



MAKING WAVES

A maritime news brief covering:

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

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MARITIME SECURITY

WITH P8I AIRCRAFT, NAVY TAKES PART IN QUAD ANTI-SUBMARINE WARFARE EXERCISE IN GUAM

- Amrita Nayak Dutta

New Delhi: The Indian Navy is participating in a multinational anti-submarine warfare exercise with the 'Quad' countries, along with Canada, which began in Guam in Western Pacific earlier this month. The exercise, titled Sea Dragon 2021, is taking place nearly two months after the conclusion of Exercise Malabar involving the Quad countries — India, Japan, the US and Australia. The Navy has deployed one anti-submarine warfare aircraft, the P8I, for the exercise, which is set to continue till 28 January. The exercise involves drills aimed at tracking submarines.

Naval Base Guam is a strategic US naval base located on Apra Harbor.

Defence officials told ThePrint the Navy's participation bears testimony to the level of interoperability achieved by the force enabling it to take part in exercises across the globe. Sea Dragon 2021 centres on anti-submarine warfare training and excellence to include 125 hours of in-flight training — ranging from tracking simulated targets to the final problem of finding and tracking USS Chicago, a US Navy Los Angeles-class nuclear submarine. During training sessions, pilots and flight officers from all countries will build plans and discuss incorporating tactics, capabilities and equipment for their respective nations into the exercise. Along with the US, the Royal Australian Air Force, Canadian Air Force, Indian Navy, and Japan Maritime Self-Defense Force are participating.

'Navy to get acclimated with Guam'

Vice-Admiral Anup Singh (retired), former commander-in-chief of the Eastern Naval Command, told ThePrint that participating in a high-level exercise with an anti-submarine focus makes a lot of sense in today's day and age, particularly in the current geopolitical scenario. "Guam is one of the largest US naval bases, and the region is of great interest to us. Exercising there with the US will help the Navy to acclimatise with the area, thus adding to the confidence. There is also a lot of global interest in that part of the Pacific," he said. The Navy veteran further said that what adds to the experience is exercising with contemporary systems like the P8I, which is a modern aircraft that also has a great amount of maritime reconnaissance and surveillance capabilities. "Very few platforms today have these detection systems against submarines," he added.

India's other global exercises

India has remained tight-lipped about the exercise, while the US has been giving out information about its participation. In November, India concluded the 24th edition of joint maritime 'Exercise Malabar 2020', which saw Australia's participation for the first time in 13 years, along with the US and Japan. The Malabar series of exercises had begun as an annual bilateral naval exercise between India and the US in 1992. In the past few years, the annual maritime exercise has been conducted off the coast of Guam in the Philippine Sea in 2018 and the coast of Japan in 2019. The Indian and the French air forces are also carrying out a five-day bilateral air exercise, Exercise Desert Knight-21, which began on 20 January that will include aircraft such as Rafales, Mirage 2000s, Sukhoi-30s, mid-air refuellers, and airborne warning and control system platforms.

Source: [The Print](#); 22 January 2021

SATELLITE CATCHES CHINESE SURVEY SHIP MAPPING SEABED IN EASTERN INDIAN OCEAN

- Snehesh Alex Philip

New Delhi: A Chinese government survey ship, the Xiang Yang Hong 03, is currently operating in the Indian Ocean and carrying out a search pattern west of Sumatra, the latest satellite and open source intelligence (OSINT) has revealed. This same vessel was last week accused of 'running dark', i.e., operating without broadcasting its position, in Indonesian territorial waters. China's Xiang Yang Hong survey ships are suspected of operating underwater gliders in the Indian Ocean to map the sea bed. "The suspicion is that, as well as conducting civilian research, these ships may be gathering information for naval planners – currents, bathymetry, salinity of the water – which are all relevant to submarine warfare," H.I. Sutton, defence and OSINT analyst told ThePrint. He added that hydrographic data is civilian-defence agnostic, which means that it can be used for both civilian and military purposes. "The eastern Indian Ocean is likely to be of particular interest to the Chinese Navy as they expand their submarine capabilities. The data from these surveys may help submarines navigate, or improve their chances of remaining undetected," Sutton said.

What China could be up to

In an article published on NavalNews, Sutton wrote that some of the survey activities, nearer to Indonesia and the Andaman and Nicobar islands, could relate to finding the US Navy's reputed 'fish hook' sensor networks. "These are designed to track Chinese submarines entering the Indian Ocean. Naturally this cannot be confirmed," he said. ThePrint in November 2020 reported that two Chinese research and survey vessels in Sri Lankan waters had caught the attention of the Indian Navy, which sees them as possibly being part of a larger ploy to gather data. A note prepared by the defence establishment at the time said that survey and research vessels primarily gather data

vital for conduct of naval operations, especially that of submarines. “Such unencumbered and suspicious activity within Sri Lankan waters will surely raise the hackles of other nations in the region and also has the potential to upset the delicate maritime balance in the IOR,” the note had said. Sutton said that four of the Xiang Yang Hong (‘Facing the Red Sun’) research ships have been particularly active over the past two years — Xiang Yang Hong 01, 03, 06 and 19. “The ships are operated by the State Oceanic Administration (SOA). In December 2019, Xiang Yang Hong 06 deployed at least 12 underwater gliders in the Indian Ocean. These long-endurance uncrewed underwater vehicles (UUVs) gather data on currents and the water properties. Their data is also civilian-defense agnostic, and particularly relevant to submarine warfare,” he said. Incidentally, the gliders deployed were of the Sea Wing (Haiyi) type, which is the same model found in the Indonesian waters. “This raises the possibility that as well as the Xiang Yang Hong 06, other Chinese ships may be deploying the gliders. It is difficult to determine the launch point for the gliders found in Indonesian waters. But it is not a great leap to suggest that China has deployed more in the Eastern Indian Ocean,” Sutton said.

Source: [The Print](#); 22 January 2021

CHINA AUTHORISES COAST GUARD TO FIRE ON FOREIGN VESSELS

China has passed a law that for the first time explicitly allows its coast guard to fire on foreign vessels, a move that could make the contested South China Sea and nearby waters more choppy. The Coast Guard Law passed on Friday empowers it to “take all necessary measures, including the use of weapons when national sovereignty, sovereign rights, and jurisdiction are being illegally infringed upon by foreign organisations or individuals at sea”. China has maritime sovereignty disputes with Japan in the East China Sea and with several Southeast Asian countries in the South China Sea. It has sent its coast guard to chase away fishing vessels from other countries, sometimes resulting in the sinking of these ships. China’s top legislative body, the National People’s Congress standing committee, passed the Coast Guard Law on Friday, according to state media reports.

Potential flashpoints

China’s coast guard is the most powerful force of its kind in the region and is already active in the vicinity of uninhabited East China Sea islands controlled by Japan but claimed by Beijing, as well as in the South China Sea, which China claims virtually in its entirety. Those activities have brought the coast guard into frequent contact with air and sea forces from Japan, its chief ally the US, and other claimants to territory in the South China Sea, including Vietnam, Malaysia and the Philippines. Both water bodies are considered potential flashpoints and the law’s passage may be a signal China is preparing to up the stakes over what it considers its key national interests. Controlling them is a strategic imperative if China wishes to displace the US as the dominant military power in East Asia, while the resources they contain, including fish stocks and undersea deposits of oil and natural gas, may be key to maintaining China’s

continued economic development. The bill specified the circumstances under which different kind of weapons – handheld, shipborne or airborne – can be used. The bill allowed coast guard personnel to demolish other countries’ structures built on Chinese-claimed reefs and to board and inspect foreign vessels in waters claimed by China. The bill also empowered the coastguard to create temporary exclusion zones “as needed” to stop other vessels and personnel from entering. Responding to concerns, Chinese foreign ministry spokeswoman Hua Chunying said on Friday the law is in line with international practices. The first article of the bill explained the law is needed to safeguard China’s sovereignty, security and maritime rights.

Complicate US relations

This law comes seven years after China merged several civilian maritime law-enforcement agencies to form a coast guard bureau. After the bureau came under the command of the People’s Armed Police in 2018, it became a proper branch of the military forces. The latest move by China could also further complicate its relations with the United States, which maintains strategic alliances with several Asia-Pacific countries, including Japan, the Philippines, Vietnam and Indonesia, which have competing maritime claims with Beijing. In a social media post, Christian Le Miere, a maritime diplomacy analyst and founder of the London and The Hague-based group Arcipel, said the new law “strikes at the heart” of the US policy of freedom of navigation in the South China Sea. “China’s coast guard is already doing most of the heavy lifting in maritime coercion in the near seas, so it’s worth examining the new legislation just passed on this issue.” The International Court in The Hague has nullified China’s nine-dash line claim, which asserts control of most of the South China Sea.

