National Maritime Foundation

MAKING WAVES

A maritime news brief covering:

- MARITIME SECURITY
- MARITIME FORCES
- SHIPPING, PORTS AND OCEAN ECONOMY
- MARINE ENVIRONMENT
- GEOPOLITICS

EDITED BY:

Capt Sarabjeet S Parmar

execdir.nmf@gmail.com

Dr Oliver N Gonsalves

associatefellow1.nmf@gmail.com

CONTENTS

MARITIME SECURITY

CANADIAN WARSHIP SAILS NEAR TAIWAN AMID HEIGHTENED CHINA TENSIONS

- Reuters

A Canadian warship has sailed through the sensitive Taiwan Strait, the island's defence ministry said on Saturday, a voyage that comes at a time of heightened military tension between China and Taiwan and which could anger Beijing. China, which claims democratic Taiwan as its own territory, has stepped up its military activity around the island in the past few weeks, including sending fighter jets to cross the unofficial midway line buffer in the strait. Taiwan's defence ministry said the Canadian corvette had sailed into the Taiwan Strait from the South China Sea and was heading in a northerly direction after leaving the waterway. Taiwan's armed forces monitored the ship while it was in the strait, it said, adding that the situation was normal. The ministry did not elaborate. Canada's navy has sailed through the Taiwan Strait before, including in September of last year. The US Navy has also been conducting regular passages through the strait. China tends to denounce such sailings. In August, its military labelled the guided-missile destroyer USS Mustin's sailing through the strait an "extremely dangerous" move.

China-Canada relations have soured since Canada arrested the chief financial officer of Chinese telecom giant Huawei Technologies, Meng Wanzhou, in late 2018. She was arrested on a warrant from the United States charging her with bank fraud for misleading HSBC about Huawei's business dealings in Iran and causing the bank to break US sanctions. China has demanded her release. Soon after Meng's detention, China arrested Canadian citizens Michael Spavor and Michael Kovrig, charging them with espionage.

Source: aljazeera.com; 03 October 2020

US MILITARY AIRCRAFT REFUELS AT INDIAN BASE FOR FIRST TIME UNDER DEFENCE PACT

- S A Philip

New Delhi: Amid tensions between India and China, the US Navy's long-range anti-submarine warfare and maritime surveillance aircraft, P-8 Poseidon, carried out its maiden refuelling from India's strategic base in Andaman and Nicobar Islands.

Sources said the refuelling happened towards the end of last month and was carried out under the Logistics Exchange Memorandum of Agreement (LEMOA), signed between India and the US in 2016. While the LEMOA was operationalised in 2017 with the US Navy tanker refuelling an Indian Navy ship in the Sea of Japan, this is the first time an American aircraft had done so.

In September, an Indian ship had been refuelled through a US tanker. A defence source said, "The flight landed over a week back at an airstrip in the Andaman and Nicobar Islands for refuelling under the LEMOA. The aircraft was present at the base for a few hours before resuming its journey." While it was a simple refuelling, the message of a US anti-submarine and surveillance aircraft refuelling from the strategic airbase of India is hard to miss. The development assumes more significance because it comes at a time when India and China are locked in a tense stand-off in Ladakh. Both India and China have been signalling each other on their capabilities in the Indian Ocean Region. India has put its entire military on operational alert and almost the entire fleet of the Western and the Eastern Naval Command are at sea.

What is LEMOA?

Asked if such refuelling had been done earlier by the P-8 Poseidon, the source said this was the first time for the aircraft. Under LEMOA, both countries have access to each other's military facilities for refuelling and replenishment. This include food, water, billeting, transportation, petroleum, oil, lubricants, clothing, medical services, spare parts and components, repair and maintenance services, training services, and other logistical items and services. The LEMOA provides India access to Diego Garcia, the biggest American base in the Indian Ocean, besides Guam, on the edge of the Pacific Ocean. While both countries hold a large number of joint exercises during which refuelling and replenishment are done, payment is a tedious process. The LEMO is actually a tweaked version of the Logistics Support Agreement that the US had been pushing for several years. The UPA government was stonewalling the signing of this agreement, which is part of the Foundation Agreements that the US refers to for deeper cooperation with India. The others agreements under the Foundation Agreements are the Basic Exchange and Cooperation Agreement, which is yet to be signed, and the Communications, Compatibility and Security Agreement, signed in 2018.

Source: theprint.in; 02 October 2020

SOUTH CHINA SEA WATCH: CHINA HOLDS DRILLS AMID NEW TENSIONS

- Associated Press

BEIJING (AP) — A look at developments in the South China Sea, where China is pitted against smaller neighbors in multiple territorial disputes over islands, coral reefs and lagoons. The waters are a major commercial shipping route and are rich in fish and possible oil and gas reserves.

CHINA HOLDS NEW DRILLS AMID UPTICK IN TENSIONS

China is holding new military exercises in the South China Sea amid an uptick in tensions between the Asian giant and its Southeast Asian neighbors and the U.S. The Maritime Safety Administration issued a pair of announcements blocking off seas around the area of the exercises running Sunday through Monday but gave no additional details. China holds regular drills in the area and there was no immediate indication they had been prompted by recent events. However, they follow a series of sorties earlier this month by Chinese warplanes into Taiwan's airspace at the northern end of the South China Sea. Beijing said those were intended as a warning to the self-governing island that China claims as its own territory to be brought under its control by force if deemed necessary. Earlier this month, an Indonesian patrol ship confronted a Chinese coast guard vessel that spent almost three days in waters where Indonesia claims economic rights and are near the southernmost part of China's disputed South China Sea claims. The Philippines, Malaysia and Vietnam have also engaged in push-back against Chinese claims and actions in the area, while progress in talks between the Association of Southeast Asian Nations and China over the South China Sea appear at a standstill.

US CALLS CHINESE OUTPOSTS 'PLATFORMS OF COERCION'

The U.S. State Department is accusing China of going back on its word to not militarize the Spratly Islands, calling Beijing's outposts in the area "platforms of coercion." Spokesperson Morgan Ortagus recalled Chinese leader Xi Jinping's statement during a White House visit in 2015 that "China does not intend to pursue militarization" of the Spratly Islands, and that China's outposts would not "target or impact any country." "China has instead pursued a reckless and provocative militarization of those disputed outposts," Ortagus said in a statement issued Sunday. Ortagus cited China's deployment of anti-ship cruise missiles, expanded surveillance capabilities, and the construction of runways and hangars for fighter jets. The Spratlys are occupied by multiple countries, making them the most hotly contested of the South China Sea's island groups. China "uses these militarized outposts as platforms of coercion to assert control over waters to which Beijing has no lawful maritime claim, Ortagus said. "They serve as staging grounds for the hundreds of maritime militia vessels and China Coast Guard ships that regularly harass civilian craft and impede legitimate law enforcement activities, offshore fishing, and hydrocarbon development by neighboring states." China denies militarizing the region, saying the island developments are intended to increase maritime safety as well as assert Chinese territorial claims. It accuses the U.S. of militarizing the area by sailing its ships nearby Chinese outposts in "freedom of navigation operations" and through other actions.

PHILIPPINE PRESIDENT INVOKES 2016 RULING AGAINST CHINA

The Philippine president received rare praise from critics Wednesday for invoking before the United Nations a 2016 arbitration ruling that invalidated China's vast territorial claims in the South China Sea. President Rodrigo Duterte made one of his strongest defenses of the Philippine victory in the arbitration case in his first address before the annual U.N. General Assembly. China dismissed the conclusions of the Hague Tribunal and has long refused to bring the issue to any international arena. Duterte, who has nurtured close ties with China since taking office in mid-2016, has

long been criticized for refusing to immediately and forcefully demand Chinese compliance with the ruling. It found China's claims on virtually the entire South China Sea on historical grounds inconsistent with international maritime law. "The award is now part of international law, beyond compromise and beyond the reach of passing governments to dilute, diminish or abandon," Duterte said, without naming China. "We firmly reject attempts to undermine it. Chinese officials did not immediately issue a reaction Albert del Rosario, a former Philippine foreign secretary who brought the disputes with China to international arbitration, said he was heartened by Duterte's move. Antonio Carpio, a retired Philippine Supreme Court justice who helped in the arbitration case, commended Duterte and hoped that "this is the policy that the Duterte administration will implement across all levels" in protecting Philippine maritime rights and seeking international support to enforce the ruling.

Source: taiwannews.com; 28 September 2020

CAMBODIA NAVAL BASE SET TO UNDERGO CHINA-LED EXPANSION

- Shaun Turton and Mech Dara

PHNOM PENH -- Preparations are underway for a China-backed expansion at Cambodia Ream Naval Base, a facility the U.S. fears will be transformed to host Chinese military assets. A top Royal Cambodian Navy official told Nikkei Asia on Saturday that the Chinese government was supporting a project to expand the port and develop a ship repair facility at the base on the Gulf of Thailand. Vann Bunlieng, a three-star vice-admiral, deputy commander and chief of the navy general staff, said the plans include dredging work to deepen the waters surrounding the base, which can currently only accommodate smaller vessels. "The Chinese government helps us to build a port and repair facility for our ships," Bunlieng said. Bunlieng said the new facilities will save Cambodia money on ship repair should it acquire larger vessels. He said they could also be used to service private vessels to generate revenue. It comes as new satellite images published by the Center for Strategic and International Studies on Friday show that a building at the site -- which had been built with U.S funds -- was demolished last month. "The recent demolition seems to confirm that changes are underway at the naval base and again raises questions about rumored Chinese access," CSIS wrote. The building was one of two U.S.-funded facilities at the base cited in a letter from Pentagon official Joseph Felter to Cambodia's Minister of Defense Tea Banh last year. Felther, the U.S. deputy assistant secretary of defense for South and Southeast Asia, had suggested Cambodia's flip-flop on a plan to upgrade the facilities could indicate an intention to host Chinese military assets.

