



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

OPERATION SANKALP: INDIAN NAVY COMMENCE MARITIME SECURITY OPERATIONS FOR MERCHANT VESSELS IN STRAIT OF HORMUZ

In wake of the deteriorating situation in the Middle East, India has launched a maritime security operation to promptly respond to the emergency situations for Indian sea vessels. The Indian Navy on Wednesday said that they have commenced security operations called 'Operation Sankalp' in order to ensure safe passage of Indian Flag Vessels through the Strait of Hormuz. "In the backdrop of the deteriorating security situation in the Gulf region, post attacks on merchant ships in the Gulf of Oman in June 19, the Indian Navy had commenced maritime security operations, code named 'Operation Sankalp', in the Gulf Region on 19 June 2019 to ensure safe passage of Indian Flag Vessels transiting through the Strait of Hormuz."

The navy further said, "Indian Navy warships and aircraft have been deployed to establish presence, provide a sense of reassurance to the Indian merchantmen, monitor the ongoing situation and respond to any emergent crises. One warship is presently deployed for Operation Sankalp." The operation is being progressed in close coordination with all stakeholders including the Ministry of Defence, Ministry of External Affairs, Ministry of Shipping and Ministry of Petroleum and Natural Gas, the official statement said. "Regular inter-ministerial meetings have been held to review the evolving maritime security situation in the Gulf region."

"The Indian Navy continues to monitor the situation in the Gulf region and is maintaining presence in the region to ensure security of our sea borne trade and the safety of Indian Flag merchant vessels transiting through the region. The Indian Navy stands committed to protection of the nation's maritime interests," the official statement said. Tensions in the Middle East are on the rise after the US killed Iran's major general Qasem Soleimani in a drone strike on January 3. India, being a vital business partner of the Islamic nation, has voiced concern and said that it will do its best to help de-escalate the situation and prevent it from becoming a war-like situation.

Source: timesnownews.com; 8 January 2020

CONFINED SPACE HAZARDS ON SMALL VESSELS

- Andrew Tucci

A U.S. Coast Guard officer tries to open a sticking hatch while examining a commercial vessel. When it opens there is a barely perceptible rush of air into the space. The vessel master says that they recently put a new gasket on the hatch, and that is probably why it was sticking. The officer lowers an oxygen meter into space. The alarm sounds before the sensor is halfway down, and registers less than 16 percent oxygen. Was this a ballast tank on an oceangoing tanker, or the mysterious catacombs of some behemoth of the offshore industry? Not at all. This was a forepeak on a small tugboat in Boothbay Harbor, Maine. The compartment contained nothing more exotic than bosun stores and a little rust. I was a young Coast Guard officer, and came as close to death that day as any in my 28 years of service. Deadly confined spaces are ubiquitous in the marine industry, including big ships, tugs and barges, commercial fishing vessels, and port infrastructure. Despite all manner of training, equipment, regulations and best practices, they continue to kill. A healthy dose of caution and above all leadership is needed to ensure that these spaces take no more lives. Generally, a confined space is not designed for normal human occupancy and usually has other risk factors, such as poor ventilation, inward sloping walls/floors, limited means of entry and the potential for various atmospheric, electrical, and/or mechanical hazards. Various chemical and biological processes can make the atmosphere in a confined space deadly. Rust, fire, drying paint or the decomposition of organic matter can consume oxygen, while oil/chemical fumes, carbon monoxide from internal combustion engines, welding/brazing gases or something as simple as a leak from a BBQ propane tank can displace oxygen and/or create a toxic, flammable or explosive atmosphere. Confined spaces may have exposed wiring, rotating machinery, steering linkages and the rusted knife edges of degraded structural members or the cowling around hatches. When was your last tetanus shot?

A relatively small decrease in oxygen results in impaired judgment and fatigue, so a person may not recognize the symptoms, make the best decisions or even have the strength to call for help. Larger decreases in oxygen can quickly induce coma and death in a matter of seconds. It is likely that many of the people who enter confined spaces, including would-be rescuers, think that they are somehow immune to these effects. No amount of physical conditioning, mental preparation, or “holding your breath” can change the laws of chemistry and biology. If you enter an oxygen deficient space, you WILL be affected. If you are in the terrible situation of seeing a person incapacitated in a confined space, recognize that no matter your courage, the space will have the same effect on you. Call for help, get fresh air into the space if possible, but stay out. Ashore and afloat, there are regulations and safe work practices for confined space entry. Follow them without fail. The fact that smart confined space entry procedures require tripods, hoists, instruments and breathing equipment should be enough to tell us that this is a serious matter. While most confined spaces in any given work area are recognized, marked and controlled, the maritime world is a dynamic place. All too often, spaces previously considered safe become hazardous, and special activity