Source: [Al Jazeera](#); 23 January 2021

FRONTEX AND EUNAVFOR SIGN MARITIME SECURITY COOPERATION AGREEMENT

Frontex, the European Border and Coast Guard Agency and Operation EUNAVFOR MED IRINI have agreed to expand their cooperation to address challenges and threats to EU security in the Central Mediterranean region. Under a new working arrangement, Frontex will be supporting Operation IRINI with information gathered as part of the agency’s risk analysis activities, such as tracking vessels of interests on the high seas, as well as data from its aerial surveillance in the Central Mediterranean. The agreement also foresees the exchange of experts. Currently, an EUNAVFOR MED expert is based at the Warsaw headquarters of Frontex to support information exchange and cooperation in search and rescue operations. The working arrangement was signed during a virtual ceremony by Frontex’s Executive Director Fabrice Leggeri and Rear Admiral Fabio Agostini, the Commander of Operation IRINI and attended by Director-General for Migration and Home Affairs Monique Pariat. EUNAVFOR MED Operation IRINI is tasked with the implementation of the United Nation Security Council Resolutions on the arms embargo on Libya through the use of aerial,

satellite and maritime assets. Cooperation with the EU's Common Security and Defense Policy missions is an integral part of Frontex's activities. Before the launch of IRINI, the agency worked with EUNAVFOR Med Sophia to combat people smuggling and trafficking and helped the mission build a comprehensive picture of cross-border criminal activities in the Central Mediterranean.

Source: [Homeland Security Today](#); 19 January 2021

ASIA PIRACY INCIDENTS HIT 5-YEAR HIGH IN 2020, SHIPPING INSURANCE RATES FIRM

- Sameer C Mohindru

Singapore — Sea robbery and piracy related incidents across Asia increased 17% year on year to just under 100 in 2020, amid consistent threat of possible attacks by the Abu Sayyaf Group, or ASG, prompting warnings for enhanced vigilance, an international watchdog monitoring the trend said over the weekend Jan 16-17. Overall, such incidents in Asia, excluding the attempted ones, were up 32% from 2019 to a five-year high in 2020, ReCAAP said. ReCAAP is the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia. ReCAAP's annual data release comes close on the heels of attack on tankers in the Middle East.

THREAT KEEPS SHIPPING INSURANCE RATES HIGH, COSTS STEADY

At present, maritime security in Asia is under sharp focus, particularly in the aftermath of the attack on tankers near the Persian Gulf late last year, which has kept shipping insurance rates firm due to an additional war risk premia. The Strait of Hormuz, which leads to the Persian Gulf, is a critical chokepoint through which 30% of the world's seaborne oil passes through. "The war risk premia is holding firm for all ships moving in the region because of the prevailing threat," said a maritime insurance executive.

Last month, an LR1 tanker owned by Hafnia suffered an explosion after being hit by an external object early Dec. 14 while discharging a gasoline cargo at Saudi Arabia's western port of Jeddah, sources with the direct knowledge of the matter told S&P Global Platts. The insurance premium varies from ship to ship depending on its age and depreciation, but another maritime insurance executive said due to the prevailing situation, any decline in rates is unlikely. Such premia is typically paid as an actual expense, which the owners bill to the charterer after the voyage, or transit is completed. The premia vary based on the location of the ship, its transit route, age and flag. Unlike freight, insurance premia is typically not in public domain. In mid-December 2020, the Asia-Pacific Long Range 1, or LR1, tanker rates had hit their highest in over six months, with benchmark Persian Gulf-Japan route at 110 Worldscale points, due to strong demand.

RISK NOT ABATING ANYTIME SOON

A direct impact of such incidents is that Persian Gulf is not going to be removed from the high-risk zone that it is in for almost two years now, said a clean tankers broker in Singapore. The Joint War Committee of insurance body Lloyd's Market Association

had added the Persian Gulf and adjacent waters including parts of Gulf of Oman to the list of areas under risk of "Hull War, Piracy, Terrorism and related perils" in May 2019.

According to ReCAAP, the trend of increase in piracy and sea robbery was seen across Asia including areas such as Bangladesh, India, the Philippines, Vietnam, Singapore Straits and South China Sea, ReCAAP said. Most of the incidents in the Singapore Straits involved bigger ships such as bulk carriers and tankers and took place in the eastbound lane of the Traffic Separation Scheme. "In view of the increase of incidents, law enforcement agencies in Asia should enhance surveillance, increase patrols and respond promptly to arrest and prosecute the perpetrators, Masafumi Kuroki, Executive Director of ReCAAP said in a virtual conference. Singapore is located along one of the world's busiest waterways, with close to 1,000 ships anchored there at any given time. A ship calls at Singapore port every two to three minutes, bringing the total to around 130,000 ships a year and making it critical for maritime passage in the region to be piracy-free. From industrial raw materials such as coal to essential food items like rice, commodities worth billions of dollars move on commercial ships near the Sulu Sea and the Celebes Sea, industry estimates showed. The abduction of crew in the Sulu-Celebes Seas and waters off Eastern Sabah remains a concern, Kuroki said. In the last five years, of the 86 abducted crew in the Sulu-Celebes Seas, 71 were released while 11 either died or were killed, according to the ReCAAP estimates. Established in 2006, ReCAAP is the first regional government-to-government agreement to promote and enhance cooperation against piracy and armed robbery against ships in Asia. It has 20 member countries, including all members of ASEAN except Malaysia and Indonesia, with France and Germany expected to join in future.

Source: [S&P Global Platts](#); 18 January 2021

DOES SOMALI PIRACY HOLD SECURITY LESSONS FOR THE GULF OF GUINEA?

- Brian Gicheru Kinyua

The subject of maritime security has gained prominence since the turn of this millennium as piracy and armed robbery at sea intensified. With most littoral states committing their budgetary allocations to security on land, maritime governance frameworks have lagged behind, inadvertently creating safe spaces for insurgents eager to boost their political and economic clout from disorganized seas. Particularly, Africa has emerged as a maritime terrorism hotspot, presenting a tremendous obstacle to the development of its blue economy. Seafarers have borne the brunt of unsafe waterways as pirates increasingly target ships. Pirate groups in the Gulf of Guinea - with an ever-increasing capacity to stage attacks on ships - have become a nightmare in the African maritime security landscape as stakeholders hunt for a long-term solution. However, inasmuch as Africa is a playbook example for maritime insecurity, it also a laboratory where maritime security strategies get tested for coherence and effectiveness.

Fundamentally, the Western Indian Ocean region presents a unique case study on how nations can create the capacity to proactively respond to maritime instability and piracy. Unfortunately, as external assistance continued to pour in for countries to enhance their maritime governance structures, there is a dearth of comparative analysis to map out the effectiveness of capacity building programs existing in the region. The emergence of Somali piracy in mid-2000s was a litmus test for East African nations, most of which had under-resourced and weak maritime governance structures. This would attract foreign assistance mostly from the United Nations (UN) and EU to build these nation's capacities to counter piracy off their coasts. Some of the initiatives introduced included multilateral naval missions, establishment of legal systems to prosecute pirates on land and institutions to maintain safety at sea. A book released in October of last year titled "Capacity Building for Maritime Security: The Western Indian Ocean Experience" sought to address this gap by comparing how littoral states in the Western Indian Ocean revamped their maritime spaces in the wake of maritime security threats.

The compelling aspect about this book is the foundation it creates to analyze specific actions undertaken in the region to counter piracy, the aspects that worked and the shortfalls encountered, especially how some of the institutions created have been unable to evolve as Somali piracy declines. These insights can be relied upon by experts elsewhere like in the Gulf of Guinea to contextualize maritime security threats and ensure the resultant capacity-building efforts exceed just the notion of counter-piracy. Thus, the focus should be on blending external assistance with local efforts to give maritime security capacity-builders visibility in national public agendas. Often times, the profession remains in the periphery and lacks political concern and priority in national security reforms. But how should maritime governance structures be configured to regions where threats abound, rather than be tethered to an idealized outcome - a common approach with donor-funded capacity building programs, which tend to be very prescriptive. Take the case of resource-rich countries in Western Indian Ocean such as South Africa - whose institutions have the capacity to handle maritime threats - as opposed to Kenya and Seychelles, which still depend on external assistance. The authors of the book introduce a new framework to assess maritime security governance gaps in Africa called "Spaces, Problems, Institutions and Projects," or SPIP. It is a multilayered approach that first identifies how maritime spaces are problematic to a country, followed by how institutions and governance structures are mobilized to respond to these problems. Lastly, the implementation gaps that exist in various reforms and capacity building projects that a country undertakes are analyzed to determine how they can be further developed in future. Care has to be taken not to simply transplant knowledge learnt from other regions while leaving out the cultural, economic and political conditions of a different target area. Somali piracy cannot be directly compared to instability in the Gulf of Guinea, which means the capacity building approach for maritime institutions in West Africa will have to be distinctive and responsive to the political expectations in the region.