His letter was followed by a report in the Wall Street Journal of a secret deal between Cambodia and China for the latter to use the Ream base for 30 years. Bunlieng again rejected reports that the base would be used by the Chinese military. Both Cambodia's prime minister and Chinese officials have denied the existence of such plans. The recently demolished building, which was likely knocked down in mid-September,

according to CSIS, was previously the tactical headquarters of the National Committee of Maritime Security.

A nearby U.S.-funded building, which remains standing, houses small patrol vessels donated by the U.S. to the Cambodian navy. The NCMS was moved out of the base entirely. A groundbreaking ceremony at their new headquarters, about 20km north of Ream, was held in May this year, according to Facebook posts. Plans to upgrade the base with Chinese help were previously published by the China Metallurgical Group Corporation, a state-owned enterprise. In a statement on its website, which appears to have been taken down but remains accessible via a cached version, MCC Group said in June 2016 it had signed a "cooperation framework agreement" with Cambodia's defense authorities for a "Port Expansion Project."

The expansion project was to expand a "navy military base." It included adding 5,000 tons of dry dock and 1,500 tons of side-launching mechanical slipway. The work would also outfit the quay, build a repair workshop and add 7.4 hectares of reclaimed land. The current status of that agreement is unclear. Bunlieng referred questions about which company was involved to the Ministry of National Defense. Minister of Defense Tea Banh and the ministry's spokesman were unreachable this morning. In its post accompanying the satellite images, CSIS also pointed to the fact that large tracts of land surrounding the base had been leased by Chinese companies for planned resorts. This included nearby dredging and land reclamation work for the Canopy Sands resort development, which is about 5km north of the base at Ream Bay The project's backer is the Prince Group, a sprawling Chinese conglomerate active in multiple sectors in Cambodia, including property and banking. The project's land reclamation work, which so far covers about 40 hectares at Ream Bay, has been contracted to China Harbour, a subsidiary of China Communications Construction Company, which was recently sanctioned by the U.S. for its involvement in building islands in the disputed South China Sea. "But with current facilities at Ream Naval Base only able to host small patrol ships, any large port development nearby bears watching," CSIS noted.

Source: asia.nikkei.com; 03 October 2020

BANGLADESH, INDIA NAVIES' JOINT PATROL EXERCISE COMMENCES IN BAY OF BENGAL

- APA News

Bangladesh Navy and Indian Navy on Saturday started a three-day coordinated patrol and bilateral exercise "Bongosagar" in the Bay of Bengal aimed at curbing maritime crimes and smuggling. Two Bangladesh Navy warships, Pratyay and Abu Bakr, and a maritime patrol aircraft (MPA) and Indian Navy Warships, INS Kiltan and INS Khukri, and an MPA are taking part in the exercise which will continue till Monday, said an Inter Service Public Relation (ISPR) press release. Earlier, Bangladesh Navy Warships, Pratyay and Abu Bakr, left the Mongla naval jetty on Friday to join the coordinated patrol and "Bongosagar". According to the press release, the coordinated patrol and "Bongosagar" are being carried out aiming at curbing different crimes,

including illegal fish catching, smuggling, human trafficking, piracy, and drug smuggling, in the sea areas.

The joint patrol and exercise of the two neighbouring countries will play a vital role in exchanging information on maritime crimes in their respective maritime boundaries in the Bay of Bengal, ensuring proper management of information, identifying ships conducting illegal activities at sea, and eliminating various crimes. Apart from curbing criminal activities in the sea, it is hoped that the successful implementation of the joint patrol and exercise will be able to play a more effective role in protecting regional maritime security, addressing maritime security risks, and in the development of the maritime economy.

Source: dhakatribune.com; 03 October 2020

MARITIME FORCES

UNUSUAL SUBMARINE LIKELY TO INCREASE THREAT FROM NORTH KOREA

- H I Sutton

The World's only operational conventionally powered ballistic missile submarine (SSB) may soon emerge in North Korea. The Romeo-Mod submarine, also known as Sinpo-C, was first revealed on North Korean TV on July 23 2019. It will likely be armed with three Pukguksong-3 missiles which are the hermit kingdom's best performing. So it will, on paper, pose a serious threat to U.S. and allied targets in the region. But how real is the threat?

The KN-26 Pukguksong-3 missile is taken seriously. In a successful test exactly a year ago on October 2 2019 it flew 450 km (280 miles). This may not sound very far in missile terms, but it reached 910 km (565 miles) in altitude. This in turn can be translated into a maximum range of at least 1,900 km (1,200 miles). Actual ranges may be even further. The missile's name translates as Polaris-3, which may be a deliberate reference to the famous American missile. Like Polaris for the U.S. Navy, Pukguksong-3 may represent a coming of age for the North Korean Navy. The submarine however, is actually not that new. Based on analysis of open sources it is a straightforward modification of the existing Romeo Class. This means that we can determine quite a lot about its internal layout and capabilities. The North Korean Navy has a large fleet of around 20 Romeo Class submarines. It is a Russian design but some where built in China, and some locally. The modification sees three missile silos dropped in through an enlarged sail. The current ballistic missile submarine, the single Gorae Class (aka Sinpo-B), can only carry one missile. While any submarine can be hard to find and pose a serious threat, the Soviet-era Romeo design is now over 60 years old. And the modernization process may have degraded its aging capabilities further. The placement of the missile tubes means that the battery capacity, which drives the submarine when it is submerged, may be almost halved. This will significantly reduce its submerged range.

Ankit Panda, the Stanton senior fellow at the Carnegie Endowment for International Peace, suggests that the submarine will likely not venture far anyway. "Allied Anti-submarine warfare (ASW) means they probably can't treat the SSB as highly survivable if they go far out into the Sea of Japan." Panda believes that "the concept of operations ultimately will be littoral: if the SSB deploys. It will likely stay in their claimed territorial sea" Meanwhile the Pukguksong-3 missile has only been tested once. Analysts are now watching a North Korean naval base closely for tell-take signs that a second test is imminent. Some observers expect as test as early as this month. They are watching a small base at Sinpo where new types of submarines, and missiles, are tested. The Romeo-Mod submarine appears to be under construction there too.

So stepping back, the missile is credible yet the launch platform is inherently limited. So the whole North Korean may be as much about prestige as operational capabilities. But if so, it must come at a massive cost to the isolated country. There are also concerns about the unpredictable role it could play in any future crisis. It is something of an unknown quality, for both sides. As Panda puts it, "there are serious questions about how well North Korea could exercise effective command and control over its sea-based force in a crisis". But once it is at sea, the submarine cannot be ignored by adversaries. And perhaps that is the point.

Source: navalnews.com; 02 October 2020

A U.S. Navy Destroyer Just Spent Record Time at Sea. Did It Really Have To?

- Kyle Mizokami

A U.S. Navy guided missile destroyer now holds the service record for the most continuous days at sea. The USS Stout spent close to seven months in the Middle East, watching over commercial shipping passing through the Strait of Hormuz opposite Iran. Navy brass kept the ship at sea due to the coronavirus outbreak, but the fact that sailors had to endure such a long patrol points to a broader problem: a major shortage of Navy warships. As of September 28, the USS Stout, an Arleigh Burke-class guided missile destroyer, spent 208 straight days at sea. The ship deployed as part of the Eisenhower Carrier Strike Group in early 2020 to the 5th Fleet area of operations. Headquartered in Bahrain, 5th Fleet's area of operations includes the Arabian Gulf, Gulf of Oman, North Arabian Sea, Gulf of Aden, and the Red Sea.

The Eisenhower Carrier Strike Group departed the Middle East earlier this summer, but the USS Stout stayed on. The Navy says the USS Stout spent 139 days as part of Combined Task Force Sentinel, whose mission is to overwatch commercial ships as they pass through Strait of Hormuz. The Strait is dominated on the northern side by the Islamic Republic of Iran, which has made threats to commercial shipping in the past. "Stout," the Navy explained, "provided overwatch for more than 550 vessels as they transited critical chokepoints and delivered 1,500 maritime awareness calls to regional commercial shipping." The USS Stout also served under the Navy's Task Force 50, patrolling the Bab el Mandeb and Strait of Hormuz, and served alongside the USS Bataan's Amphibious Ready Group practicing amphibious assaults.

While it's laudable that a U.S. Navy guided missile destroyer is capable of sailing for straight 208 days, the reality is the deployment put a huge strain on the sailors aboard the Stout and their families back home in Norfolk, Virginia. Navy warship deployments are rarely supposed to last more than six months, and are typically punctuated with shore liberty in interesting and exotic places during their route. While the lack of shore liberty during a global pandemic is understandable, having sailors spend 208 uninterrupted days at sea is not. The only reasonable explanation for that excessive duration is that there wasn't another ship capable of taking its place. The USS Stout's record is another example of a U.S. Navy without enough ships to do the tasks required of it. Today's expensive warships, cost overruns, and delays could have rippling consequences for decades to come, as the Navy must struggle to fulfill a global mission set with less than the ideal number of ships. The admirals promise a bigger fleet in 10 or 20 years, but that's of little comfort to sailors who must serve for months on end without seeing their families.

Source: popularmechanics.com; 01 October 2020

THE PENTAGON WANTS TO SUPERSIZE THE NAVY TO 500+ SHIPS. GOOD LUCK PAYING FOR THAT.

- Kyle Mizokami

The U.S. Navy could grow to a fleet of more than 500 ships, an increase of more than 50 percent over the fleet's current battle force. The Pentagon is facing mounting pressure to boost the number of U.S. warships as a counter to China's rapid naval buildup. Four studies suggest the key to growth lies in small, lightly manned or unmanned warships, which are inexpensive to build and sail, but bristling with sensors and weapons.

