecological balance. The government drew up a draft notification for a new sustainable sand and minor mineral mining policy. It specifies areas

where mining is allowed or prohibited, based on sustainability guidelines and monitoring of resources using scientific tools. In Dakshina Kannada's construction sector, the sand mining ban was relaxed for a few months to allow "minimum mining." The license holders were allowed to mine 10 loads of sand per month from an acre of riverbed, compared to 100 loads of sand per month prior to the ban. "From 01-January-2016, the new law and guidelines on sustainable sand and minor mineral mining would be applicable. The new policy would check illegal mining and allow serious, legitimate players to remain in business," said Parakash Javadekar, Minister of State for Environment, Forest & Climate Change. The policy allows: District level environment clearances up to 5 hectares of mine lease area; State level clearances up to 50 hectares; and Center level clearances for over 50 hectares.

In **Indonesia**, an environmentalist activist was killed for joining a mass protest against sand mining in East Java. This is the first case of an activist murdered in East Java. JATAM Mining Advocacy Network clamored the central and local authorities to ask police to investigate the case, and find the mastermind behind the murder. In southern Sulawesi, Makassar fishermen protested intensely against a land reclamation company for starting operations before being granted a permit by the fishing ministry, and for operating without meeting environmental regulations. Almost all sand mining in **Indonesia** is illegal. In **Cambodia**, all sand export operations have been banned since July 2017 because of the industry's environmental impacts. In **Vietnam**, Tuan, from Can Tho University, says "to reduce the occurrence of landslides, sand mining should be restricted or even suspended, and trees should be planted in high-risk areas."

In the **Philippines**, Kalikasan Campaign Coordinator Leon Dulce said immediate intervention is needed to save coastal areas of Gonzaga and other sand mined areas from sinking. Municipal Planning and Development Coordinator **Emy Bukaneg** responded that local government plans to build a riverbank protection and a sea wall. **Dulce** added, "If magnetite is extracted from the area, there should be a process of rehabilitation. The area should be brought back closer to its original state. The government's planned infrastructure mitigation should be mixed with green belting. There should be a study on how to restore the ecosystem. If there is no appropriate rehabilitation measure, the areas will be left vulnerable to erosion." The Mining Act of 1995 states that mining companies are responsible for ensuring the rehabilitation of the mining areas. The mining law's Section 71, Chapter 11 states that "contractors and permittees shall technically and biologically rehabilitate the excavated, mined-out, tailings covered and distributed areas to the condition of the environmental safety." In 1989, **DENR** put a total ban on mining and quarrying in certain areas of the heavily silted Bued River.

CONCLUSION. The negative consequences of massive sand mining are most felt in poorer regions. Massive sand extraction physically alters rivers and coastal ecosystems, and causes erosion. The theft of river and beach sand is a direct cause of erosion of riverbanks and shorelines. It is very damaging to the river and beach fauna and flora, and causes environmental damage to ecosystems such as mangroves, dunes, wetlands, and corral reefs. Denuded beaches, due to exploitive sand mining, suffers from a loss of protection from storm surges such as tropical cyclones. It all boils down to one truth – *less sand means more flooding* – putting riverbank villages, impoverished coastal communities, and marine environments at increasingly higher risk when misconduct of sand mining operators continue, amidst irregular monitoring by national and local authorities.

RECOMMENDATIONS. Sand mining involves a high degree of environmental degradation. Thus, early on, specific measures must be adopted to mitigate environmental impacts. Sand mining companies need to know and respect environmental regulations, invest in clean technologies, and preserve the environment from potential negative impacts of sand mining. The sand mining companies must be conscious about the environmental impacts in order to start thinking about the environmental costs, and then include it as a part of production cost. Sand mining companies must focus on reducing negative impacts, and finding solutions to the threats.

Public authorities in the mining sector and environment must: (1) set up and enforce environmental laws, regulations, and standards related to processes; (2) permit licensed sand mining; (3) monitor and inspect operations to ensure all mining standards, regulations, laws are fulfilled; and (4) provide support to mining companies for access to clean technologies.

In extreme cases, where environmental damage is visibly on the brink of catastrophe, the central and local government must shut down even legal operations, quickly or on a phased-out basis. In dealing with exploitive illegal sand miners, the operators should be fined the maximum penalty per meter of sand falling below the original level before the illegal sand mining began such that the fine outweighs their profit, and must serve the maximum jail time. Prof. **Podila Sankara Pitchaiah**, Department of Geology, Nagarjuna University, said "If sand minerals are mined within 30m deep or less than 3km from shore, the beaches and dunes suffer." This could be used as a benchmark to measure damage.

Because sand mining is a very lucrative business that brings bad elements into society, the central and local governments, with NGOs, environmental entities, Coast Guard, and Maritime Police, in turn, must together make illegal sand mining business difficult and unworthy to pursue. So long as national and environmental regulations are lightly enforced on both legal and illegal sand mining, the negative impacts will continue. Given the extent of environmental problems linked with sand mining, it is crucial for central and local authorities to impose regulatory strategies for environmental protection. Frequent monitoring is required to ensure that sand mining operations meet regulatory standards. The time has come to treat sand like a major resource --on par with clean air and clean water-- that nations seek to be sustainable for future generations. Once sand is removed, it cannot be replaced in the next generation. It will take centuries. ⚓



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