Source: maritime-executive.com; 22 January 2021

MARITIME FORCES

MARINE CORPS TO STAND UP FIRST MARINE LITTORAL REGIMENT IN FY 2022

- Mallory Shelbourne

The Marine Corps plans to officially form the new unit designed to execute its island-hopping strategy in the Indo-Pacific next fiscal year, according to a service spokesman. Marine Corps Commandant Gen. David Berger has laid out a vision for focusing on small maneuvering units instead of a large forcible entry force to fight a peer competitor like China in the Indo-Pacific in 2030. Part of that strategy proposes a new construct called the Marine Littoral Regiment, a concept the Marine Corps is beginning to experiment with using the 3rd Marine Regiment, to determine what the MLR might look like. Marine Corps spokesman Maj. Josh Benson told USNI News that the service will formally stand up the first Marine Littoral Regiment in early Fiscal Year 2022. “Over the next few years, the specifics of the MLR will begin to take shape. Experiments, wargames, modeling and simulation will play a key role in the phased approach to the MLR development. First, the formation will be built, mainly from units that already exist in Hawaii, then the capabilities flowed in,” Benson said. “The largest muscle movements between now and the standup of the MLR will be structure and manpower adjustments. While this is taking place, further refinement of associated capabilities and concept development will occur in order to ensure the first MLR is capable of contributing to the continued Force Design Phase III efforts.” “The most important aspect of Force Design Phase III is understanding feedback from the Fleet. This holds extremely true for the MLR construct. We want to ensure we get this right,” he continued.

The Marine Corps last year began initial experimentation with the 3rd Marine Regiment in Hawaii, which will eventually transition to the MLR construct. Plans to form the MLR first came to light last March in Berger’s force design report, which summarized the first two phases of the initiative. Benson said the Marine Corps hopes to move into experimentation with the MLR as part of the force design’s third phase “as fast as possible,” so officials can start receiving assessments from the fleet. Early plans for the MLR suggest it will include 1,800 to 2,000 sailors and Marines, which is smaller than the 3,400 that currently make up the 3rd Marine Regiment in Hawaii. The MLR will feature a Littoral Combat Team, Littoral Logistics Battalion, and a Littoral Anti-Air Battalion, USNI News previously reported.

The idea for the MLR was born out of wargaming efforts within the Marine Corps that sought to learn what kind of construct it needed to employ concepts like Littoral Operations in a Contested Environment (LOCE) and Expeditionary Advanced Based Operations (EABO). The latter would see Marines moving between expeditionary bases on islands in the Pacific. Marine Corps Training and Education Command

commanding general Lt. Gen. Lewis Craparotta said last week at the Surface Navy Association's annual symposium that he is working on a "tentative manual" for the EABO operating concept. "We're laser-focused on the Pacific. And this is where you'll see our first Marine Littoral Regiment come online. This is where we have our forward-based fifth-[generation] aircraft in [Marine Corps Air Station] Iwakuni," Craparotta said. Officials have repeatedly stressed that part of the Marine Corps' force design work is prioritizing naval integration between the Navy and the Marine Corps. With an emphasis on the Indo-Pacific, that integration has extended to the staffs of U.S. 7th Fleet and III Marine Expeditionary Force, which are cultivating a joint warfighting concept.

"The relationships again that have developed between the MEFs and the numbered fleets, the relationships that exist between our staffs really are different. And I would dare say better than they have been before, based on my experience. And I would expect that these relationships will continue," Craparotta said last week. "And I think between relationships, integrated concepts, capabilities that are designed to support those concepts, and the current efforts really to experiment and train together as a naval force – these combined efforts will really start to bear fruit in the next few years and will certainly enable the naval force to continue to play the vital role in the Pacific and around the globe, just as it has throughout our history." While plans for the MLR are not yet final, the Marine Corps' third stage of the force design effort is meant to continue experimenting and wargaming concepts to better understand how the service would employ a new unit like the MLR. "The MLR will be uniquely designed to maneuver and persist inside a contested maritime environment where its primary mission will be to conduct sea denial operations as part of a larger Naval Expeditionary Force," Benson said. "The MLR being built in Hawaii over the next three years will be the first of its kind in the Marine Corps."

Source: [USNI News](#); 20 January 2021

JAPAN DEMOS RAYTHEON MARITIME SECURITY RADAR, SENSOR ABOARD GA-ASI SEAGUARDIAN AIRCRAFT

- Matthew Nelson

The Japanese coast guard has tested maritime surveillance tools developed by Raytheon Technologies' intelligence and space business aboard SeaGuardian remotely piloted aircraft of General Atomics' aeronautical systems segment. The series of flight tests was meant to determine the ability of Raytheon Intelligence and Space's AN/DAS-4 sensor and SeaVue Expanded Mission Capability radar to support the service branch in disaster response, naval law enforcement and search and rescue operations, General Atomics said Thursday. The demonstration was held from Oct. 15 to Nov. 20, 2020, in Hachinohe in the country's Aomori Prefecture. DAS-4 is a multispectral targeting suite designed to deliver electro-optical surveillance capabilities in high-definition and full-motion video formats while SeaVue XMC works

to identify small targets at high altitudes and long ranges. The flight tests were part of JCG's efforts to modernize maritime security technologies.

Source: [executivebiz.com](https://www.executivebiz.com); 22 January 2021

US AND SAUDI ARABIAN NAVIES BEGIN MARITIME EXERCISE NAVAL DEFENDER 21

The US Navy and the Royal Saudi Naval Forces (RSNF) have commenced a mixed maritime exercise, Naval Defender 21. The exercise was officially started at the King Abdulaziz Naval Base (KANB) at the Eastern Fleet in Jubail, Saudi Arabia in the presence of Eastern Fleet commander vice admiral Majed bin Hazza Al-Qahtani, reported Saudi Press Agency (SPA). Joint exercise director rear admiral Awwad bin Rashid Al-Enezi was cited by SPA as saying that the participants will give several lectures and training courses as part of the exercise.

The personnel will also exchange combat experiences and even assess maritime security measures in the region. Naval Defender 21 aims to enhance the combat readiness of the personnel and expand military security cooperation between the two nations. It will also help strengthen and ensure improved protection of territorial waters, coasts and ports. The assets that will participate in the exercise have not been disclosed. A British minesweeper is taking part in the mixed maritime exercise.

Earlier this month, the air forces of the two nations conducted a bilateral military drill. In November 2020, the RSNF, the British Royal Navy and the US Navy conducted a mine countermeasures (MCM) interoperability training in the Arabian Gulf. In October 2019, the US and its partner nations started the International Maritime Exercise 2019 (IMX 19) with the aim of maintaining regional security and stability.

Source: [naval-technology.com](https://www.naval-technology.com); 22 January 2021

USNS TRENTON, TUNISIAN NAVY EXERCISE MARITIME SECURITY CAPABILITIES

Military Sealift Command Spearhead-class Expeditionary Fast Transport USNS Trenton (T-EPF 5) and Tunisian Navy partners conducted joint maritime operations to enhance maritime security, critical lifesaving capabilities, and Tunisia's ability to protect its maritime borders, Jan. 18-21, 2021. The series of naval exercises with the Tunisian Navy focused on developing both nations' ability to conduct maritime security operations in the Mediterranean, further enhancing cooperation between U.S. and Tunisian forces in support of shared security goals.