The Future Naval Force Study looks at possible directions for the U.S. Navy to take in building a fleet for 2045. Three studies were commissioned from within the Pentagon itself—the Cost Assessment & Program Evaluation office, the Joint Staff, and the Navy—and another by the Hudson Institute, an outside organization. The Navy will take all of these studies into account, Defense News reports, to ultimately decide on a path forward that will increase the size of the fleet. The Navy will take all of these studies into account, Defense News reports, to ultimately decide on a path forward that will increase the size of the fleet. The U.S. Navy has sought a way to grow its fleet for the last 5 years, but is struggling to find a way that doesn't include paying more money. A single U.S. Navy Arleigh Burke-class guided missile destroyer, for example, is equipped with one 5-inch gun, 96 missile silos, two helicopters, and a radar capable of tracking targets ranging from sea-skimming cruise missiles to ballistic missile warheads in low-Earth orbit. A Burke-class ship, like the newly commissioned USS Delbert Black, is one of the most capable warships ever built, but each one costs a hefty $1.8 billion. Fortunately for the Navy, the robotic revolution that swept the Pentagon after the attacks on 9/11 is now reaching the world of surface ships. In 2019, the Navy's uncrewed Sea Hunter ship drone sailed autonomously from San Diego to Hawaii and back, proving it can handle long-distance, open-ocean voyages. The Navy is betting that unmanned warships, equipped to function as sub chasers, radar pickets, and floating magazines, are the way forward.

An unmanned ship can't begin to match a destroyers like the USS Delbert Black, but not every warship needs to be a Delbert Black. An unmanned ship could carry weapons and sensors for much less, extending a task force's detection range and increasing its collective number of missile silos. Other ships might be lightly or optionally manned, with humans only embarked for specific tasks. The push for unmanned ships also reflects the hard reality for budget planners that the Navy spends almost as much on personnel as it does buying ships and aircraft. The Navy requested $207.1 billion for 2021, asking $57.2 billion for new equipment and $55 billion for for the people to operate it. Those two numbers typically go hand in hand, though unmanned ships and aircraft promise to change that. Ultimately, the key to boosting the Navy isn't just buying more ships—it's buying more ships while adding as few sailors to crew them as possible. All of the proposals lean heavily on unmanned ships, recommending between 65 and 87 large unmanned surface ships (LUSVs). These are described as about the

size of naval corvettes, or between 1,000 to 1,500 tons. Extra large unmanned undersea vessels (XLUUV), like Boeing's Orca, will likely contribute to the mix, augmenting America's attack submarine fleet. Is the U.S. Navy placing too much faith in unmanned vessels? In the 2010s, the service decided that small Littoral Combat Ships (LCS) and the Zumwalt-class stealth destroyers were the future. In both cases, the Navy bought into technological hype only to become bogged down with expensive delays and cost overruns. Ten years later, the LCS class is generally regarded as a failure, and the Navy will build only three of a planned 32 Zumwalts. If unmanned warships run into rough waters, it could imperil the Navy's entire effort to grow the fleet.

Source: popularmechanics.com; 29 September 2020

MQ-4C TRITON DEPLOYED, QUICKLY BECAME AN 'INVALUABLE ASSET'

In January this year, the U.S. Navy deployed Northrop Grumman's MQ-4C Triton to Guam. The deployment is a first for the high-altitude, long-endurance (HALE) maritime intelligence, surveillance and reconnaissance system. The Guam deployment is part of an early operational capability and will enable the U.S. Navy to further develop concepts of operation for employment of the system in the maritime environment, as well as fleet learning for operating and maintaining the HALE ISR platform. The U.S. Navy declared the system as EOC in early May following its first sortie tasked by Commander, Task Force 72, 7th Fleet's maritime patrol and reconnaissance command, and acknowledged Triton is already becoming an "invaluable asset." Two aircraft have flown more than 765 hours since Unmanned Patrol Squadron One Nine (VUP-19) deployed from Naval Air Station Ventura County, Calif.

"Triton is quickly providing vital information to operational users," said Doug Shaffer, vice president, Triton programs, Northrop Grumman. "This game-changing, persistent system is going to revolutionize the Navy's maritime ISR capabilities by providing an unprecedented amount of data to inform critical decision making." While the inaugural deployment and ensuing EOC declaration are critical milestones, Northrop Grumman's Triton program has faced challenges in 2020. The Department of Defense's budget request for Fiscal Year 2021 includes a two-year production pause on Triton in 2021 and 2022, posing a significant risk to the program's ability to keep costs low and deliveries on track. "A two-year gap in production would have significant negative effects on the production line and the supplier base," Shaffer said. "A pause would mean we risk losing the lessons learned that have enabled our suppliers and Northrop Grumman to achieve production efficiencies and get to this mature point of the program, which would then add more risks and costs to the program. We estimate that stopping and restarting the line alone will cost roughly $150 million and then each aircraft likely costs about $20 million more. Consequently, we are talking to Congress and our Navy customer about opportunities to sustain the production line, protect our suppliers and support the program long-term." Australia is part of a cooperative

development program with the U.S. Navy for the Triton program and was key in the requirements development phase of the system. The system being acquired by the Royal Australian Air Force will be identical to the U.S. Navy's which will enable Australia to establish a 'sixth orbit', adding to the U.S. Navy's planned five operational orbits around the globe to maintain surveillance in some of the most strategically important locations.

"We have had multiple discussions with the U.S. Navy and Australia about options to help fill the FY '21 and '22 production lines with Australian aircraft," Shaffer said. "An acceleration of the Australian program would result in significant savings to Australia and ensure cost savings to the U.S. Navy by helping prevent a pause in Triton production. While any decision to accelerate the Australian program is between the U.S. Navy and Australia, we are prepared to provide the necessary support to an accelerated Australian program." The Australian National Security Committee (NSC) announced approval for acquisition of the first Triton aircraft, one main operating base (MOB) and a forward operating base (FOB) in June 2018. A second Australian aircraft was authorized in March 2019, and a third Triton aircraft and an additional MOB in June 2020. Australia also finalized all necessary contracts for three aircraft, two MOBs and one FOB in June. Australia is currently scheduled to receive their first Triton in late 2023, and stands to receive all six of their Tritons by 2025 if the NSC opts to approve the remainder of their program of record six (potentially seven) aircraft by then end of 2020. Northrop Grumman is currently scheduled to begin production of Australia's first aircraft next month.

For both the United States and Australia, Triton will represent a massive leap in available maritime ISR capability. At a time during regional tensions in the Pacific and South East Asia, Triton's ability to see more, hear more and share more has never been so valuable. The two Tritons currently deployed to Guam are in the integrated functional capability three configuration (IFC-3), or the baseline configuration of the system. As part of Triton's roadmap to replace the EP-3 Aries as the Navy's multi-intelligence maritime ISR platform, the system will be upgraded with a robust signals intelligence capability in the IFC-4 configuration. Two Triton aircraft located at Naval Air Station Patuxent River are currently being upgraded to the IFC-4 configuration along with other assets located at Northrop Grumman's Palmdale Aircraft Integration Center. The Patuxent River aircraft are the first two to be brought into the IFC-4 configuration for use in the flight test program, with the first aircraft already conducting post-upgrade tests. "2020 has been, and will continue to be, a year of significant milestones for Triton," concluded Shaffer. "Our partnerships with the U.S. Navy and Royal Australian Air Force have been crucial in shaping the future of this program, and Triton will have a significant impact on the future of both forces' approach to mission execution."

Source: aerotechnews.com; 30 September 2020

GREECE'S SOUDA BECOMES THE HOME PORT FOR GIGANTIC US SHIP

- Tasos Kokkinidis

The huge troop-carrying ship USS Hershel "Woody" Williams has been deployed to Souda Bay naval base in Crete as of October 1, the U.S. Sixth Fleet announced. It is the first time in 40 years that a US ship will use the joint US-Greece base as a homeport, Stars and Stripes reported. The ship shifted its homeport from Norfolk, Va., to Souda Bay in order to conduct missions in the Mediterranean, and the waters around East, South, and West Africa, to include the Gulf of Guinea operating with regional partners. "Hershel 'Woody' Williams provides a new capability in the theater, which enhances our interoperability with our partners across the spectrum of maritime operations," said Vice Adm. Gene Black, commander, US Sixth Fleet. "The unique design of the ship fosters inter-service operations with our US Marine Corps and Special Operations communities, which improves our ability to ensure maritime security and stability." The ship, at 784 feet long, carries a crew of 240 and is designed to serve as a modular platform to perform large-scale logistics movements, including the transfer of troops, vehicles, and equipment from sea to shore. The Puller class of expeditionary sea base ships is designed to reduce dependency on foreign ports and provide support if no ports are available.

Symbolic warning to Turkey?

Analysts say that the ship's deployment could serve as a symbolic warning that the United States is frustrated with Turkey — including its incursions into Syria, its relationship with Russia in purchasing air defense systems, and its insistence on drilling for minerals in eastern Mediterranean Sea areas controlled by Greece. The arrival of the ship could be a prelude to a US military buildup at Souda Bay, which could become an alternative to the US Air Force's use of the Incirlik Air Base in Turkey, where nuclear weapons are reportedly stored. The recent visit of US Secretary of State Mike Pompeo to Crete has reinforced a notion expressed by senior Wisconsin Senator Ron Johnson, who chairs the Senate Foreign Relations subcommittee for Europe: that US officials are considering exchanging its facilities at Incirlik Air Force base in Turkey with an extension of the US Naval base in Souda Bay, Crete. However, the Pentagon has not yet released any information suggesting that.

Source: greece.greekreporter.com; 03 October 2020

SHIPPING, PORTS AND OCEAN ECONOMY

EXXON MOBIL'S $5-BILLION LNG POWER PLANT GETS GREEN LIGHT

- Dat Nguyen

The northern port city of Hai Phong has given approval to Exxon Mobil to build a liquefied natural gas-fired power plant The city People's Committee said in a recent statement that the $5.09 billion plant will be built in two phases, each with a capacity of 2.25 gigawatts, the first going on stream in 2026-27 and the second three years later. The project will also include a terminal with a capacity of six million tonnes of LNG. In June the government had said it welcomed the U.S. company's plans to invest in the country, adding that a power project in Hai Phong could use LNG imported from the U.S. or other countries.