creates some reason to enter spaces that may not manifest obvious safety hazards. Atmospheric hazards are especially tricky. Warning signs, such as the sticky hatch I noted years ago, are very much the exception, not the rule. In most cases, there are no obvious, easily detected warning signs. Workers need to assume that any suspect space is unsafe until proven otherwise. In routine operations, complacency is our enemy. The fact that a space has always tested safe in the past must not allow us to forego rigorous safety procedures. When in doubt (and you should always be in doubt), trust your instincts. If a place looks risky, stay out. Urgency and unusual situations are even greater threats. A break in routine is a warning sign. Pay attention. Accident investigators across all fields hear the phrase “Well, normally we do X, but that day, we had to...” when conducting their post mortems. Keep in mind that confined spaces aren’t going anywhere, and in most cases, neither should you. Slow down. Take the time to recognize and act on risk. While most organizations claim that safety is the #1 priority, there is often a belief that the people at the top aren’t as fully committed as their words suggest. This perception creates the conditions that lead to deadly accidents. One way to demonstrate that commitment is an investment in technology. Drones, remote sensing instruments, new materials and predictive maintenance programs are reducing the need for humans to go into confined spaces.

If you have spaces that require routine entry, consider retrofits or technology solutions to eliminate the need for human entry. If you encounter an unusual situation that may require human entry, insist on a thoughtful operational risk management review, and consider technology options before sending in the people on your team. While we need to take advantage of advances in technology, industrial hygiene and risk management, the basics of confined space hazards and safe work practices aren’t terribly complex. We’ve had the ability to address these risks for longer than most of us have been alive. We need only one thing more to keep our crews alive: A highly visible, sustained and sincere commitment to a strong safety culture by the most senior personnel in any organization. Examine the space from outside the entrance. You may be able to see everything you need from outside the space, and don’t need to enter at all. Ask yourself what hazards might be in the space, and how to avoid them. Could there be fuel vapors, or containers of paint, solvents or other compounds that might displace the oxygen? Is there rust or decaying organic matter that might consume the oxygen? Any machinery that might be leaking exhaust into space, or simply have unguarded moving parts that might take off your arm or crush your hand? Ask yourself how you could help someone in the space if they were injured or incapacitated by an oxygen deficient or toxic atmosphere. Remember that if an unsafe atmosphere causes one person to pass out, it WILL have the same effect on anyone else who enters the space, unless they are wearing self contained breathing apparatus. Mental preparation, physical strength and holding your breath will make absolutely no difference, you will simply be the next victim. In fact, nationwide, something like one third of all confined space deaths are rescuers who either did not recognize the problem, or somehow thought themselves immune.

If you have any type of oxygen monitor or alarm, use it whenever in doubt. It won’t help you if it is left in the gear locker. Know the limitations of your equipment, and remember that alarms don’t generate oxygen. They may warn you of a hazard; they can’t make any space safe. If you suspect a confined space may be hazardous, the best procedure is simply to not enter that space. No mission is worth your life. As far as I’m

concerned, the Coast Guard can keep that Servicemembers' Group Life Insurance. I plan to collect retirement pay well into my 90's, as I hope we all do.

Source: maritime-executive.com; 11 January 2020

USCG: CYBERATTACK PENETRATED CARGO FACILITY OPERATING CONTROLS

In a marine safety bulletin issued in December, the U.S. Coast Guard warned the maritime community to harden defenses against phishing and cyberattacks after a new outbreak of encryption ransomware at a maritime facility. In the bulletin, the USCG disclosed a recent virus attack at an unnamed Maritime Transportation Security Act (MTSA)-regulated facility. As the U.S. implementation of the ISPS code, the MTSA covers a wide range of maritime facilities, including barge fleet areas, commercial ports and terminals. (The attack has been widely misreported as a malware infection at a U.S. Coast Guard base.)

Forensic analysis is still under way, but the virus, identified as “Ryuk” ransomware, may have entered the network of the MTSA facility via an email phishing campaign. Once the embedded malicious link in the phishing email was clicked by an employee, the ransomware allowed the attacker to access the facility's business (enterprise) network files and encrypt them, preventing access to critical information. Further - and more troubling - the virus burrowed into the facility's industrial control systems, which monitor and control cargo transfer. On the control system network, the virus encrypted files critical to process operations. In total, impacts to the facility's operator included a disruption of the entire corporate IT network (beyond the footprint of the facility), disruption of camera and physical access control systems and loss of critical process control monitoring systems. These combined effects required the company to shut down the primary operations of the facility for over 30 hours for a cyber-incident response.

According to the Coast Guard, several measures may have prevented or limited the breach and decreased the time needed for recovery:

- Intrusion detection and prevention systems to monitor real-time network traffic
- Industry-standard, up-to-date virus detection software
- Centralized and monitored host and server logging
- Network segmentation to prevent IT systems from accessing the Operational Technology (OT) environment
- Up-to-date IT/OT network diagrams
- Consistent backups of all critical files and software
- Verifying the validity of the email sender prior to responding to or opening unsolicited email messages.