"It is important to work alongside our partners in the Mediterranean to improve our interoperability and teamwork," said Capt. Frank Okata, Commodore Military Sealift Command Europe and Africa and Commander, Task Force 63. "Conducting training

exercises together with countries like Tunisia contributes to a more secure and stable region." Demonstrating a shared commitment to enhance critical lifesaving capabilities in a COVID-19 degraded environment, all missions were conducted with respect for protocols protecting both U.S. and Tunisian forces against the spread of the virus. In November, USS Hershel "Woody" Williams conducted joint maritime operations with the Tunisian Navy, while U.S. Special Forces conducted simulations to bolster counterterrorism capabilities, perform critical lifesaving tasks, and improve cooperation between U.S. and Tunisian forces. MSC operates approximately 125 naval auxiliary civilian-crewed ships, replenishes U.S. Navy ships, strategically prepositions combat cargo at sea, and moves military cargo and supplies used by deployed U.S. forces and coalition partners around the world. U.S. Sixth Fleet, headquartered in Naples, Italy, conducts joint and naval operations in order to support regional allies and partners and U.S. national security interests in Europe and Africa

Source: [U.S. Navy Office of Information](#); 21 January 2021

ROLLS-ROYCE WINS US NAVY RESEARCH CONTRACT FOR FOD DETECTION TECHNOLOGY

Rolls-Royce has secured a research funding contract with the US Navy to develop digital foreign object debris (FOD) detection technology. Valued at \$1m, the one-year research contract will allow the company to advance its FanSense debris monitoring system development and certification. The FanSense debris monitoring system is currently used on the Pegasus engine. Rolls-Royce Defence Services president Paul Craig said: "FanSense is an innovative and revolutionary Rolls-Royce digital technology being packaged and applied to our products. "The research funding granted by the US Navy will allow us to further enhance and build upon our pioneering technologies that will enhance safety, efficiency and deliver a cultural change for our customers." FanSense is designed for use on an engine to examine the shaft speed signal and detect disruptions, which are caused due to the presence of objects like a small stone or screw. According to the company, such small debris often remain undetected and ultimately costing several billions of dollars in damage and disruption for the aviation industry on an annual basis.

This technology provides customers with a clear picture of FOD damage and engine wear while enabling them to enhance their FOD prevention practices. Rolls-Royce will deliver the contract in partnership with Roke. Naval Air Systems Command FOD chief engineer Jonathan Sides said: "Inlet debris monitoring technology is a critical element of the FOD mitigation portfolio, supporting the US Navy's initiative to save hundreds of millions in FOD repair costs." In June last year, Rolls-Royce secured multiple contracts worth \$115.6m from the US Navy to provide ship engines, propulsion components, and services.

Source: [naval-technology.com](#); 21 January 2021

THE NAVY'S LITTORAL COMBAT SHIPS ARE A SLOW, BROKEN MESS

- Kyle Mizokami

The U.S. Navy is refusing to accept delivery of additional Littoral Combat Ships (LCS) from defense contractor Lockheed Martin. The Navy has identified a defect with the ship that has led to at least two breakdowns among Freedom-class ships, and the service won't take any new ships until the defect is fixed. The defect is yet another setback for the LCS program, one of the most troubled Navy shipbuilding programs in recent memory. The problem, U.S. Naval Institute News reports, is a flaw in the bearings system that links the Rolls-Royce MT30 gas turbine engines to the Colt-Pielstick diesel engines. The two engines combined can push a Freedom-class LCS ship to a top speed of 40 knots, or 46 miles per hour on land. The LCS class was designed with speed in mind, to better operate in coastal environments, sprint between islands, or zip in and out of range of enemy weapons. The Navy began the LCS program in the mid-2000s, buying two separate designs from shipbuilders Lockheed Martin and Austal. The service envisioned the LCS as a small, adaptable, frigate-sized warship that could quickly onboard "mission modules" to orient the ship toward anti-submarine warfare, anti-surface warfare, anti-mine warfare, and act as a mobile base for special operations.

But the mission module program has been a flop, producing few, if any, working modules and leaving the ships under-armed and under-equipped. There have also been several propulsion system breakdowns in the Freedom class. USS Detroit and USS Little Rock, both Freedom-class ships, have experienced breakdowns that the Navy now believes were due to the class-wide defect. The Navy ultimately plans to buy at least 16 Freedom-class ships from Lockheed Martin. Now that the Navy has identified the problem, it's up to Lockheed Martin to fix—and pay for—it. The Navy, Lockheed, and OEM equipment maker Lenk AG have designed a replacement part, which will undergo testing before being back-fitted to ships already in the fleet. It's unclear how long it will take to upgrade the ships. In the meantime, existing ships are limited to 35 knots.

Source: popularmechanics.com; 21 January 2021

IRAN CAUGHT ONE OF AMERICA'S MOST POWERFUL MISSILE SUBS UNDERWATER

- Kyle Mizokami

An accidental encounter between an Iranian military helicopter and one of the most powerful submarines in the world has made its way to social media.

An Iranian Navy Sea King helicopter recently spotted the guided missile submarine USS Georgia cruising at periscope depth in the Persian Gulf. The helicopter and sub likely observed one another and then moved on—just one more incident in the 40-year cold war between the United States and Iran. The video above seems to show an Islamic Republic of Iran Navy Aviation SH-3 Sea King helicopter flying over a submarine at periscope depth in the vicinity of the Strait of Hormuz. The cockpit is identical to pictures of Sea King cockpits posted online, and a member of the flight crew is even wearing an American-made Dave Clark headset.

This particular helicopter is very old. It's one of 18 SH-3s delivered to Iran between 1971 and 1977, when the country was still a major U.S. ally. The frosty relationship between Washington and Tehran began in 1979, when Iran underwent a revolution that toppled the Shah of Iran and installed an Islamic revolutionary state.

(Incidentally, the Iranian ABSH-3 Sea King is a cousin to Marine One, the helicopter that carries the President of the United States on short-range trips, often from the White House to nearby locations like Andrews Air Force Base. Marine One's VH-3 Sea Kings are set to be replaced by the new Sikorsky VH-92 helicopter in 2022.) Meanwhile, below, the outline of a very, very large submarine is visible in the blue ocean water. The sub's sail is clearly visible, as are a pair of diving planes mounted on the sail. In addition, you can see a large, barrel-like object behind the sail.

The combination of the three features means this is almost certainly the USS Georgia, an Ohio-class ballistic missile submarine and one of four subs removed from the nuclear deterrence mission to comply with arms control agreements. Instead of retiring the submarines, the U.S. Navy modified them to carry large numbers of Tomahawk cruise missiles. The Navy converted 22 of the original Trident missile tubes to carry seven Tomahawk missiles each, for a total of 154 Tomahawks per ship. The result is a submarine with a crew of just 155, with firepower rivaling that of an aircraft carrier.

Source: popularmechanics.com; 21 January 2021

SHIPPING, PORTS AND OCEAN ECONOMY

37% OF ALL BOXES ARE ROLLED OVER

- Sam Chambers

More than one in three containers worldwide are being rolled over, amid an unprecedented supply chain challenge hitting the liner community. Ocean Insights' latest cargo delay statistics published today show how the container bull run is wreaking havoc on the market, with surging rollover rates across major ports during December and most major carriers seeing increases in delays.

The latest figures from Ocean Insights show that most major ports are seeing elevated levels of rollover cargo from November to December. Rather than cargo flows diminishing in line with historical seasonal precedent, there are growing levels of demand during a period that usually sees a decrease in volumes. Sourcing available containers has become extremely difficult in recent months. Ocean Insights calculates the rollover ratio for carriers as the percentage of cargo carried by each line globally that left a port on a different vessel than originally scheduled. "Of the 20 global ports for which Ocean Insights collates data, 75% saw an increase in the levels of rollover cargo in December compared to the previous month. Major transshipment facilities such as Port Klang in Malaysia and Colombo in Sri Lanka recorded 50% or more of cargo delayed, with the world's largest transshipment hub in Singapore and leading primary ports such as Shanghai and Busan rolling over more than a third of their containers, last month," said Ocean Insights chief operations officer Josh Brazil.

Industry experts are now warning that the cargo surge could last well into 2021, with a strong likelihood that the prevailing conditions will continue throughout the first half of the year. Much of the recent concern for rollover cargo has focused on reefer containers. Some ports in China are reported to have run out of power points that are used to supply electricity to reefer containers, jeopardising perishable cargo. Overall rollover levels increased to 37% month on month in December, averaged across the ports surveyed, which includes facilities in all the major cargo regions of Europe, the US, and Asia as well as less cargo intensive regions such as Latin America. However, Latin America accounts for a significant proportion of the reefer trade with the US, Asia, and Europe. "The levels of cargo are still rising while the extra loader capacity which has been deployed to meet the raised levels of demand appears to be having little effect," commented Brazil. Major ocean shipping companies have also seen an overall increase in rollover values from 35% in November to 37% in December. Three of these lines saw more than 50% of cargo left at the departure port.