Hai Phong has also approved another LNG power project costing $1.9 billion and with a capacity of 1.6 GW, but no further details are known. The government is drafting a new national power development plan for the next decade that will include 22 LNG power plants with a combined capacity of up to 108.5 GW, the first of which will be commissioned in 2023.

Source: e.vnexpress.net; 03 October 2020

EXXONMOBIL TO PROCEED WITH $9B PAYARA DEVELOPMENT OFFSHORE GUYANA

- Paul Chai

ExxonMobil has made its final investment decision to proceed with the Payara field offshore development in Guyana after receiving government approvals. Payara is the third project in the Stabroek Block and is expected to produce up to 220,000 barrels of oil per day after startup in 2024, using the Prosperity floating production, storage and offloading (FPSO) vessel. (Earlier post.)

The $9-billion development will target an estimated resource base of about 600 million oil-equivalent barrels. Ten drill centers are planned along with up to 41 wells, including 20 production and 21 injection wells. Production is slated to begin in 2024,

with an ultimate production capacity of 220,000 barrels per day. ExxonMobil's first offshore Guyana project, Liza Phase 1, began producing in late 2019, well ahead of the industry average for development time. Liza Phase 2, remains on track to begin producing oil by early 2022. It will produce up to 220,000 barrels of oil per day at peak rates using the Liza Unity FPSO, which is under construction in Singapore. ExxonMobil is evaluating additional development opportunities in the Stabroek Block, including Redtail, Yellowtail, Mako and Uaru resources, and plans to have five drillships operating offshore Guyana by the end of this year.

As new projects proceed, investment in the Guyana economy increases. More than 2,000 Guyanese are now supporting project activities on and offshore—a 50% increase since 2019. ExxonMobil and its prime contractors have spent more than $300 million with more than 700 local companies since 2015. More than 2,500 Guyanese companies are registered with the Center for Local Business Development, which was founded by ExxonMobil and its co-venturers in 2017 to build local business capacity to support global competitiveness. The Stabroek Block is 6.6 million acres (26,800 square kilometers) with current discovered recoverable resources estimated at more than 8 billion oil-equivalent barrels. The 18 discoveries on the block to date have established the potential for at least five FPSO vessels producing more than 750,000 barrels of oil per day by 2026. ExxonMobil affiliate Esso Exploration and Production Guyana Limited is operator and holds 45% interest in the Stabroek Block. Hess Guyana Exploration Ltd. holds 30% interest and CNOOC Petroleum Guyana Limited, a wholly-owned subsidiary of CNOOC Limited, holds 25% interest.

Source: greencargoes.com; 21 September 2020

COVID-19: MUI COLLABORATES WITH UN BODY TO HELP INDIAN SEAFARERS STRANDED ON SHIPS

- PTI

NEW DELHI: Against the backdrop of the COVID-19 pandemic leaving around four lakh global seafarers, including thousands of Indians, stranded on ships, India's oldest union of merchant navy officers MUI has collaborated with the United Nations to assist these sailors. The Seafarers Crisis Action Team (SCAT) has been established by the International Maritime Organisation (IMO), a specialised UN agency and a global standard-setting authority of safety, security and environmental performance of international shipping. "The COVID-19 pandemic has put seafarers around the world in precarious situations. Some 4 lakh seafarers from across the globe, including thousands of Indian seafarers, are now stranded on ships and continuing to work but unable to be relieved in a deepening crew change crisis which threatens trade and maritime safety," said the Maritime Union of India (MUI).

Travel restrictions mean some cannot leave their ships or be repatriated home, or even get urgent medical assistance, it said and added that others have seen their contracts unilaterally terminated or have been quarantined onboard ships for more than 14 days, without getting paid. Despite multiple pleas to governments across the globe to designate seafarers as essential key workers and to facilitate their travel, the number of seafarers whose contracts have been extended by several months has continued to increase, the MUI added. "Some seafarers have now been at sea for around 18 months without a break, well beyond the 11-month limit set out in the Maritime Labour Convention. Besides, the four lakh seafarers stuck at sea, another four lakh are unable to join ships," it said. The body said that under the circumstances, India's oldest union of merchant navy officers has announced to "collaborate with the UN to help resolve individual cases of Indian seafarers through SCAT established by the IMO". "Over 37,000 seafaring members of MUI will, fortunately, get benefitted by the UN's SCAT mechanism as our Union is affiliated to London-headquartered International Transport Workers' Federation which closely works with the IMO," Amar Singh Thakur, General Secretary, MUI, told PTI. Thakur added: "Apart from providing assistance to the Indian seafarers under IMO's SCAT mechanism, MUI will also closely liaise with the Ministry of Shipping of India and Indian embassies and consulates across the globe for offering assistance to Indian seafarers during difficult times." Expressing serious concerns over some seafarers stuck at sea for about 18 months without a break, Thakur said this threatens the fundamentals of ship safety standards which the IMO has worked to develop for the past six decades. "Overly tired and mentally exhausted seafarers are being asked to continue to work aboard over 60,000 cargo ships across the globe. The safety of navigation is in peril, unfortunately," Thakur emphasized. In the prevailing scenario, the MUI through the SCAT mechanism will provide round-the-clock advice, counseling, and assistance to Indian seafarers and their family members, he said.

Source: newindianexpress.com; 27 September 2020

USCG Cleans Up Wrecked and Sunken Vessels After Hurricane Sally

When Hurricane Sally made landfall in Alabama as a Category 2 hurricane in mid-September, it caused widespread damage to commercial and recreational vessels across both Alabama and Florida, according to Coast Guard Sector Mobile. The response to that damage is now fully under way. On Tuesday, the sector's hurricane response effort shifted to a maritime environmental response focused on vessel pollution cleanup and salvage operations.

“It’s important to understand the gravity of this situation,” said Cmdr. Kelly Thorkilson, Coast Guard Hurricane Sally incident commander. “We have identified more than one hundred vessels actively releasing pollution into the marine environment, and we need to continue to work closely with the community and partner agencies to ensure the cleanup process is conducted safely and effectively.” The USCG

is encouraging vessel owners to hire a commercial salvage company to recover their boats, which will ensure the safest removal method possible for the public and environment. Lost or abandoned vessels should be reported to local law enforcement offices to complete a "found property claim."

Specific areas affected by environmental pollution include a half-mile stretch of the Gulf Islands National Seashore on Perdido Key, Florida. The Coast Guard has assessed and collected samples from the area and is awaiting results. Its responders are working with the National Park Service and National Oceanic Atmospheric Administration to address cleanup operations and reduce environmental impact.

Source: maritime-executive.com; 30 September 2020

IMO STILL RESTORING SYSTEMS AFTER CYBER ATTACK

- Riviera News

IMO has released a statement saying its security and IT teams are continuing to try to bring systems back on line as soon as it is safe to do so.

The full text of the updated statement is below, and the original report from the incident follows.

The interruption of web-based services was caused by a sophisticated cyber-attack against the organization's IT systems that overcame robust security measures in place. IMO has ISO/IEC 27001:2013 certification for its information security management system. IMO was the first UN organization to get this certification in 2015. The IMO Headquarters file servers are located in the UK, with extensive backup systems in Geneva. The backup and restore system is regularly tested. Following the attack, the Secretariat shut down key systems to prevent further damage from the attack. The Secretariat is working with UN International Computing Centre (UN ICC) and security experts to restore systems as soon as possible, to identify the source of the attack, and further enhance security systems to prevent recurrence. Since yesterday (01/10/2020), service has been restored to the GISIS database; IMODOCS; and Virtual Publications. For security reasons, these systems were not available for a few hours early this morning but they are now back up and running. Service will be restored to other web-based services as soon as possible and as safe as possible. The Secretariat takes its responsibilities for cyber risk management and information security management extremely seriously and has acted immediately to address the cyber attack and to implement measures to ensure the risk of recurrence is minimised.

01/10/2020:

In addition to its public website, IMO said a number of its web-based services are currently unavailable. The United Nations shipping organsiation added that its internal and external emails are working as normal and service has been restored to the Global Integrated Shipping Information System (GISIS) database, IMODOCS and virtual publications. The cyber attack on IMO is the second high profile cyber security breach to hit the shipping industry within a few days. On 28 September container shipping giant CMA CGM suffered a security breach to its peripheral servers, causing the company to shut down access to its online services. The company said it has since isolated the malware at the root of the attack but said it suspects a data breach occurred in the attack. In a statement and on its Twitter feed, IMO said it is currently working with UN IT and security experts to restore systems as quickly as possible, to identify the source of the attack, and enhance security systems to prevent a recurrence.

Source: rivermm.com; 02 October 2020

WORLD'S FIRST CNG TERMINAL TO COME UP IN GUJARAT'S BHAVNAGAR

Gandhinagar Sep 15 (IANS): The Gujarat Chief Minister Vijay Rupani on Tuesday said Bhavnagar will become the first Compressed Natural Gas (CNG) terminal in the world, as the government has given its sanction to the Rs 1,900 crore brownfield project.

The terminal will have a capacity of 15 lakh tons annually.

He said the state government has given the sanction and the Rs 1,900 crore project and will be developed by a Consortium of developers, including the Padmanabh Mafatlal Group and one from the Netherlands. According to the information given by the government, Rs 1,300 will be invested in the first phase of the brownfield port project. The project is a part of an ambitious mega project of developing Bhavnagar, where a liquid cargo terminal having a capacity of 45 lakh Container and White cargo terminal and RO RO ferry services terminal, would be developed. To develop this terminal, dredging and construction of two lock gates will be carried out in the channel and port basin. Infrastructural facilities will be set up on the shore for CNG transportation. Due to the project, Bhavnagar port's annual cargo capacity will be raised to nine million metric tons (MMT).

The Chief Minister informed that Gujarat will be the only state in the country, which will have terminals for both CNG and LNG (with LNG terminals at Dahej and Hazira). According to the state government, the project will create vast employment opportunities for Bhavnagar and adjoining area youth in logistics, transportation and warehousing.