- Implementing U.S. Cybersecurity and Infrastructure Security Agency (CISA) best practices

Global reach

According to the UK's National Cyber Security Centre (NCSC), the Ryuk malware was first seen in August 2018 and has been used in multiple attacks globally. Ryuk is a targeted ransomware where demands are set according to the victim's perceived ability to pay. The Ryuk ransomware is often not observed until a period of time after the initial infection – ranging from days to months – which allows the actor time to carry out reconnaissance inside an infected network, identifying and targeting critical network systems and maximizing the impact of the attack. According to NCSC, when a Ryuk infection occurs, the attacker uses additional post-exploitation software tools to enable illegal activity within the target network. These additional tools facilitate credential harvesting, remotely monitoring the victim's workstation and carrying out lateral movement to other machines within a network. "Access to compromised machines can be sold to other criminal operators at any stage in this process, either as a facilitated deployment, or through the sale of credentials for the compromised network," NCSC warned.

Source: maritime-executive.com; 1 January 2020

ASIA MINUTE: PIRACY SURGES IN SOUTHEAST ASIA

- Bill Dorman

2020 began with celebrations around the world. And as always, the Asia Pacific was the first region to ring in the New Year. But while fireworks and parties marked the event — there's also a ton of caution in one area for an unusual reason: pirates.

Pirates are making a bit of a comeback in one of the busiest commercial shipping areas of the world — in Southeast Asia. An industry group says the Strait of Malacca and the Strait of Singapore have experienced a rise in sea piracy in recent months, and a relative surge in 2019. The group that tracks the incidents include 20 countries, and has the unwieldy name of the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia. The group says piracy incidents more than tripled in 2019 — from 8 to 30 — a four-year high. The straits run along the southwest coast of Peninsular Malaysia — stretching beyond Singapore, which is the top regional center for refueling ships. On Christmas Day, half a dozen people boarded an oil tanker heading for Singapore, but fled in a small boat after the ship's chief engineer spotted them and set off an alarm shortly after midnight. The group monitoring such incidents says there were half a dozen in the last weeks of 2019. The confrontations vary — with some focusing on theft of items from crew members, and others stealing engine parts, generators, and other equipment. The group also says that because there have been no arrests following the latest piracy, there is "a possibility of further incidents in the Singapore Strait."

Source: hawaiipublicradio.org; 1 January 2020

INDONESIA BOOSTS PATROLS AFTER CHINESE “TRESSPASS”

Indonesia has increased patrols around islands near the disputed South China Sea after a Chinese coast guard vessel "trespassed" into Indonesia's exclusive economic zone, authorities said on Friday. The Chinese vessel entered waters off the coast of the northern Natuna islands in mid-December, leading Indonesian foreign ministry to issue a “strong protest” and summon the Chinese ambassador in Jakarta. Speaking in Beijing on Tuesday, Chinese Foreign Ministry spokesman Geng Shuang had said China had sovereignty over the Spratly islands and their waters and that both China and Indonesia have "normal" fishing activities there. He did not mention the Natuna islands, which lie to the southwest. China claims most of the energy-rich South China Sea. Neighbors Brunei, Malaysia, the Philippines, Taiwan and Vietnam also have claims. Nursyawal Embut, director of sea operations of Indonesia's Maritime Security Agency, told Reuters that the agency had deployed more ships to the Natuna Sea. "We're intensifying patrols in the sea to anticipate territorial violations, and also illegal fishing at North Natuna. We're trying to prevent foreign ships from violating our territory," he said. Foreign Minister Retno Marsudi also told reporters that the government had agreed to increase patrols in the waters and reiterated Indonesia's accusations against China. Indonesia on Wednesday called on Beijing to explain the “legal basis and clear borders” regarding its claims to the exclusive economic zone. Chinese embassy in Jakarta did not immediately respond to a Reuters request for comment. Indonesia has repeatedly clashed with China over fishing rights around the Natuna Islands, detaining Chinese fishermen and expanding its military presence.

Source: marinelink.com; 3 January 2020

MARITIME FORCES

ROYAL NAVY INVESTING IN AI WARSHIPS THAT MAKE OWN DECISIONS

The Ministry of Defence is set to invest millions of pounds in the development of Royal Navy warships with Artificial Intelligence that can make decisions for themselves. The MoD's Defence and Security Accelerator (DASA) announced the first wave of £4 million funding for the programme today. It comes just 24 hours after the Royal Navy announced that specialist autonomous minehunting equipment - including submersibles and boats has now entered military service and will be on live operations from March. Now the MOD is thinking bigger and looking to develop intelligent warships that can think for themselves and take appropriate action.

An MOD DASA spokesperson said: "The funding aims to revolutionise the way warships make decisions and process thousands of strands of intelligence and data by using Artificial Intelligence (A.I.)." Nine projects will share an initial £1 million to develop technology and innovative solutions to overcome increasing 'information overload' faced by crews as part of DASA's Intelligent Ship – The Next Generation competition.