2M alliance partners MSC and Maersk managed to stem the rise of rollover cargo month on month, both recording the same level of rollovers in December as in the previous month. The unparalleled disruptions to the international supply chain experienced over the last year are not caused by one party in the chain; they are the result of sudden and radical changes to the demand for goods due to the impact of the Covid-19 pandemic, liner lobby group, the World Shipping Council, stressed in a release last week. “The pandemic has severely impacted access to containers and equipment. As inland transportation, port and warehousing operations have been hit by lockdowns, labour shortages and volume overloads, the positioning, use and return of containers within the global supply chain has slowed,” the liner group stated. According to new analysis from Sea-Intelligence, the dramatic deviation from normal seasonality in 2020 effectively meant that the global supply chain shifted 5m teu from the first half of last year to instead be shipped on top of normal volumes in the second half. Data published last month by Sea-Intelligence showed that one in two liner calls around the world was arriving late, the poorest ever record of schedule reliability since Sea-Intelligence started tracking this dataset in 2011. Analysis of Copenhagen-based eeSea’s Trade Capacity Index shows carriers are adding tonnage fast this year. On the three main east/west head hauls, January’s effective capacity is up by 7.6% over the corresponding period in 2020, according to eeSea with almost the same percentage of blank sailings. The data also shows February and March are up by 34% and 17% respectively, partly owing to the lower number of cancellations.

“We see that carriers are snapping up any available charter tonnage,” said Simon Sundboell, eeSea CEO in a recent release. “There is no idle capacity left, carriers are delaying scrapping, and the first new tonnage orders have even been placed.” Last week, it was reported that over 30 containerships were anchored in San Pedro Bay waiting to unload at the Port of Los Angeles, filling all useable anchorages off LA and Long Beach. “Chinese manufacturing continues to boom, and US consumers are spending more on imported goods. The spike in import volumes and congestion is expected to last at least through 1Q21, which will continue to remove effective supply from the market and put upward pressure on rates,” a new report from Jefferies posited today.

Source: [splash247.com](https://www.splash247.com); 19 January 2021

WORLD’S BIGGEST SHIPPING LINE DEMANDS ACTION AGAINST PIRACY SURGE OFF WEST AFRICA

- William Clowes

The world’s biggest shipping company demanded a more effective military response to surging pirate attacks and record kidnappings off the coast of West Africa. The number of attacks on vessels globally jumped 20% last year to 195, with 135 crew kidnapped, the International Maritime Bureau’s Piracy Reporting Centre said in a Jan. 13 report. The Gulf of Guinea accounted for 95% of hostages taken in 22 separate

instances, and all three of the hijackings that occurred, the agency said. The world's biggest shipping company demanded a more effective military response to surging pirate attacks and record kidnappings off the coast of West Africa. The number of attacks on vessels globally jumped 20% last year to 195, with 135 crew kidnapped, the International Maritime Bureau's Piracy Reporting Centre said in a Jan. 13 report. The Gulf of Guinea accounted for 95% of hostages taken in 22 separate instances, and all three of the hijackings that occurred, the agency said.

Suspects Arrested

Nigeria, the regional powerhouse, has taken the lead in preventing attacks and its navy says it has arrested more than 100 suspects who are facing trial under a new anti-piracy law – the first of its kind in the region. The government plans to commission nearly \$200 million of new equipment this year, including helicopters, drones and high-speed boats, to boost the navy's capabilities. Nigeria is committed to “ensuring that this menace of piracy is gotten rid of in our waters, so that those with legitimate business in shipping, fishing, and oil and gas can go about their business without fear,” Rear-Admiral Oladele Daji, commander of the Nigerian Navy's western fleet, said in an interview.

Many shipowners favor a more muscular international effort modeled on the military response to hijackings offshore Somalia, which was the global epicenter of piracy from about 2001 to 2012. Armed guards and warships dispatched by the European Union, NATO and a U.S.-led task force to protect vessels traveling through the Suez Canal, one of the world's busiest trade routes linking Europe to Asia, helped bring the problem under control. If national governments focus on their territorial waters -- the 12 nautical miles (14 miles) from their shores -- major naval powers could reduce piracy further afield in the gulf by deploying two or three frigates equipped with helicopters, said Jakob Larsen, head of maritime security at the Baltic and International Maritime Council, a Copenhagen-based shipowners' group. He considers such support unlikely because the sea routes aren't as strategically important as those off Africa's east coast. “There is little international appetite for getting involved in Nigeria's security problems,” he said. The Liberian Shipowners' Council urged the Nigerian authorities to disrupt the pirates' onshore criminal activities. Improving employment prospects for impoverished coastal communities would reduce the threat of piracy in the longer term, but won't address the immediate problem, said Kierstin Del Valle Lachtman, the council's secretary general.

Attacks Spread

While the west African attacks were initially concentrated offshore Nigeria, they've since spread to waters off Benin, Equatorial Guinea, Gabon, Ghana, Togo and Cameroon, according to Kamal-Deen Ali, executive director of the Accra-based Centre for Maritime Law and Security Africa and a former Ghanaian naval officer.

The number of violent attacks in the Gulf of Guinea has remained fairly consistent over the past decade, but abductions of more than 10 people have become increasingly commonplace, said Dirk Siebels, senior analyst at Denmark-based Risk Intelligence. The pirates are increasingly operating deeper out to sea, with kidnappings on average taking place 60 nautical miles offshore in 2020, according to the IMB. The furthest out took place in mid-July, when eight machine-gun wielding pirates boarded a chemical

tanker off Nigeria's coast and seized 13 crew members before fleeing. Only unqualified seamen remained on the Curacao Trader, which was left adrift 195 nautical miles from the coast. The crew were freed the following month. "The perpetrators of such incidents are perfectly aware there is almost no risk of being caught," said Munro Anderson, a partner at London-based maritime security firm Dryad Global. "That is precisely the kind of incident an international naval coalition could mitigate."

– *With assistance from Gina Turner.*

Source: [Insurance Journal](#); 19 January 2021

MARSHALLS FISHERIES HIRES ONE OF THE PACIFIC'S TOP FISHERIES EXPERTS

- Giff Johnson

The Marshall Islands Marine Resources Authority (MIMRA) has signed on one of the Pacific region's top fisheries experts provide it legal advice. The Authority's Director, Glen Joseph, confirmed Thursday that a contract was reached this week to hire Dr Transform Aqorau as the fishery department's legal advisor. Dr Aqorau, a former deputy director at the Forum Fisheries Agency in the Solomon Islands and more recently the first CEO of the Parties to the Nauru Agreement (PNA) office in Majuro brings a wealth of regional experience to MIMRA, said Joseph.

He headed the Majuro-based PNA office from 2010-2016.

Dr Aqorau presided over the full implementation of the PNA's Vessel Day Scheme management system for the purse seine fishery during his tenure, which has seen fisheries revenue for the member countries, including the Marshall Islands, skyrocket from US\$60 million in 2010 to nearly US \$500 million last year. The MIMRA's commercial fisheries revenue has changed dramatically because of participation in PNA, increasing from US\$2 million a year in the 1990s a record \$34.6 million in 2019. Joseph expressed delight at hiring Aqorau. "We need people like him," said Joseph. "He's been here so he knows the situation." Aqorau is being hired through a World Bank-funded regional fisheries program involving MIMRA, which is known as Pacific Islands Regional Oceanscape Program that is working to strengthen fisheries management. In the legal area, Aqorau joins Laurence Edwards, II, who has been the Majuro-based fisheries agency's legal counsel for many years. Joseph said the volume of legal work at MIMRA in both its oceanic and coastal programs has escalated to the point that "we're drowning."

Because of the border closure in the Marshall Islands due to Covid-19, Dr Aqorau will for the meantime be working from his home in the Solomon Islands, said Joseph. Aqorau has spent most of his professional life in fisheries. After leaving the PNA five years ago, he became CEO of iTuna Intel and a founding director of Pacific Catalyst. His book narrating the history of the PNA, "Fishing For Success: Lessons in Pacific

Regionalism," was published last year. In a widely-publicized development, Aqorau was tapped in mid-2019 by the Solomon Islands government to become its new Permanent Representative to the United Nations. But, Dr Aqorau said, a contract and related details were never forthcoming from the government after the Cabinet made the appointment. "After 18 months of waiting since I know when Cabinet made the decision (July 2019)...I decided that I cannot wait while there was disinterest in facilitating the posting," said Dr. Aqorau.