Source: daijiworld.com; 15 September 2020

MARINE ENVIRONMENT

A TALE OF MANGROVE MIGRATION

- Aswathi Pacha

In 2008, Punarbasu Chaudhuri, mangrove ecologist from the University of Calcutta spotted an interesting mangrove plant at the bank of river Hooghly inside Kolkata city. It was quite unusual, as mangroves require a cyclic supply of saline water, and this growth at an upstream zone was remarkable. He then started an investigation on their distribution in the Hooghly estuary, and his recent paper suggests that the mangroves have started moving upstream, growing in less-saline regions.

Redistributing plants

After surveying the banks near Kolkata, he was able to spot a few mangroves belonging to the genus Sonneratia. He says that over the years due to gradual environmental changes and anthropogenic activities, mangroves have started to redistribute. The paper, published in Marine Pollution Bulletin, notes that they have reclaimed even the upper course of the river, which was completely devoid of mangroves before 1995. His team spent years mapping the distribution of mangroves and associated species using ground surveys and satellite data. They also studied the sediments and water samples along the river banks. “With the rapid growth of Kolkata city, sewage disposal has increased the pollution load in the river waters. Globally, there is also rapid mean sea-level rise. All these factors might have played a role in this upstream migration,” explains Dr. Chaudhuri who is with the University of Calcutta’s Department of Environmental Science.

Associates found

The team saw that between Barrackpore and Birlapur, in a non-saline region, about 239 mature trees and numerous saplings of Sonneratia caseolaris (commonly known as mangrove apple) have grown naturally. They were just four to five years old with fruits and flowers, exhibiting luxuriant growth. The team also found the redistribution of several other mangrove associate trees, shrubs and climbers in that region. “This is

not welcome news. They directly indicate changes in the micro-environment. The rate of sedimentation, quality of the sediment and biogeochemistry of the river has all been affected by elevated anthropogenic activities and global climate change events," says Somdeep Ghosh, first author of the paper who completed his PhD under the guidance of Dr. Chaudhuri from the University of Calcutta.

Change in ecology

The team emphasised the fact that the construction of Farakka Barrage in 1975 has increased fresh water flow in River Hooghly, thereby causing change in ecology and chemistry of the river. They also found high chemical oxygen demand in the river because of increased release of harmful chemicals from multiple point and non-point sources. Studies from China have shown that Sonneratia caseolaris grow well in the presence of high chemical oxygen demand of water.

"This shows the potential of Sonneratia caseolaris to act as a bio-indicator of regional environmental changes. The decline in the mangrove area along with this migration may increase the amplitude of coastal hazards such as storm surges, erosion and flooding. More studies are needed to understand in detail this new horizon of mangrove adaptation and dispersion ecology. We are also planning to study more rivers in this region to get a detailed picture of this migration," adds Dr. Chaudhuri.

Source: thehindu.com; 03 October 2020

NEW STUDY REVEALS GLOBAL WARMING IS AFFECTING NIGHT-TIME TEMPERATURES DIFFERENTLY

- Mike McRae

From the poles to the tropics, the oceans to our cities, we've mapped the fluctuations in temperature that are leading to a climate crisis. But strangely, little attention has been paid to the world's circadian landscapes of night and day. And a new study shows our nocturnal environment is actually warming at a faster rate than our daytime surrounds - and it could prove too much for many species. After analysing more than three decades of daily temperature data from all over the world, researchers from the University of Exeter have concluded there's an asymmetry in our planet's warming as it rotates on its axis.

The climate records spanned from 1983 to 2017, providing the team with a hefty database of six-hourly surface temperature readings covering virtually the entire planet during some of the warmest years in recorded history. In some spots, the days warmed considerably while night time temperatures barely budged. There were even times of considerable cooling for some environments.

But the bigger picture was surprising. Across more than half of the planet's land surface, the average annual temperature rise at night was a quarter of a degree Celsius

more than that of the day's. A fraction of a degree each year might sound tiny, but over time these increments of heat could add up to have a significant effect on the ecology. "Species that are only active at night or during the day will be particularly affected," says ecologist and lead author, Daniel Cox from the University of Exeter. To get a better understanding of the environmental forces at work, the team also collected a bunch of data on other related climate factors such as humidity and precipitation.

They also compared regional differences in vegetation growth. Putting it together, something as simple as more cloud cover could easily account for the imbalance in heating. Global warming traps extra amounts of energy close to the planet's surface, encouraging the atmosphere to hold moisture which then condenses into clouds. There's no real secret there.

We also know clouds do a great job of reflecting certain wavelengths of light, either away into space or back down to the ground. During the day, this can help shield the surface from the full blast of sunlight, keeping a bit of a lid on temperatures. Without this shading effect, we could expect our planet's surface to roast. At night, the process is reversed. Heat radiating from the ground has a harder time making it into space, keeping the surface a touch warmer. We've all felt the chill of a cloudless winter night to understand the basic mechanism, but having hard data can help us better model what we might expect in coming years. Putting aside variations in temperature change across different locations through time, changes in temperature variation between night and day could have a profound impact on rainfall, which in turn determines how well plants grow.

Even with a general increase in rainfall, extra cloud cover during the day risks reducing the amount of light plants need to photosynthesise. "Warming asymmetry has potentially significant implications for the natural world," says Cox. "We demonstrate that greater night-time warming is associated with the climate becoming wetter, and this has been shown to have important consequences for plant growth and how species, such as insects and mammals, interact." Understanding the full implications of daily fluctuating temperatures and cloud formation is going to take a lot more research. Clouds can be surprisingly complex phenomena, especially when we take into account greenhouse gases, the influence of dust levels, and even less Earth-bound variables. Knowing how much they'll help or hinder our efforts to limit rising temperatures isn't a simple question to answer.

This research was published in Global Change Biology.

Source: sciencealert.com; 04 October 2020

'GREEN HYDROGEN' FROM RENEWABLES COULD BECOME CHEAPEST 'TRANSFORMATIVE FUEL' WITHIN A DECADE

- Adam Morton

"Green hydrogen" made with wind and solar electricity could become the cheapest form of what the Australian government has described as a "transformative fuel" much faster than expected, analysts believe. Chinese manufacturers have reported making systems to create hydrogen with renewable energy for up to 80% less than official Australian estimates from just two years ago. Energy analysts said it suggested green hydrogen was likely to leapfrog hydrogen made with gas and coal as the most cost-effective form of the energy before the end of the decade, and by the time an industry could be developed at scale.

The government has nominated "clean hydrogen" as a priority low-emissions technology that could eventually help replace fossil fuels in transport, electricity and in industrial processes as the world moves to cut greenhouse gas emissions. But it has not defined what "clean hydrogen" would mean in terms of emissions. Its recent low-emissions technology statement forecast the cheapest way to produce it in the short-term might be to use gas or "coal gasification" with carbon capture and storage (CCS). It said production methods using renewable energy would become cheaper as demand grew. But an analysis by BloombergNEF has found electrolysers used in China could already be as little as a fifth of the cost estimated in a CSIRO roadmap released in 2018, which has been used as the basis for government estimates. The consultancy suggested green hydrogen could cost less than $2 a kilogram – the "stretch goal" nominated by Angus Taylor, the energy and emissions reduction minister, at which the fuel would become competitive with existing technologies – before 2030.

"We think electrolysers can get much cheaper much sooner than most expect," said Kobad Bhavnagri, BloombergNEF's Sydney-based global head of industrial decarbonisation. "The way we see it is there is very little demand for hydrogen from fossil fuels with CCS. It doesn't fit the scale-up model for an emerging industry." The International Renewable Energy Agency last year also acknowledged in a report last year that Chinese manufacturers had claimed electrolysers were already available for a cost that had been considered a best-case scenario for 2040. The government estimates hydrogen could create more than 8,000 jobs and generate about $11bn a year in GDP by 2050. Major economic powers including Germany and Japan are eyeing Australia as a potential source of hydrogen as the world moves away from fossil fuels, in line with the goals of the Paris agreement.

Germany has dedicated more than A$15bn of Covid-19 stimulus spending to developing a domestic hydrogen industry, and has agreed with Australia to undertake a joint feasibility study into its potential as an energy source. The European Commission recently launched a strategy that positions green hydrogen as central to the continent's goal to reach "climate neutrality" – net zero emissions – by 2050. In Australia, the most ambitious proposal to date is for what is known as the Asian Renewable Energy Hub. Planned for the Pilbara, its scale is extraordinary: 1,600 large wind turbines and a 78 sq km array of solar panels working to power 14 gigawatts of hydrogen electrolysers. Speaking at an online summit hosted by the Smart Energy Council this week, the hub's executive director, Alex Hewitt, said the scale of the proposed development – which he described as the world's largest power plant – meant it could create green hydrogen for less than the government's benchmark of $2 a kilogram. "That's the beauty of very intense, massive, properly correlated renewable

energy," he said. The hub plans to largely use the hydrogen to create "green ammonia", effectively replacing gas in the ammonia production process. Hewitt said ammonia was "a great way to ship hydrogen" as transporting it as a liquid was likely to be both logistically challenging and much more expensive.

The Greens leader, Adam Bandt, has written to the CSIRO asking it to update its 2018 analysis on the basis that recent contract prices for green hydrogen are already about 50% less than the best-case scenario the science agency had projected for 2025.

Bandt said CSIRO was not at fault – the green hydrogen industry has developed rapidly – but he was concerned the government would neglect the zero emissions option in its plan in favour of fossil fuels and miss economic opportunities if forecasts were not updated. "With green hydrogen, Australia can export our sunlight," Bandt said. "There is no point having a technology roadmap if the figures are all wrong. Up-to-date estimates are critical to making policies that benefit users and support the job-creating industries of the future." A spokesperson for Taylor responded: "Why would the government listen to Adam Bandt over CSIRO and the chief scientist?" Green hydrogen is created by using an electrolyser to run an electrical current through water, separating it into hydrogen and oxygen. Gas is used to make hydrogen through a different process involving high-pressure steam and a catalyst such as nickel, known as steam-methane reforming. One of its by-products is carbon dioxide, which is either released into the atmosphere or – under the government's proposal – captured and pumped underground. The hope is that hydrogen will prove an emissions-free alternative to coal and gas in industries that operate at incredibly high temperatures. While estimates about the scale of a future industry vary significantly, experts believe it is likely to be more cost effective if used to help create local green industries, such as emissions-free steel, rather than converted into liquid form, as gas is, before it is exported. Bloomberg NEF projected that green hydrogen would cost US$1.33 a kilogram by 2030, falling to about $0.76 a kilogram by 2050.