Defence Minister James Heappey said: "The astonishing pace at which global threats are evolving requires new approaches and fresh-thinking to the way we develop our ideas and technology. The funding will research pioneering projects into how A.I and automation can support our armed forces in their essential day-to-day work." Intelligent Ship is focused on inventive approaches for Human-AI and AI-AI teaming for defence platforms – such as warships, aircraft, and land vehicles – in 2040 and beyond. DASA, on behalf of the Defence Science and Technology Laboratory (DSTL), is looking at how future defence platforms can be designed and optimised to exploit current and future advances in:

- Automation
- Autonomy
- Machine learning
- Artificial Intelligence

A spokesperson said: "These key areas of research will look to address the complex and constantly evolving threats to national security." This work will inform requirements then develop applications essential to the future force in an increasingly complex and A.I. driven environment. Although titled Intelligent Ship, a warship is just the prototype demonstrator for this competition – the project will inform development relevant to all defence equipment and military services."

Julia Tagg, technical lead at the Defence Science and Technology Laboratory (Dstl) said: "This DASA competition has the potential to lead the transformation of our defence platforms, leading to a sea change in the relationships between AI and human teams. This will ensure UK defence remains an effective, capable force for good in a rapidly changing technological landscape." Crews are already facing information overload with thousands of sources of data, intelligence, and information. By harnessing automation, autonomy, machine learning and artificial intelligence with the real-life skill and experience of our men and women, we can revolutionise the way future fleets are put together and operate to keep the UK safe." The competition, currently backed by a total of £4 million over two phases, has the potential to transform the way the Royal Navy, British Army and Royal Air Force equipment platforms are designed, work together, operated and manned by the 2040s. "Innovations developed in phase 1 of the competition could later help determine the different platform types, size and role of future platforms as well potentially being adapted and integrated into the existing fleet.

Source: plymouthherald.co.uk; 14 January 2020

ACTING NAVY SECRETARY LAUNCHES INITIATIVE TO FIX PROBLEMS WITH USS GERALD R. FORD

- Todd Corillo

The Acting Secretary of the Navy has launched an initiative to fix a plethora of problems with the USS Gerald R. Ford aircraft carrier. The Ford is the first in a new class of carriers for the Navy. Delays, cost overruns and issues getting new technology to work, including systems that launch aircraft and Advanced Weapons Elevators, have plagued the Ford. Acting Secretary of the Navy Thomas Modly has launched the "Make Ford Ready" initiative. As part of that effort, Modly convened a summit last Thursday bringing together Navy and industry experts to help get the Ford into fleet operations as quickly as possible.

"While this is an 'all hands on deck' priority that can only be accomplished through the dedicated efforts of the Ford team, it will also require broad, department-wide encouragement, enthusiasm, and support for our shipmates and industry partners who will be heads down on the tasks at hand," Modly said in a statement. "We all have a stake in the success of this effort--for the future of our Navy, our national security, and security of the world."

"I'm extremely bullish on Ford -- and our Navy should be too," said Chief of Naval Operations Admiral Mike Gilday in a Navy statement. "The Ford-class carrier is the future. It is a phenomenal ship designed to deliver increased capability for the carrier air wing of tomorrow. While good progress has been made over the past several months, together we must keep Ford headed in the right direction -- and get her where

she needs to be – operating forward at sea to reassure allies, deter adversaries, and protect our national interests around the world.”

The Ford returned to Naval Station Norfolk in late October following a Post-Shakedown Availability at Newport News Shipbuilding. The carrier is now in the Post-Delivery Test and Trials period, scheduled to continue through mid-2021. Already, the crew has completed two underway test and training sessions at sea. More work is expected to certify fuel system, do testing to make sure aircraft are compatible, and conduct combat system testing.

Source: wtkr.com; 14 January 2020

TENSIONS ESCALATE BETWEEN INDONESIA AND CHINA AFTER DISPUTE IN MARITIME SOVEREIGNTY; INDONESIA MOBILIZES FISHERMEN

In an unforeseen escalation of tension between Indonesia and China regarding fishing rights off the South Asia coast, Indonesia is set to mobilize fishermen to join warships in the South China Sea to defend the waters from Chinese vessels, the Independent reports. The discrepancy stems from the disillusioned and ambiguous ownership of maritime global trade routes—areas in the South China Sea to which China has claimed rights based on “historic activity”—which are notorious for their plentiful fishing grounds and energy reserves. Meanwhile, other Southeast Asian countries, the United States, and other world powers deny this claim as having no legal basis, the South China Morning Post reports.

Indonesian vessels and Chinese fishermen commonly confront one another within this ambiguous territory; however, tensions have escalated in mid-December due to the presence of a Chinese coastguard vessel that had even prompted the Indonesian government to call upon the Chinese ambassador, the South China Morning Post reports. According to Reuters, the last instance of such tension between Indonesia and China over the South China Sea was in 2016, when a Chinese coastguard vessel sought to free a Chinese fishing boat after its interception by Indonesian authorities for allegedly fishing illegally. In a statement that has been described as “unusually strong,” Indonesian President Joko Widodo told reporters that “there is no negotiation when it comes to our sovereignty.”