"I look forward to working for MIMRA, to be working for the Marshall Islands my second home, to serve the people of Marshall Islands, to give back to them for the confidence that they have shown in me," he said. "But more importantly to team up with a dynamic team at MIMRA with whom we can work together to shape international fisheries, while at the same time build up the excellent capacity that already exists there." Dr Aqorau added: "The headquarters of the PNA is in Marshall Islands, and so it would be great to be joining MIMRA in time for the new leadership at the PNA. This is also something that I look forward to, rejoining the group who have been key drivers of the fishery these past few years."

Source: [Radio New Zealand](#); 22 January 2021

MARINE ENVIRONMENT

OVER 90 PC OF HUMAN-MADE WARMING IS ABSORBED BY OCEANS, RECORD HIGH TEMPS WITNESSED IN 2020: STUDY

A new study, conducted by researchers from the National Center for Atmospheric Research (NCAR) has found that the temperatures in the upper 2,000 metres of the ocean hit a record high in 2020. The study further illustrated that just over 90 percent of the additional heat due to human-caused climate change is absorbed by the ocean. According to study authors, Ocean heat is a valuable indicator of climate change because it does not fluctuate as much as temperatures at the Earth's surface, which can vary in response to weather and natural climate variations. Study authors opine that the increase in ocean temperatures can cause a number of societal impacts as well. They add that the uneven vertical heating of the ocean also causes it to become more stratified, which in turn inhibits ocean mixing and the distribution of dissolved oxygen and nutrients, impacting marine ecosystems and fisheries.

Speaking about it, co-author of the study Kevin Trenberth revealed that ocean heat has exacerbated many significant climate-related events in recent history and has also contributed to the record number of billion-dollar disasters in the US in 2020. For the study, the team, led by Lijing Cheng, of the Chinese Academy of Sciences, used two different ocean heat datasets. One was from the Institute of Atmospheric Physics, and one from the National Centers for Environmental Information, which is part of the US National Oceanic and Atmospheric Administration. The study authors found that the two datasets yielded slightly different values for the globally integrated ocean heat in 2020 and even found that 2020 was the warmest year on record. Co-author John Fasullo added that the study showed them definitively that the ocean is warming and has been for decades. The results of the study have been published in the journal *Advances in Atmospheric Science*.

Source: [firstpost.com](https://www.firstpost.com); 18 January 2021

ANOTHER LIFE: IRELAND'S SALTMARSHES COULD VANISH AS SEA LEVEL RISES

- Michael Viney

It was great while it lasted – almost a week of sunshine to second-guess the start of the year. On days of crispness and quiet on the hill, one was listening for the gossip of ravens. At sunset, postponing the usual dusk, the sun sank not into lurid clouds but sustained a full-on blaze extinguished only at the line of the sea. In such an ingratiating interlude, little waves lapped at the shore. They returned a lot of the sand that winter surf drags out and left a soft selvedge at the edge of the tide. The storms will be back, of course, whenever it suits the NOAA (the National Oceanic and Atmospheric Agency of America). In the hurricane season I check its maps to see which maverick cyclone is spinning away north, perhaps to gather its remnants for the next name in Met Éireann’s whimsical lexicon. And now, after decades of inattention, the Government and its agencies are taking really seriously the threats of storms and surges of climate change. It’s most of 20 years since I first wrote about Integrated Coastal Zone Management, the national policy urged by the EU. Ireland’s leading authority on likely sea-level impact has been Dr Robert Devoy, professor of geography at UCC’s Coastal and Marine Resources Centre. On the immediate future, he was relatively reassuring. Much of our coast, as he described, already has high resilience, conditioned to extremes of big tides, frequent storms and heavy rainfall.

Clear dismay

Devoy’s key paper of 2008 was written, however, without the input of later and dramatically changing sea level scenarios. But it showed clear dismay at the lack of national readiness for coastal change. The feeling is shared also by many local authorities. Mayo County Council, with the longest coastline in Ireland, is forthright on its current website: “There is no over-arching national coastal management policy to provide any steer for management.”

But last autumn saw some promising movement: the first meeting of a new National Coastal Change Management Strategy Steering Group. Drawn from five departments, with the Office of Public Works (OPW), Met Éireann and local government representatives, it has six months to make a first report to Darragh O’Brien, Minister for Housing, Local Government and Heritage. As TD for Dublin Fingal, O’Brien says he understood “the grave challenges” of the group’s work, “coming from a constituency which has been, and continues to be, greatly impacted by coastal erosion.”

So the message has come home. And at the same time, in Brandon Bay on the north of the Dingle Peninsula, a yellow “smart” buoy a metre across and a trio of time-lapse cameras are ready to measure the assault of storms and the impact of rising sea levels on one of the longest sandy beaches in Ireland. This is the “Waverider” programme, led by coastal and ocean scientists in NUI Galway and the Marine Institute. The anchored, hi-tech Brandon buoy supplied by the Sustainable Energy Authority is the first of a long-term coastal network to provide the new steering group with baseline and modelling data. That storms claw at Ireland’s soft shores needs no proving. They have already remodelled the contours of many western bays and dune systems. So what more do we need to know? At the fringe of a changing ocean, the Brandon buoy will, it’s said, map the character of different storms and the height and behaviour of waves. As surf surges up to the foot of the dunes, three shoreline cameras funded by the Geological Survey will capture images every 10 minutes. Their daytime record of the beach will continue for the whole of 2021.

Research

The research array at Brandon is supported by the nearby Maharees community and its electronic base station is installed in a local family home. Modelling from Waverider will be tested against rising sea level scenarios used by the OPW. A conservative mid-range scenario sees a rise of half a metre by the end of the century; a “high end” scenario takes the rise to 1.05 metres. Last year, the Geological Survey produced a map of flooding in Dublin; it’s a worst-case scenario: a 1.9 metre rise by the year 2100.

Data from the new coastal buoys and cameras will help forecast the rates of retreat of soft shorelines and of potential damage to coastal towns and infrastructure. Already, the lack of policy for “managed realignment” is deplored in recent studies of Ireland’s 250 saltmarshes. Tucked away in the estuaries and indentations of the coast, notably in the west, these soft, watery fringes of the land are rich plant habitats and sinks for carbon. Without a managed landward migration, many will vanish in a “coastal squeeze” as sea level rises. Finding this a problem at a time of cataclysmic threats to coastal cities is to feel the parallel realities in today’s applications of science.

Source: [The Irish Times](#); 23 January 2021

ANTARCTIC: OCEAN'S COLD AT THE SURFACE, BUT SCORCHING DEEP DOWN

- Austine Rain M.

Scientists from the CNRS (French National Centre for Space Studies), CNES (French National Centre for Scientific Research), IRD (French Research Institute for Development), Sorbonne Université, l'Université Toulouse III - Paul Sabatier (Toulouse III) along with their Australian colleagues, have provided a comprehensive analysis on the Antarctic Ocean's temperature evolution over the last 25 years. This project was supported by the IPEV. Based on their study, the team concluded that the cooling measured on the surface of the ocean masks a temperature spike up to 800 meters deep. The phenomenon is directly pointed to major changes around the polar ice caps where temperatures increase by 0.04°C per decade. The rapid temperature rise can lead to severe consequences for the ice in the Antarctic regions. Underwater warm water conditions also rise rapidly to the ocean surface. The heating rushes to the top layer of the waters at an alarming rate of 39 meters per decade. The speed of ascending is around three to ten times faster than the previous estimate.

Ocean warming

Excess heat emitted by the greenhouse effect is absorbed mostly by the ocean. That is believed to be the primary reason for the rapid temperature spike. The rising water temperature is not a good sign for almost every living being on the planet. If the ocean continues to heat up, marine wildlife and ecosystems will be devastated. Hotter water can cause coral bleaching resulting in fewer breeding grounds for aquatic animals like fishes and marine mammals.

However, it's not just marine wildlife that is affected by the change in temperature. If the spike continues, many oceanic benefits will be affected too. The ones that humans are enjoying. Food sources will be shifted as fishes, and other ocean-based resources will slowly dwindle. Water conditions will also worsen, causing the spread of many waterborne diseases and illnesses. Extreme weather events are also inevitable if the ocean doesn't stop heating up. With the decay of water ecosystems, there will be lesser coastal protection that mitigates weather calamities. If Climate Change is Heating Up the Ocean, Why are Some Portions of the Ocean Surface Cooling The oceanic heat spike is a trend experienced by the waters around the world, except for some areas. The Southern Oceans (Antarctic) is experiencing a cooling period.