By comparison, it suggested hydrogen created using gas with CCS was likely to cost about $1.92 a kilogram at both dates assuming gas prices stayed cheaper than it had been in recent years, and using coal with CCS would cost US$2.51 a kilogram. Alan Finkel, the chief scientist and head of the council advising the government on its technology roadmap, has recommended a "certificate of origin" be attached to every kilogram sold that listed how much CO2 had been emitted in its creation. In an interview with the ABC, he said no country would buy hydrogen that was not "clean", as the industry was being developed specifically as a replacement for fossil fuels, and some countries had indicated that included creating it using fossil fuels and CCS. But, he said: "I think realistically the scale of hydrogen made from solar and wind is going to precede any other source."

Source: theguardian.com; 02 October 2020

RISING TEMPERATURES MAKING OCEANS STABLE, REDUCING CARBON ABSORPTION CAPACITY WARNS SCIENTISTS

- Agence France Presse

Global warming is making the oceans more stable, increasing surface temperatures and reducing the carbon they can absorb, according to research published Monday by climate scientists who warned that the findings have "profound and troubling" implications.

Man-made climate change has increased surface temperatures across the planet, leading to atmospheric instability and amplifying extreme weather events, such as storms. But in the oceans, higher temperatures have a different effect, slowing the mixing between the warming surface and the cooler, oxygen-rich waters below, researchers said. This ocean "stratification" means less deep water is rising towards the surface carrying oxygen and nutrients, while the water at the surface absorbs less atmospheric carbon dioxide to bury at depth.

In a report published in the journal Nature Climate Change, the international team of climate scientists said they found that stratification globally had increased by a "substantial" 5.3 percent from 1960 to 2018. Most of this stabilisation occurred towards the surface and was attributed largely to temperature rises. They said this process is also exacerbated by the melting of sea ice, meaning that more freshwater — which is lighter than saltwater — also accumulates on the surface of the ocean. Study co-author Michael Mann, a climate science professor at Pennsylvania State University, said in a commentary published in Newsweek that the "seemingly technical finding has profound and troubling implications."

These include potentially driving more "intense, destructive hurricanes" as ocean surfaces warm. Mann also pointed to a reduction in the amount of CO2 absorbed, which could mean that carbon pollution builds up faster than expected in the atmosphere. He warned that sophisticated climate models often underestimate ocean stratification and may also be underestimating its impact. With warmer upper waters receiving less oxygen, there are also implications for marine life. By absorbing a quarter of man-made CO2 and soaking up more than 90 percent of the heat generated by greenhouse gases, oceans keep the population alive — but at a terrible cost, according to the Intergovernmental Panel for Climate Change (IPCC). Seas have grown acidic, potentially undermining their capacity to draw down CO2. Warmer surface water has expanded the force and range of deadly tropical storms. Marine heatwaves are wiping out coral reefs and accelerating the melt-off of glaciers and ice sheets driving sea-level rise. Last year, research published in the US Proceedings of the National Academy of Sciences calculated that climate change would empty the ocean of nearly a fifth of all living creatures, measured by mass, by the end of the century.

Source: firstpost.com; 29 September 2020

THE OCEANS ARE ABSORBING MORE CARBON THAN PREVIOUSLY THOUGHT

- Dr Jamie Shutler and Prof Andy Watson

The oceans cover over 70% of the Earth's surface and play a crucial role in taking up CO_2 from the atmosphere. Estimates suggest that around a quarter of CO_2 emissions that human activity generates each year is absorbed by the oceans. However, in our recent Nature Communications paper, we show that the ocean carbon "sink" could be even larger. We find that the very surface of the ocean tends to be markedly cooler than the water at a few metres depth, resulting in a substantially larger net uptake than previously thought. Our findings have implications for our accounting of the CO_2 we are emitting – namely, where does the large fraction of CO_2 that is taken up each year by "natural" sinks actually go?

Net sink

Each year, the Earth's surface takes up billions of tonnes of CO_2 from the atmosphere. These natural carbon sinks – oceans, plants and soils – help to buffer the continued emissions from human activity. The ocean absorbs CO_2 from the atmosphere because, as the atmospheric concentration increases, more is dissolved in the surface water. This water may then mix down, or sink as it is cooled, into the deep sea where the absorbed CO_2 can stay locked up for hundreds of years as it slowly moves through the deep interior ocean and back to the atmosphere. But the oceans have not always been a carbon sink. Before the industrial era, the ocean was actually a net source of CO_2. However, the increasing atmospheric CO_2 concentrations, driven by human-caused emissions are forcing the ocean to now absorb this gas. While the ability of the ocean to capture and store carbon has helped to slow the accumulation of atmospheric CO_2 – and, hence, the pace of global warming – it has come at a cost. Increasing CO_2 in the ocean alters the chemistry of seawater – an effect known as ocean acidification – which has negative impacts on marine life.

New observations

Each year, the global carbon budget is assessed to track how well, or not, humanity is achieving any reductions in greenhouse gas emissions. This assessment involves calculating sources and sinks of CO_2 across the world and determining the change in atmospheric CO_2 concentrations. Estimating the ocean sink is clearly needed to complete this assessment, but its importance has a knock-on impact for other parts of the overall budget. The huge variations in land cover, vegetation, terrain and their year-to-year variations mean that it is currently very difficult to measure the total global land sink accurately. Solving this issue is complex and complicated. However, it can be estimated indirectly. Scientists can calculate the total human-caused emissions and observe how much of this CO_2 stays in the atmosphere. The remainder must have been absorbed by either the land or the ocean. So a good estimate of the

ocean sink also enables calculation of how much is being taken up by the vegetation on land. Put simply, the CO2 that goes missing that doesn't go into the ocean, must go into the land. Nonetheless, quantifying the carbon absorbed by the vast oceans – whilst they are less variable when compared to the land – is still a complex problem. It requires measurements and observations from a range of sources including ships, buoys and even satellites. Thankfully, satellite measurements are now becoming much easier to access as European and international agreements have made these widely available to scientists. Such satellites have many uses, including ocean weather forecasting, so they are well maintained. The situation is a little different for measuring how much CO2 seawater contains, as these measurements are collected by researchers and then voluntarily collated into the Surface Ocean CO2 Atlas (SOCAT). These – along with the other observations – form a critical part of our ability to determine the oceanic sink. Each year more than a million new measurements are added to SOCAT; a herculean effort involving scientists throughout the world.

Oceanographers and chemists working together

While previous estimates put the ocean sink at around 2bn tonnes of CO2 per year, we find that it could be 0.8-0.9bn tonnes larger. Over the whole 27-year study period of 1992-2018, this means the global oceans have taken up 67bn tonnes of CO2 rather than 43bn. This advance in knowledge resulted from us working closely with specialists in sea temperature, physical oceanography and satellites. They explained that satellite sensors measure the temperature at the very surface of the ocean and that vertical changes in temperature occur near the surface. This means that the temperature at the very surface of the water – its "skin" – is slightly cooler than the water below. This is because the ocean is heated by the sun and must get rid of this heat by evaporation and radiation from its skin. We realised that this meant that the CO2 in the water will also change near the surface, as the solubility of CO2 in the water is highly temperature dependent.

Though the temperature difference is usually quite small, it is systematically in one direction over most of the world's oceans, resulting in a larger amount of CO2 entering the water. These temperature characteristics are well studied in oceanography and they teach this theory on undergraduate degree programmes, but no one had clarified its full impact on carbon. Ironically, this issue had been partly highlighted by marine carbon researchers and published in the journal Nature in 1992, but all of this information had since been ignored. Our earlier work focused just on 2010 – and now on 1992-2018 – and brings all of this cross-disciplinary knowledge together. Our new study shows that the results are consistent with an independent method for calculating how much carbon has entered the ocean.

Implications of a larger ocean carbon sink

A larger ocean sink could imply that CO2 emissions are larger than currently thought or that the land sink is smaller than we currently think. The sink seems to be increasing with time, especially in the last 20 years, and we believe this is because atmospheric CO2 has continued to rise rapidly, dissolving more every year into the surface waters. You can see this in the charts below, which show the ocean-atmosphere exchange of

CO_2 over the study period for the whole world (top) and the northern and southern hemispheres (bottom). The coloured lines show different estimates, while the thick black line shows the average. Following convention, the uptake of CO_2 into the ocean is shown as negative, so descending lines indicate that the ocean is absorbing more CO_2. Our findings may also mean that the exchanges of carbon between the ocean and land – including those from large rivers like the Amazon, and that we currently consider to be relatively similar from year to year – are in fact more variable. The answer will be difficult to determine, but is likely to need a cross-disciplinary approach involving modelling, satellite and ship-based scientists. Accounting for these new results will also likely involve some revision to the way in which we quantify global carbon budgets.

Source: weforum.org; 01 October 2020

CLIMATE CHANGE REFERENCE CURVE SPANNING 66 MN YEARS MADE USING OCEAN SEDIMENTS

- Dr Jamie Shutler and Prof Andy Watson

Researchers have revealed in intricate details the changes in the Earth's climate over the last 66 million years. The team highlighted four distinctive climatic states and the natural million-and thousand-year variability that Earth's climate has experienced. The new global 'climate reference curve' was created by a team of researchers from 12 international laboratories and is the first record to trace how Earth's climate has changed since the extinction of dinosaurs 66 million years ago.