According to the Independent, Indonesia’s chief security minister Mahfud MD reported that 120 fishermen from the island of Java would be sent to the Natuna islands to “operate by fishing there and other things,” while the country is also increasing their warship presence in the area. On Tuesday, Indonesia took these tensions a step further and deployed four fighter jets to the South China Sea in a bid for sovereignty and legitimacy within China’s alleged “exclusive economic zone.” According to the New York Times, Indonesia’s air force spokesman, Fajar Adriyanto,

said that four F-16 jets had been conducting flights and “standard patrols” over the islands; the spokesman also expressed that there was little risk of violent confrontation with Beijing. Chinese foreign ministry spokesman Geng Shuang responded to the Indonesian deployment of fighter jets on Tuesday by stating that “both countries shoulder responsibility for maintaining regional peace and stability.” Despite this plea for peaceful reciprocity, China has also been involved in escalated tensions in disputed waters off of Vietnam’s continental shelf where China was awarded oil concessions, the New York Times reports.

Rights and claims to “ungovernable” oceanic trade routes have always been causing tension between two sovereign states who share specific routes of passage. It is each state’s responsibility to provide diplomacy and communication to maintain peace and reciprocity within neutral territory. The presence of militarized symbols such as coastguard vessels and fighter jets can be interpreted as symbolic—if not blatantly abrasive—forms of aggression. However, within a world system where the notion of national sovereignty has consumed national security and national agenda, and while maritime routes remain vital for trade and economic development, disputed waters will continue to cause discrepancies and can also lead to violence. It is important, then, to call upon diplomacy and professional communication between diplomats and public officials and to condemn micro-forms of aggression on both sides.

Source: theowp.org; 14 January 2020

US ARMY HELPS SET UP MIDEAST MARITIME SECURITY PROGRAM

Col. John Conklin (U.S. Army) received three days’ notice before deploying to Bahrain to lead the setup of a headquarters operation for Operation Sentinel, the international mission to ensure freedom of navigation in the Persian Gulf region. Conklin’s Joint Planning Support Element, or JPSE (pronounced “gypsy”) deploys on short notice to assist joint force commanders with establishing joint force headquarters. “It’s a tremendous tasking to stand up a coalition task force — with this unique mission, and the operating environment, but what we’re accomplishing is incredible,” Conklin said.

When he arrived in early October, Conklin served as the chief of staff of the International Maritime Security Construct (IMSC). He integrated a U.S. joint team with officers from the Royal Navy to plan and stand up Coalition Task Force Sentinel, the military organization under IMSC. The coalition task force soon integrated another team from the Australian Navy. The team developed a plan, wrote an operations order and stood up IMSC. Bahrain joined the coalition in August. Saudi Arabia and the United Arab Emirates joined in September, and Albania, the newest member, joined in November.

In a little over two months, Conklin and his inter-agency crew built a joint force headquarters from nothing. Officially dubbed the IMSC, the U.S.-led coalition formally launched in November, opened a new command center at Naval Support Activity, Bahrain, and welcomed its first appointed commander, Rear Adm. Alvin

Holsey. The IMSC leads Operation Sentinel, U.S. Central Command's multinational maritime effort to ensure freedom of navigation in the Persian Gulf region. Its mission is to protect freedom of navigation in the Persian Gulf, Gulf of Oman, the Red Sea, the Straits of Hormuz and Bab el-Mandeb – a response to recent Iranian interference with merchant shipping. Countries that join the IMSC provide warships to escort their nation's commercial vessels through the region. Through the construct, participating countries share information and surveillance in one of the most vital shipping lanes in the world. More than 17,000 ships per year pass through the Bab al-Mandeb and 42,000 through the Strait of Hormuz. "Coordinating with the various countries' navies to provide vessels in the right place at the right time is a rewarding mission," Conklin said. "I don't think very many people in the Army ever get experience in this – where you are standing up an international maritime task force, where you watch allies join, and you see the impact you're having."

Source: frnews.ng; 2 January 2020

US 2ND FLEET ACHIEVED FULL OPERATIONAL CAPABILITY

- Dylan Malyasov

Seven months after reaching initial operational capability (IOC), U.S. 2nd Fleet (C2F) achieved full operational capability (FOC) Dec. 31, 2019. Since its reestablishment in August 2018, Vice Adm. Andrew Lewis, C2F commander, has led the resurgence of the Navy's newest numbered Fleet, amidst a return to great power competition as outlined in the National Defense Strategy. "Within an increasingly complex global security environment, our allies and competitors alike are well aware that many of the world's most active shipping lanes lie within the North Atlantic," said Lewis. "Combined with the opening of waterways in the Arctic, this competitive space will only grow, and 2nd Fleet's devotion to the development and employment of capable forces will ensure that our nation is both present and ready to fight in the region if and when called upon." C2F, headquartered in Norfolk, Va., exercises operational authorities over assigned ships, aircraft and landing forces on the East Coast and the North Atlantic. The achievement of FOC signifies C2F has reached sufficient capacity to sustain command and control over assigned forces using the operational functions and processes of the Maritime Operations Center and Maritime Headquarters, in accordance with Navy Doctrine. C2F will primarily focus on forward operations and the employment of combat ready naval forces in the Atlantic and Arctic, and to a smaller extent, on force generation and the final training and certification of forces preparing for operations around the globe. "Our involvement in force generation is limited to the integrated phase – the final stages of the training cycle when our ships are operating at the high-end in aggregate," said Lewis. "This is an important distinction from the previous 2nd Fleet that disestablished in 2011 in that it aligns us with all other OCONUS numbered Fleets." In June, C2F led exercise Baltic Operations on behalf of Naval Forces Europe, marking it the first time the Fleet operated in the European theater since its reestablishment, leveraging increased lethality,

interoperability and integrated warfighting capability with regional allies and partners.