But, that may not last long.

Scientists believe that the sea surface and sea ice temperature around the Antarctic region is cooling and expanding due to intense global warming. But, why is global warming cooling the Antarctic? Many believed that the cooling period is due to the rapid melting of the ice caps. The melting causes a temporary water cooling effect that is being experienced by the surface. Unfortunately, the inevitable oceanic warming is catching up. Deep below the cooler water, the hotter temperature is barreling towards the surface. If the heat finally catches up, chances are the cold surface will eventually start to heat up. That is only natural as the world's internal temperature is still continuously heating up. And, human activity and climate change hasten it even more.

Source: [Nature World News](#); 22 January 2021

DEADLIEST CATCH: THAILAND'S 'GHOST' FISHING NETS HELP COVID FIGHT

Underwater divers in plastic-choked waters off the coast of Thailand snip through discarded nets tangled around a reef -- a new initiative helping protect marine life and aiding the fight against coronavirus. The "ghost nets" discarded from the country's lucrative fishing industry are a deadly source of plastic pollution, ensnaring turtles and cutting into delicate coral beds. Left unattended, "they could stay adrift for decades, either entrapping or becoming the food of marine animals," says Ingpatt Pakchairatchakul of the London-based Environmental Justice Foundation. Ingpatt was speaking to AFP during a recent boat trip off the coast of Chonburi province, as a team of more than 30 divers hacked away at stubborn threads enveloping a reef 27 metres (90 feet) below the vessel. She is part of Net Free Seas, a project that fetches used nets and turns them into new plastic products -- in this case meeting the burgeoning demand for protective gear like face shields to guard against the pandemic. It aims to prove that protecting sea creatures can be commercially viable in Thailand, one of the world's biggest producers of ocean waste.

The initiative also comes in the wake of a growing local outcry over the lethal effects of plastic on marine life. In one infamous example, a sick baby dugong named Mariam washed up in shallow waters two years ago and later died from an infection caused by plastic lining its stomach. It prompted an online outpouring of grief among Thais who

had spent months watching a live web broadcast of rescuers trying to nurse the creature back to health. Mariam was among the nearly two dozen dead or injured large marine animals found beached on Thailand's shores each year, according to Chaturathep Khowinthawong, the director of the kingdom's marine park management agency. "More than 70 percent of them are injured from the ghost nets and have cuts deep into their bodies," he says. "Once they get stuck, the chance of survival is less than 10 percent."

- 'We want to save the ocean' -

Net Free Seas has salvaged 15 tons of waste netting from sea waters in its first year of operation. That accounts for a tiny fraction of the 640,000 tonnes of lost and discarded fishing gear the UN Food and Agriculture Organization says finds its way into the oceans annually. But the scheme has met enthusiastic support from local fishing communities. "It's a win-win situation," says Somporn Pantumas, a fisherman in seaside Rayong city. "The fishing community gets to have another source of income, the beach and the sea are clean, and the fishermen find a sense of camaraderie." The 59-year-old is one of 700 people in fishing communities across Thailand selling worn out nets to the scheme. Somporn was easily convinced to participate, knowing the extent of marine pollution in the waters off Rayong -- he says his nets often collect more plastic debris than actual fish. "The more waste I collect from the sea, the more the current sweeps my way," he tells AFP. Collected nets are sent to be washed, shredded, mixed with other discarded plastics and melted into shape at Qualy Design, a small business that moulds homewares out of recycled goods.

Qualy is using the nets to make face shields, alcohol spray bottles and table divider screens used in restaurants around Bangkok since the onset of the pandemic. The breakthrough product has been plastic push-sticks, which allow people to press elevator buttons or public touchscreens like ATM consoles without risking infection. Compared to other materials, nets are the hardest to work with and the most expensive, says the firm's marketing director Thosphol Suppametheekulwat tells AFP. "But we really jumped on it because we want to save the ocean as well," he says.

Source: [france24.com](https://www.france24.com/en/asia-thailand/20210122-net-free-seas-thailand); 22 January 2021

GEOPOLITICS

THE INDIAN OCEAN AS A REGION OF FUTURE CONTESTATION

- Vijay Gokhale

For two thousand years until the advent of European domination, the Indian Ocean had been the world's center of economy and trade. All manner of goods moved through it from Asia to the markets of Europe, and the Indian peninsula was central to both trade and security. European maritime advances at the turn of the 16th century gradually turned the Indian Ocean into a British lake. The economic and political center of gravity shifted initially to the Atlantic and then to the Pacific Oceans, and even the discovery of oil in the Arabian Peninsula in the early 20th century could not restore the Indian Ocean's primacy. After the Second World War, the Americans replaced the British in the Indian Ocean as the principal provider of international security public goods, primarily to ensure uninterrupted energy supplies, but the region was neither a major post-war economic hub nor a region for political contestation.

In the 21st Century, the Indian Ocean once more stands on the cusp of change, and for good reason. Asia has the highest concentration of the world's fastest-growing economies and a significant proportion of global trade again moves through the Indian Ocean. Asian economies host critical segments of the global supply chain for manufacturing hubs from Tokyo to Dusseldorf. The Middle East still holds the keys to global energy security. Asian demographics are determining global consumption on which the prosperity of the rest of the world depends. The Indian Ocean has three critical choke-points – the Baba-el-Mandeb, the Straits of Hormuz and the Malacca Straits. If any of these key waterways are hindered by accidents, blockade, piracy, terrorism or war, the consequent disruption of energy and trade flows would have global repercussions. The law concerning transit passage through the straits was one of the contested issues as part of the negotiations of the 1982 UN Convention on Law of the Sea (UNCLOS). The Indian Ocean region also faces geopolitical stresses. Some of these are long-standing such as the contestation between India and Pakistan or the rivalry between Iran and Saudi Arabia for supremacy over the Islamic World; but others are newer, such as the tension between Iran and the United States, the threat posed by Islamic radicalism to the safety and security of sea-lanes of communication, and the threat to international shipping from piracy off the coast of Somalia or in the Mozambique channel.

One geopolitical challenge, however, will dominate the Indian Ocean in the coming decades – the contestation between America and China for global supremacy. As a rising China seeks to dominate the Eurasian landmass and the Indian Ocean rimland as the 'axial' state, it is rubbing up against the current hegemon, America, and nowhere

is this more apparent than in the Indian Ocean. China's influence, which is already expanding in Asia as a result of its global economic share and through the pursuit of geo-economic strategies like the Belt and Road Initiative, is poised to gain a military edge. China is undertaking the most ambitious warship building program of this century, including three aircraft carriers, and, by one estimate, will surpass the combined number of American and Indian warships by 2030 [Capt. James Farrell: China's Global Navy Eyeing Sea Control by 2030, Superiority by 2049, The Sunday Guardian, 13 June 2020]. Given that 80% of China's energy, 43% of raw material consumed and more than 55% of China's exports go through the Indian Ocean, it could be said that China has legitimate interests in protecting this economic life-line, but recent actions suggest that China's naval ambitions have strong geo-strategic impulses as well. The new military base in Djibouti and the dual-use ports that it is building in the Indian Ocean close to the choke-points, as well as its stated intention to use the navy to safeguard China's developmental interests abroad [China's Official Defence White Papers 2015 & 2019], appear to suggest a hidden agenda. America is still, by far, the dominant security guarantor in the Indian Ocean but its run appears to be nearing the end. Prima facie, the Americans still outspend the Chinese on defence by a ratio of 4:1, but when looking closer at the trends it becomes clear that while US defence expenditure over the ten years from 2007 to 2016 actually declined by 4.8%, China's spending in the same period increased by 118% [SIPRI Report 2017].