The research was led by scientists from MARUM — Center for Marine Environmental Sciences at the University of Bremen, the Potsdam Institute for Climate Impact Research (PIK) and UCL. In a statement issued by the Potsdam Institute for Climate Impact Research (PIK), researchers revealed that they compiled and analysed a comprehensive dataset obtained from sediment cores from the ocean floor to obtain the results. First author Thomas Westerhold of MARUM explained that the goal was to create a new reference of past climate over the last 66 million years. “We now know more accurately when it was warmer or colder on the planet, and we also have a better understanding of the underlying dynamics," Westerhold added.

Norbert Marwan of PIK went on to reveal that their mathematical analyses revealed the hidden relationships and recurring patterns in the climate, adding that they can learn something about the "rapid anthropogenic changes of our present century from the slow natural climate fluctuations occurring over millions of years." The study authors with the help of advanced mathematical analysis identified four climatic states, classified as “Hothouse,” “Warmhouse,” “Coolhouse,” and “Icehouse.” Each state is recognised by the characteristic pattern of climate variability and the distinctive climactic 'beat' of each state is driven by greenhouse gas concentrations and

polar ice volume, with higher CO2 and almost no global ice volume during the Hothouse and Warmhouse compared to Coolhouse and Icehouse.

The new climate reference curve has been named CENOGRID (CENOzoic Global Reference benthic foraminifer carbon and oxygen Isotope Dataset). It is a reconstruction of the Earth's climate since the last great extinction 66 million years ago, which introduced a new Era, the Cenozoic. According to Marwan, this kind of analysis also makes it possible to draw inferences about the probability of events, provided there is a large amount of data and long data series. In future, the new climate reference curve CENOGRID can serve as a basis for researchers around the world to accurately correlate their data within the context of climate history.

The results of the study have been published in the journal Science.

Source: firstpost.com; 01 October 2020

GEOPOLITICS

VENEZUELA'S CRUDE OIL INDUSTRY MAY NEVER RECOVER

- Matthew Smith

Despite President Maduro's claims of a looming recovery for Venezuela's economically crucial oil industry in early 2020 production keeps declining. Even measures aimed at revitalizing the industry and circumventing U.S. sanctions are failing to trigger any sustainable recovery. According to the latest OPEC Monthly Oil Market Report, August 2020 oil output remained flat compared to a month earlier at 340,000 barrels daily. This comes on the back of Maduro's ongoing tussles with opposition leader, and U.S. backed interim president Juan Guaidó, for control of the opposition led National Assembly. Those are intensifying as the elections for the parliamentary body approach, which are scheduled to be held on 6 December 2020. The reasons for this conflict are quite simple; Maduros' desire to control Venezuela's last independent legislative institution, the National Assembly, which is the only government body that can legally approve oil-licensing deals. Venezuela's worsening economic collapse makes it vital for the Maduro regime to revitalize the Latin American country's oil industry, with petroleum being the only real source of income for the beleaguered government. The oil industry is responsible for more than a quarter of Venezuela's GDP and 99% of all exports by value, making it a crucial economic driver. For this reason, the collapse of Venezuela's oil industry has sounded the death knell for its economy plunging it into a deep crisis. This is highlighted by the IMF predicting Venezuela's 2020 GDP will shrink 15%, even after contracting by a massive 25% during 2019.

Despite President Maduro's claims of a looming recovery for Venezuela's economically crucial oil industry in early 2020 production keeps declining. Even measures aimed at revitalizing the industry and circumventing U.S. sanctions are failing to trigger any sustainable recovery. According to the latest OPEC Monthly Oil Market Report, August 2020 oil output remained flat compared to a month earlier at 340,000 barrels daily. This comes on the back of Maduro's ongoing tussles with opposition leader, and U.S. backed interim president Juan Guaidó, for control of the opposition led National Assembly. Those are intensifying as the elections for the parliamentary body approach, which are scheduled to be held on 6 December 2020. The reasons for this conflict are quite simple; Maduros' desire to control Venezuela's last independent legislative institution, the National Assembly, which is the only government body that can legally approve oil-licensing deals. Venezuela's worsening economic collapse makes it vital for the Maduro regime to revitalize the Latin American country's oil industry, with petroleum being the only real source of income for the beleaguered government. The oil industry is responsible for more than a quarter of Venezuela's GDP and 99% of all exports by value, making it a crucial economic driver. For this reason, the collapse of Venezuela's oil industry has sounded the death knell for its economy plunging it into a deep crisis. This is highlighted by the IMF predicting Venezuela's 2020 GDP will shrink 15%, even after contracting by a massive 25% during 2019. There appears to be little that Maduro can do to revive Venezuela's oil industry and curtail the country's complete economic collapse. U.S. sanctions have made it almost impossible for his regime to access global capital and energy markets, forcing Caracas to look elsewhere for the funding and expertise required to restart Venezuela's oil industry. That saw

Moscow become a lender of last resort as Putin seized the opportunity to exert greater influence in Latin America, but it comes at a cost. Moscow has its own national agenda which is focused on reinstating Russia's recognition as a great global power, partly by extending Moscow's international influence by gaining control over Venezuela's vast oil reserves. The financial assistance provided by Russia, with outstanding loans thought to total at least $4 billion, has seen Moscow take control of Venezuelan oil fields and even consider taking a lien over PDVSA's crown jewel, its Citgo refinery business.

Moscow's loans in exchange for oil are doing little to revive Venezuela's economy or crucial oil industry. This is because there is a severe shortage of the capital required to conduct urgent maintenance while rampant corruption and management malfeasance redirects what little funding is available away from development and maintenance activities. Those issues are magnified by the massive outflow of skilled industry workers which was triggered by Venezuela's economic implosion. In a devastating blow for the Maduro regime India in response to tighter U.S. sanctions, aimed at cutting the flow of Venezuelan oil exports, ceased importing crude from the pariah state. That comes after exports to China slowed because of the same sanctions, although Beijing and Moscow along with assistance from Iran have been assisting Caracas in transporting oil to buyers. As a result, Caracas is tightening its relationship with Teheran as it works on overcoming a wide range of obstacles and defeating U.S. sanctions. Recently, Venezuela flew gold to Teheran to pay for cargoes of fuel to stem fuel shortages caused by the breakdown of Venezuela's refining industry. Caracas did the same in April to pay for Iran's assistance with rebuilding its crumbling refineries to provide a longer-term solution to shortages of refined petroleum products, notably gasoline.

The decline of Venezuela's petroleum industry appears terminal.

Russian and Iranian assistance has done nothing to lift oil production, as the August 2020 numbers illustrate, while the volume of operational rigs remains low. Baker Hughes data shows only one operational oil rig for August, although national oil company PDVSA consistently claims that data to be incorrect. The data from Baker Hughes only counts operational rotary rigs drilling for oil. It excludes small truck mounted rigs or those not requiring a permit and does not count rotary rigs being used for well workovers and production testing.

That means there could be a greater number of operational rigs in Venezuela, but they are simply not large enough or engaged in the activities to be counted. If the rig count along with petroleum production represent activity in Venezuela's oil industry, then it appears to be in terminal decline. A major blow for Caracas was Chevron's decision to pare down activities in Venezuela after pressure from the U.S. State Department. Chevron was the only international energy major to maintain a genuine presence in the Latin American country providing Caracas with access to the capital and technology to revitalize its oil industry. Venezuela cannot hope to rebuild its shattered petroleum sector without a massive injection of investment, technology and skilled labor. For as long as U.S. sanctions remain in place, which have the objective of initiating regime change, those requirements will not be met. So far, sanctions have done little to cause Maduro's downfall or foment any major destabilization of his regime's grasp on power. If anything, they have strengthened his grip on power and

forced Caracas to find alternate means of supporting Venezuela's deteriorating and extremely fragile economy including cozying up with other pariah states such as Iran. It appears that Maduro and his supporters in the government are determined to stay the course regardless of the pain being felt by the Venezuelan people.

That means the country's hydrocarbon sector will not recover any time soon, which is a positive development for global energy markets which are experiencing a multi-year supply glut that doesn't appear ready to go away any time soon. This will keep Venezuela's economy crippled with crude oil believed to be responsible for a quarter of its GDP and almost all desperately needed export earnings. As a result, hyperinflation, a lack of basic services, unemployment and starvation will remain the norm for Venezuela's population. The sharp economic decline is preventing Caracas from effectively controlling its territory, allowing non-government armed groups from Venezuela and Colombia to fill the void, sparking further instability which is impacting the oil industry and creating additional hardship for Venezuelans.

Source: oilprice.com; 03 October 2020

EXPLAINED: THE NATURE OF THE CYBER SECURITY THREAT FROM CHINA

- Manraj Grewal Sharma

The Indian Express's 'China is Watching' investigation has spotlighted an elaborate operation by a Shenzen-based technology company with links to the government in Beijing and the Chinese Communist Party, to keep tabs on a very large number of individuals and entities in India. The company, Zhenhua Data Information Technology Co. Limited, calls itself a pioneer in using big data for "hybrid warfare" and the "great rejuvenation of the Chinese nation" China's authoritarian government, ruling party, military, and many private companies frequently operate as a giant, coordinated operation, of which countries around the world are targets.

When did China's People's Liberation Army (PLA) step into the field of cyber warfare?

It was soon after the Gulf War of 1991 that the Chinese realised that the days of conventional warfare were rapidly coming to an end. Pavithran Rajan, a former Indian Army officer and information warfare expert, who has authored 'Engaging China: Indian Interests in the Information Age', says the Chinese understood that American technology was far ahead of them. "They analysed that if they get into the ICT (information and communications technology), they could leapfrog a couple of generations and get ahead. This decision also coincided with China turning into the electronics factory of the world. In 2003, the Central Committee of the Chinese Communist Party and China's Central Military Commission officially approved the concept of "Three Warfares", comprising psychological, media, and legal warfare. "It was then decided at the highest levels that the PLA should be an army ready to fight a war in the information domain by 2020," Pavithran said. Soon, the PLA began to set up intelligence units dedicated to cyber operations.

When did the world discover the PLA's commitment to cyber warfare?