Building its expeditionary capability, C2F established a Maritime Operations Center (MOC) this past September in Keflavik, Iceland. This forward operating MOC, made up of approximately 30 members of C2F staff, possessed the ability to command and control forces, provide basic indicators and warnings for situational awareness, and issue orders while maintaining reach-back capability to C2F headquarters. Additionally, C2F has a trans-Atlantic outlook and understanding that it is intrinsically linked with allies and partners – both up towards the Arctic as well as across the Atlantic.

“We tirelessly work with our partner and NATO alliances to strengthen our deterrence and defense efforts throughout the Atlantic to improve upon our readiness and responsiveness,” said Lewis. “This critical relationship will continue to grow throughout the future, as we work together to ensure there is no seam in the Atlantic for our adversaries to exploit.” By focusing on strengthening our partnerships with our Allies in the Atlantic and high-end training and employment of assigned assets, the new C2F is now fully postured to support the employment of forces, whether that is on the western or eastern side of the Atlantic Ocean, or further north into the Arctic Ocean.

Source: defence-blog.com; 1 January 2020

SHIPPING, PORTS AND OCEAN ECONOMY

COASTAL SHIPPING ALONG INDIA'S EAST COAST GRINDING TO A HALT ON LACK OF VLSFO

-Sam Chambers

The IMO 2020 regulation has its first global trade scalp with news from south Asia where coastal shipping operations along India's eastern coast risk grinding to a halt later this week due to the scarcity of low sulphur fuel oil.

"There is virtually no supply of low sulphur fuel oil and all the coastal ships including the feeder container vessels plying between Indian ports on the east coast will come to a standstill from this week as soon as they exhaust whatever little stock they had," a top executive with a shipping company told the local Hindu BusinessLine today.

The looming fuel shortage was discussed in a tripartite meeting last week between government, refiners and owners.

India had repeatedly said last year it might not be in a position to comply with the global sulphur cap regulations, which started on January 1.

The situation on the west coast is better, the *Hindu Business Line* newspaper stated, due to the availability of the fuel in Kandla and Cochin for most coastal ships.

Splash is waiting for comment from a number of local feeder operators to confirm the fuel scarcity on the east coast.

Other nations have also hinted at a lack of available VLSFO in recent months, most notably the Philippines.

Source: [splash247.com](https://www.splash247.com); 13 January 2020

KEPPEL OFFSHORE & MARINE HARNESSING 3D PRINTING TECHNOLOGY FOR COMPONENT PRODUCTION

- Jason Jiang

Singapore's Keppel Offshore & Marine, in partnership with Nanyang Technological University and the Agency for Science, Technology and Research (A*STAR), and Singapore Institute of Manufacturing Technology (SIMTech), has been awarded Lloyd's Register (LR) Certification for its laser aided additive manufacturing system to produce offshore grade steel.

The certification conforms to the American Society of Testing and Materials (ASTM) A131 requirements following an audit and successful mechanical testing.

"This certification is the first step for us to produce high-value components essential to the offshore and marine structures. Additive manufacturing (AM) or 3D printing as it is more commonly known will speed up production times which in turn can help bring projects to completion much quicker," said Aziz Merchant, Executive Director, Keppel Marine & Deepwater Technology.

Singapore has been at the forefront in the adoption of 3D printing in the maritime sector. Last year, in a joint industry program initiated by Maritime and Port Authority of Singapore (MPA), class society DNV GL teamed up with ten member companies of the Singapore Shipping Association (SSA) to examine how spare parts produced by 3D printers can help the industry to cut costs and downtimes.

Source: splash247.com; 15 January 2020

DP WORLD'S DJIBOUTI BATTLE CONTINUES AT COURT IN LONDON

-Sam Chambers

DP World has won another legal hearing against the government of Djibouti over the Doraleh Container Terminal, having been kicked out of the country two years ago.

A tribunal of the London Court of International Arbitration has ordered Djibouti to restore the rights and benefits under the 2006 concession agreement to DP World and Doraleh Container Terminal within two months, or pay damages.

The latest tribunal ruling is the sixth ruling in DP World's favour in the London Court of International Arbitration and the High Court of England and Wales. To date all have

been ignored by Djibouti despite the original contract for the concession being written under and governed by English law.

DP World had had a concession in Djibouti since 2006. The government in Djibouti had tried to get DP World to renegotiate its contract towards the end of 2017. In February 2018 the government terminated DP World's contract and has since nationalised the Doraleh Container Terminal.

DP World has also kicked off legal proceedings against China Merchants who are involved in a rival terminal to Doraleh despite DP World's original contract stating it would be Djibouti's exclusive terminal.