The Trump Administration's recently declassified document titled 'US Strategic Framework for the Indo-Pacific' [released by the White House on 12 January 2021] recognizes China as the primary State actor of concern in the Indian Ocean going forward. It considers the building of alliances and partnerships as, possibly, the only way to offset its relative decline and to counter the domination of the Indo-Pacific by China. Not surprisingly, India is identified as a key strategic partner (outside the formal US alliance partners), and a stated goal is to accelerate India's rise and capacity to serve as a net provider of security in the Indian Ocean. It should come as no surprise that India's proximity to the US has increasingly caused concern in Beijing. Some Chinese scholars have recently averred that China has made up its mind that India will lean towards the US, and that China will be the object of containment [Ye Hailin: The Influence of Identity Perception Bias in India-China Relations, India-China Dialogue, November 2020, and Liu Minwang: A New Crossroads in Sino-Indian Relations, Pangoal Thinktank, October 2020]. India is thus, willy-nilly, being dragged into the Sino-US competition in the Indian Ocean. India's greatest test in the coming decade will be how to establish a balance between these two, that will also allow India to recover its position as the fulcrum State in the Indian Ocean in terms of both economics and security.

While a number of domestic measures, that include substantial new investment in capital assets for the Indian Navy, the development of indigenous capabilities in unmanned underwater vehicles, improvement of ports, development of coastal shipping, economic use of off-shore islands and so on, will be needed to strengthen our regional economic and military capacities to become a net security provider in the northern Indian Ocean, rule-setting and rule-making will be just as critical. Just as Europe saw a wave of legal and quasi-legal agreements that established new rules for security and peace after the Second World War, and like East Asia which is currently grappling with a Code of Conduct for the South China Sea, India will need to engage

with the littoral States and outside powers to establish a rules-based order in the Indian Ocean. None exists at present.

The challenge that we already confront is the encroachment by Chinese (and American) maritime research & survey vessels into our Exclusive Economic Zone (EEZ) and Continental Shelf (CS). India has legislation (Act No. 80 / 1976) requiring foreign marine scientific vessels to seek prior license but interpretation of law, as well as enforcement, is a challenge. The Law of the Sea Convention is open to different interpretations on the question of military uses and scientific surveys in the EEZ of coastal states. Survey work is now being undertaken by naval vessels under the cover of freedom of the high seas or in the name of 'lawful' uses of the sea. The challenge, therefore, is one of improving the law through negotiation of codes of conduct or mutually agreed understandings and of enhancing military capability for deterrence and interdiction. A second challenge is the possibility that China might conduct Freedom of Navigation operations (FONOPs) by sailing warships along our coasts or in the waters off our island territories, just beyond the 12 nautical mile limit, on the grounds that this is 'innocent passage' by naval vessels. The Law of the Sea Convention says that military vessels have 'right to innocent passage' to traverse the territorial sea of a coastal state without entering internal waters so long as it is not prejudicial to peace, good order and security of the coastal state. Since Chinese warships are probably not acting 'innocently' [See the various activities that UNCLOS specified, in Article 19, when involved as part of the passage of foreign ships through the territorial waters that make the same as non-innocent. See also articles 21 and 24 in this regard], we might need to challenge such activity, but India does not have protocols or a legal framework to such encounters.

A third, imminent, challenge is the deployment of unmanned underwater drones (which might be armed) inside our EEZ or in ways that might threaten our warships on the open seas. The importance of developing a regional or multilateral legal framework to handle this is now pressing. It will need a sound understanding of both current international conventions relating to the seas as well as new technologies. It is important that India is active in shaping the framework in a way that preserves its freedom of action and security. A fourth challenge is the handling of piracy and other threats to international shipping from non-State actors. India, as a fulcrum State, will be expected to provide international security public goods for such purposes. [The *Enrica Lexie* case between India and Italy highlighted several aspects governing national and international action concerning piracy in the Indian Ocean and efforts on the part of the IMO, the coastal States in the region including India to contain and eliminate pirate attacks and the laws or regulations that are in effect]. Protocols on joint patrols [similar to the Malacca Straits Patrol by Malaysia, Singapore, Thailand and Indonesia] as well as institutionalized cooperation between States Parties in handling environmental and other marine disasters that might overlap territorial boundaries, will require legal frameworks and structures. Finally, as India becomes a major maritime power, bilateral and multilateral agreements to deal with close encounters at sea with other navies is becoming a necessity.

With China's near-permanent presence in the Indian Ocean likely in this decade, and the growing rivalry with America, India has no choice but to pro-actively try to shape the future of the Indian Ocean in its favour. This can be done, provided that we invest

in developing both military and legal expertise in order to create a multilateral framework that maintains India's supremacy in the Indian Ocean as it once again becomes the centre of the world's stage.

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Source: [Law School Policy Review](#); 23 January 2021

SINGAPORE JOINS INDIA AS INDO-PACIFIC PARTNER

- Ateet Sharma

New Delhi, Jan 22 (IANS): Even as 'vaccine diplomacy' continues to strengthen India's ties with its neighbours and key partner countries, the Narendra Modi government continues to make significant progress in expanding existing partnerships in the Indo-Pacific region to shape a new regional order. The signing of the Implementing Agreement on Submarine Rescue Support and Cooperation between the two Navies during the fifth India–Singapore Defence Ministers' Dialogue (DMD) held virtually between Rajnath Singh and his Singaporean counterpart Dr Ng Eng Hen today will result in a substantial increase in bilateral cooperation and defence partnership built over the years.

India has maintained that it does not see the Indo-Pacific region "as a strategy or as a club of limited members or as a grouping that seeks to dominate" and that "it is not directed against any country but stands for "a free, open and inclusive region". However, the fast-changing power dynamics in the region, including the revival of Quad, has seen many countries cement their ties with India, a country which has always had an "independent" foreign policy. India and France, during their annual Strategic Dialogue held earlier this month, had also extensively discussed cooperation in the Indo-Pacific region. With India batting for a stable and prosperous Indo-Pacific, the defence and security engagements between India and Singapore have broadened significantly in scale and scope across all three Services of the Armed Forces as well as in the areas of defence technology and industry. Both countries have also found common ground on multilateral fora and engagements. The Joint Statement released by both the countries after the DMD reaffirmed both countries' commitment to strengthen defence cooperation. Both Ministers recognised the positive trajectory of bilateral defence relations that has expanded into new areas of cooperation, such as in Humanitarian Assistance and Disaster Relief (HADR) and cybersecurity.

The Indian Navy and Republic of Singapore Navy (RSN) successfully conducted the 27th edition of Singapore-India Maritime Bilateral Exercise (SIMBEX) and also participated in the second edition of the Singapore-India-Thailand Maritime Exercise (SITMEX) in November 2020. These exercises not only enhanced inter-operability

amongst the navies but also underscored the shared responsibility of the countries to work together to keep sea lines of communications open. Incepted in 1994, SIMBEX is one of the RSN's longest-running bilateral exercises and has over the years grown in scope and complexity, expanding beyond conventional naval warfare to include elements of maritime security. During the SIMBEX 'at-sea only' exercise in the Andaman Sea and Indian Ocean last year, the two navies executed gunnery firings, manoeuvring drills, communication exercises and advanced naval warfare serials, including anti-submarine and anti-surface warfare drills. While Singapore had sent two formidable-class frigates, RSS Intrepid and RSS Steadfast (embarked with an S-70B naval helicopter) and the Endurance-class landing ship tank RSS Endeavour for the exercise, the Indian Navy had participated with the Rajput-class destroyer INS Rana (embarked with a Chetak helicopter), Kamorta-class corvette INS Kamorta, Kora-class corvette INS Karmuk, Sindhughosh-class submarine INS Sindhuraj, and a P8I maritime patrol aircraft.

Singh reaffirmed today ASEAN centrality in the regional security architecture and pledged India's support to all endeavours of the ASEAN Defence Ministers' Meeting (ADMM)-Plus, Dr Ng expressed support for India's upcoming co-chairmanship of the ADMM-Plus Experts' Working Group on Humanitarian Assistance and Disaster Relief (HADR). "There are many new areas, including defence technology, that both sides can build shared interests and shared capabilities... Overall, our defence ties and military engagement with India have grown significantly, and we welcome this partnership. I am very happy that Minister Singh and I share a common purpose to push defence ties even stronger," the Singapore Defence Minister said after the meeting.

Both ministers also conveyed their full support towards the early conclusion of agreements to facilitate conduct of live firings and to establish reciprocal arrangements for the cross-attendance of military courses. Meanwhile, Defence Minister Ng Eng Hen has also announced that the annual Shangri-La Dialogue, one of Asia's premier defence summits organised by the International Institute for Strategic Studies (IISS), will be held this year after being cancelled in 2020 due to the Covid-19 pandemic. The unique meeting where ministers debate the region's most pressing security challenges, engage in important bilateral talks and come up with fresh solutions together has seen an active participation from India since it was launched in 2002.

Source: [Daiji World](#); 22 January 2021

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