In February 2013, the Alexandria, Virginia-headquartered American cyber security firm Mandiant published a report that blew the lid off China's cyber espionage operations. The Mandiant report documented evidence of cyber attacks by PLA Unit 61398, whose exact location and address in Pudong, Shanghai, the report revealed. Unit 61398 is the 'Military unit Cover Designator' (MuCD) of the PLA's Advanced Persistent Threat (APT) unit that has been accused of several computer hacking attacks. "We refer to this group as "APT1", and it is one of more than 20 APT groups with origins in China," the Mandiant report said. "APT1 is a single organization of operators that has conducted a cyber espionage campaign against a broad range of victims since at least 2006. From our observations, it is one of the most prolific cyber espionage groups in terms of the sheer quantity of information stolen."

According to the Mandiant report, APT1 had stolen billions of terabytes of data from 141 companies across 20 major industries. "APT1", the report said, "is believed to be the 2nd Bureau of the People's Liberation army (PLA) General staff Department's (GsD) 3rd Department, which is most commonly known by its Military unit Cover Designator (MuCD) as unit 61398. The nature of "Unit 61398's" work is considered by China to be a state secret; however, we believe it engages in harmful "Computer Network Operations". Unit 61398 is partially situated on Datong Road in Gaoqiaozhen, which is located in the Pudong New Area of Shanghai. The central building in this compound is a 130,663 square foot facility that is 12 stories high, and was built in early 2007. We estimate that Unit 61398 is staffed by hundreds, and perhaps thousands of people." The report also said Unit 61398 requires its personnel to be trained in computer security and network operations, and to be proficient in English.

What was the reaction to these revelations?

Former Northern Army Commander Lt Gen D S Hooda (Retd), who after retirement, headed a panel that called for setting up specialised information warfare units, said that in 2014, the United States government discovered that a Chinese unit had hacked into the Office of Personnel Management, a unit of the federal government, and taken out records of 21 million people. Around 4 to 5 million of these people worked for the US military, and included CIA agents "The hackers got hold of 127 page forms, listing every detail of the individual official. This was one of the biggest hacks of classified personnel documents," Gen Hooda said The US Department of Justice under President Barack Obama indicted five PLA officers by name for cyber crime. The names and photos of the officers were released, and they were accused of hacking and stealing information from several companies. "It was for the first time that the US took such a step against a foreign power," Pavithran said.

What is the nature of the civil-military fusion that China encourages?

According to Pavithran, China started a policy of weaponising its existing manufacturing capability of civilian products for military purposes by leveraging the control over any instrument by the original equipment manufacturer (OEM). Most mobile phones, for example, are equipped with a 'soft' rather than a 'hard' switch, Pavithran said: "This means that even if you switch off the phone, the sensors inside continue to feed data to the cloud. Entire populations can be monitored with this

control." China's long experience of keeping its own people under surveillance has contributed to its expertise in individual surveillance, Gen Hooda said. "They know how to mine this data." According to Pavithran, the Chinese use this information for kompromat, a Russian term for any information that can compromise a person, and which can therefore, be used to blackmail him/her. Gen Hooda said that in 2017, China passed a law under which all Chinese companies were supposed to assist the country's intelligence-gathering operations. "They cannot say no. Besides there is a close link among the civil, military establishment and academia in China."

Specifically, what are the military implications of this fusion?

China, Pavithran said, has graduated from being a force ready to fight information warfare to a force equipped for 'intelligentised' warfare. "They have managed to weaponise their appliances all over the world." This cyber prowess, he said, gives the PLA the ability to identify key personnel and directly target them in kinetic warfare.

Source: indianexpress.com; 17 September 2020

CHINA'S RESPONSES TO FRANCE-UK-GERMANY JOINT UN NOTE AGAINST ITS CLAIMS IN BIEN DONG SEA

- Valerie Mai

On September 18, China submitted a note to the United Nations in response to the joint note verbale of three European powers which expressed their opposition to China's expansive claims in the Bien Dong Sea (internationally called South China Sea).

China: Go against international laws

In their note, the three European countries stressed that "the universal and unified character of UNCLOS that sets out the legal framework within which all activities in the oceans and seas must be carried out".

Meanwhile, China argued, "UNCLOS does not cover everything about the maritime order". The country also stated that "Paragraph 8 of the preamble of UNCLOS emphasizes that "matters not regulated by this Convention continue to be governed by the rules and principles of general international law" - a statement that its Deputy Foreign Minister used at the international conference on "The South China Sea from the perspective of cooperation" held on Hainan Island on September 2, Vietnamnet cited In fact, UNCLOS is a maritime charter, covering general provisions for all maritime zones and areas of marine activity. UNCLOS and the conventions established on the basis of UNCLOS create a bundled solution, requiring consistency in interpretation and application and no specific exceptions.

The China's note affirms that China has territorial sovereignty and maritime rights established in a long history and has the consistency of successive governments, in

accordance with international law including both the United Nations Charter and UNCLOS. However, its 1980 White Paper states that Chinese fishermen were the earliest to discover, name, and manage the islands in the South China Sea. This goes against international law, which stipulates that only peaceful and continuous acts of occupation by the government bring in the title of sovereignty. Historically, Chinese governments have recognized the southernmost point of Chinese territory as Hainan Island. It was not until 1909 that China had a new dispute over the Paracel Islands. The use of force at Hoang Sa (Paracel) in 1974 and Truong Sa (Spratly) in 1988 was not a measure to create a title of sovereignty confirmed by the UN Charter.

France - UK - Germany's perspective

In its note, China emphasizes the mixed application of both Article 7, part II and Article 47, part IV, of UNCLOS on defining the baseline for the territorial sea in order to bring maximum benefit to this country. France, UK and Germany has the opposite view. The three countries indicated that these two provisions above had conditions of application that were clearly defined in UNCLOS and couldnot be used overlapping.

China's argument is based on the 2018 study by the China International Law Association to refute the Bien Dong Sea ruling. This study cited 19 offshore archipelagos that applied a straight baseline. Of these, France, UK and Australia are all mentioned (France with the Kerguelen Islands; Guadeloupe and New Caledonia; Australia with Houtman Abrolhos Islands and Furneaux Group; UK with the Turks, Caicos Islands and the disputed Falkland Islands). However, these mentioned countries that oppose China to apply the straight baseline of the archipelago to the Hoang Sa (Paracel) Islands and plan to apply further to the Nanhai archipelago. These countries' notes are evidence that there is no international practice in applying archipelagic straight baselines to the offshore islands of the coastal state as proposed by China.

The legal war has not yet come to an end

According to Vietnam's Ambassdor Nguyen Hong Thao, the "War of Notes" started with Malaysia in December 2019 and attracts the involvement of 10 nations with 23 notes and official letters (China - 8, Philippines - 2, Malaysia - 3, Vietnam - 3; Indonesia - 2, US - 1, Australia - 1, France - UK - Germany - 3). Brunei and a number of other countries also issued statements demonstrating their stance. Most countries support the conclusions of the International Court of Justice's 2016 ruling that rejects the Chinas' claim of historic rights, and does not allow floating entities in the Truong Sa (Spratlys) to have a sea area larger than 12 nautical miles, does not to apply archipelagic baselines for the Truong Sa (Spratlys) as a unified unit.

More and more countries take a common stance, which may produce an erga omnes effect (applicable to all). China is still looking for new arguments to refute the Court's conclusions as well as to have a new interpretation of the provisions of UNCLOS. The legal battle in the Bien Dong Sea is not yet over, the Ambassador stated.

Source: vietnamtimes.org; 20 September 2020

EYE ON CHINA, CANADA FORMULATES NEW INDO-PACIFIC POLICY

- Anirudh Bhattacharyya

Canada is formulating a fresh Indo-Pacific policy that will not only reflect its recent rift with China but may be more in consonance with the objectives of India in the region. The indication of this potential switch came as Canadian Prime Minister Justin Trudeau spoke to his newly-appointed Japanese counterpart Suga Yoshihide. A readout of the conversation used language that has become central to that applied by the Quad nations- India, Japan, Australia and the United States - as it said they wanted the two nations to "promote a free and open Indo-Pacific region."

That free-and-open formulation, known as FOIP, has been used as shorthand for containment of an increasingly aggressive China in the region. That symbolic phrasing comes as Canada is looking at issuing a new Indo-Pacific policy in the weeks ahead. According to a report in the Toronto Star recently, Global Affairs Canada has been working on the revised policy since November last year. The daily, National Post, stated Canada is "getting set to launch a new tougher approach to dealing with Beijing" and has been in the making since the appointment of François-Philippe Champagne as Foreign Minister in 2019. Indian officials did not comment on this matter but pointed to an increase in official communication between New Delhi and Ottawa in recent times, including discussions between Prime Minister Narendra Modi and Trudeau. The Trudeau administration may also be acting to reflect public mood in Canada, which has turned largely against China. According to a poll in late June from the Angus Reid Institute (ARI), 81% of respondents "feel that they should boycott goods made in China to send a message", while 91% considered the state of affairs between the two nations "serious". Similarly, 93% felt that "China cannot be trusted to uphold human rights."

Significantly, a Canadian warship sailed from the South China Sea into the Taiwan Strait this week in a move that could rile Beijing as China has become more belligerent in the area. Relations between Ottawa and Beijing have nosedived since the arrest of a senior executive of the Chinese telecommunications firm Huawei in Vancouver in late 2018. Meng Wanzhou continues to face trial that could lead to her extradition to the US. In retaliation, China arrested two Canadians, including a former diplomat, actions the Canadian government described as "hostage diplomacy."

Source: hindustantimes.com; 04 October 2020

ACKNOWLEDGEMENTS

'Making Waves' is a compilation of maritime news and news analyses drawn from national and international online sources. Drawn directly from original sources, minor editorial amendments are made by specialists on maritime affairs. It is intended for academic research, and not for commercial use. NMF expresses its gratitude to all sources of information, which are cited in this publication.

Cover Designed by Gayathri Rajesh, NMF Intern.