Source: splash247.com; 15 January 2020

DIRECT SEA ROUTE THAILAND BANGLADESH UNDER FTA AGREEMENT

-Voytenko Mikhail

Free Trade Agreement between Thailand and Bangladesh is agreed in principle, by both side, during the 5th Joint Trade Committee (JTC) meeting between the two nations on Jan 8 2020 in Bangkok. Thailand is ready for Free Trade Agreement talks and required for FTA joint study on its' feasibility. Bangladesh is Thailand's third-largest trade partner in South Asia after India and Pakistan, with annual bilateral trade worth \$1.25 billion in 2018, down 4.4% from the

So far, Thailand is having a significant trade surplus, with exports to Bangladesh amounting to \$1.2 billion and imports worth just \$59.24 million. Thailand exports from Bangladesh cement, plastic pellets, chemical products, textiles, steel, tapioca products, air conditioners, cosmetics, and automobiles and parts; importing a small amount of garments, scientific and medical gear, fresh and frozen aquatic animals, and machinery and parts. Thailand's direct investment in Bangladesh totalled \$1.5 billion from 2006 to 2019, mainly in agriculture and processed agricultural industries, construction, and hotels and related services, while Bangladesh's investment in Thailand was worth \$1.12 million during the period.

All import/export goods are transported to/from Bangkok and Laem Chabang ports, via transit ports in Malaysia, mainly Port Klang, and Singapore, delivery time being some 7-12 days.

There is an alternative route, which excludes transit ports and transshipments, project being mulled over for quite some time. It's a direct route between Chittagong Port and Thailand's Port of Ranong in Andaman sea. Delivery time will be shortened to some 5

days. This project was also discussed during 5th Joint Trade Committee (JTC) meeting, and both sides agreed it has to be expedited.

This route of course, requires a feasibility study, and hopefully, it will take into consideration a very interesting option – it may attract shippers from other countries in the region, such as Vietnam or Philippines, or Cambodia. Of course transit cargo flows will require expansion of land bridge between Ranong port and ports of Gulf of Siam, and quite a number of other routes, already existing or projected, first of all routes, included into EASTERN ECONOMIC CORRIDOR (EEC) Project.

Source: fleetmon.com; 14 January 2020

ITALY'S HIGHEST COURT REJECTS CHARGES AGAINST RESCUE SHIP CAPTAIN

On Friday, Italy's Supreme Court of Cassation upheld the release of a German captain who defied official instructions and docked her ship at Lampedusa to offload rescued migrants. Capt. Carola Rackete, 31, allegedly collided with an Italian police vessel while docking, leading to her arrest. Prosecutors asserted that she intentionally rammed it, a charge which she denied.

"This is an important verdict for all sea rescue activists!" said Capt. Rackete in a statement. "No one should be prosecuted for aiding people in need. The EU directive on 'crimes of solidarity' needs reform."

On June 29, 2019, Rackete defied the instructions of Italian border authorities and entered the port of Lampedusa in order to disembark 40 survivors from a sea rescue. At the time, then-interior minister Matteo Salvini had effectively banned all disembarkation of African marine casualty survivors on Italian shores, including Africans arriving aboard dedicated rescue vessels, merchant ships, naval vessels and the cutters of the Guardia Costiera.

For her actions, Rackete's vessel was seized, and she was charged with resisting orders and "violence against warships." However, within days, a regional court ordered her release, finding that Capt. Rakete was "doing her duty saving human lives" as required by UNCLOS. The Court of Cassation, Italy's highest appellate court, upheld that decision Friday.

Salvini - who has since been ousted from his post by former political partners - may soon face trial himself. If an Italian Senate panel lifts his immunity for actions taken while he was minister, he will be prosecuted on kidnapping charges for preventing 131 migrants aboard the Italian Coast Guard vessel Gregoretti from coming ashore. The panel's vote is scheduled for Monday.

Source: maritime-executive.com; 17 January 2020

MARINE ENVIRONMENT

HOW DOES OCEAN ACIDIFICATION AFFECT REEF FISH?

- Nancy Bazilchuk

Several high-profile studies report that ocean acidification will affect coral reef fish behaviour enough to jeopardize their survival. One research team looked more deeply at this assertion - and found it is simply not true.

A three-year, comprehensive study of the effects of ocean acidification challenges previous reports that a more acidic ocean will negatively affect coral reef fish behaviour.

The study, conducted by an international coalition led by scientists from Australia and Norway, showed that coral reef fish exposed to CO₂ at levels expected by the end of the century did not change their activity levels or ability to avoid predators.

“Contrary to previous studies, we have demonstrated that end-of-century CO₂ levels have a negligible impact on the behaviour and sensory systems of coral reef fish,” said Timothy Clark, the lead author of the study and an associate professor at Deakin University in Australia.

Although this is good news on its own, ocean acidification and global warming remain a major problem for coral reefs, the researchers said. Ocean acidification is a problem for creatures that rely on calcium carbonate to make shells and skeletons, such as coral reef organisms, while higher ocean temperatures lead to coral bleaching and death.

CO₂ levels skyrocketing

One of the many jobs the ocean does for humankind is to soak up a percentage of carbon dioxide released from burning fossil fuels.

A study led by the US National Oceanic and Atmospheric Administration (NOAA) from March 2019 showed that the world’s oceans absorbed 34 billion metric tons of carbon from the burning of fossil fuels from 1994 to 2007—amounting to about 31 per cent of all carbon dioxide released to the atmosphere.

Researchers believe that by the end of the century, the oceans could absorb so much more CO₂ that carbon dioxide levels will be higher than what most marine species have experienced in the past 30 million years.

Nevertheless, because fish have regulatory systems that allow them to cope with changing water acidity, most fish physiologists assumed that they will be able to handle the increased acidity — until half-a-dozen highly publicized reports showed that fish, especially coral reef fish, were dramatically affected by increased CO₂ — to the point where they would swim towards predators, rather than away from them.

“The reports described effects across a range of life stages, including altered smell, hearing, vision, activity levels, boldness, anxiety and susceptibility to predation,” said Fredrik Jutfelt, an associate professor at the Norwegian University of Science and Technology and one of the authors on the paper.

However, the reports describing these negative effects also had substantial inconsistencies, even though the studies relied on similar methods to test for results.

So Clark and Jutfelt and their colleagues decided to see if they could replicate the results by conducting their own carefully documented research. But their results were exactly the opposite. They found normal behaviour in the species of fish they looked at.

“Unexpected scientific results always spark interest from other scientists, but before too much trust is placed in the findings, the effects need to be repeated by other research teams. This independent replication is an important part of science,” says Jutfelt.

He said the research team wanted to respond to the need, internationally, for issues of global importance to be studied in a way that other researchers can replicate results.

That’s why they designed their multi-year study to match the species, life stages and location and seasons of the earlier studies that showed such catastrophic effects, Jutfelt said.

The researchers were also very careful to document their experiments with videos, and also have made their raw data and analysis available so that other researchers could see exactly what they had done, said Josefin Sundin, the last author on the paper and a researcher at the Swedish University of Agricultural Sciences.

“As far as possible, we used automated tracking software to analyse the videos from our experiments, to minimize observer bias, and we also made our raw data and analysis code available to other researchers,” she said.

Their findings were consistent and clear — that coral reef fish behavior wasn’t changed by ocean acidification.

Although this finding may offer a small glimmer of hope for coral reef fishes, climate change continues to present an enormous and serious problem, the researchers said.

“While our new work suggests ocean acidification may not cause population declines because of behavioural disturbances in coral reef fishes, climate change is currently destroying the reef habitat through coral bleaching during heat waves,” Clark said. “So, despite our new results, coral reefs and their fish communities remain in grave danger because of increasing atmospheric CO₂.”

Source: maritime-executive.com; 8 January 2020

THE SOUTH CHINA SEA: PREVENTING THE TYRANNY OF THE COMMONS

- Dr. Asyura Salleh

The South China Sea is often viewed through the lens of territorial disputes and growing state competition. While the United States persists with freedom of navigation operations, China continues to develop artificial islands. Meanwhile, claimant states are becoming increasingly entangled in the heated major power tensions and face repeated incursions along maritime boundaries. Throughout these disputes, the region’s fishery resources have fallen victim to the ongoing tyranny of these shared commons. If the rapidly depleting fishery stocks in the South China Sea continue to remain underaddressed, this fishery crisis will have tremendous consequences to the stability of the Indo-Pacific.

Fishery stocks in the South China Sea are necessary to satisfy global food demand. Around 12 percent of the global fish catch comes from the South China Sea, which also hosts more than half of the world’s fishing vessels. However, these fishery resources are being exploited at a harrowing rate. It is reported that the fish stocks in the South China Sea are now only 5 percent of what they once were in the 1950s. In just the past two decades, fish stocks have fallen by 66 to 75 percent.

Unfortunately, the habitat needed to revive these fishery resources is also being eradicated. Coral reefs, which provide safety and plankton for fish to feed on, have shrunk by 16 percent in the last 10 years. Due to poor practices that harm the marine environment, including giant clam harvesting, dredging, and artificial island building, over 160 square kilometers of coral reefs have been destroyed in the South China Sea. The state of fisheries is entering a vicious cycle in which illegal, unreported, and unregulated (IUU) fishing practices catalyze the rate of depleting fishing resources while removing the very vehicle needed to guarantee fishery survival.

The main drivers behind the fishing crisis in the Indo-Pacific are political and governance factors found in coastal states. Weak license regulations, low levels of maritime enforcement, and the inequitable distribution of economic resources to fishing communities are some factors fueling this crisis. Without enough income or access to welfare services, the fishing community is pushed to resort to IUU fishing

practices such as overfishing to secure more profit. Meanwhile, the poor management of fishery resources further perpetrates this crisis.

If left under-addressed, the fishery crisis in the Indo-Pacific will produce wider repercussions that can undermine regional stability in various ways. Despite originating long before the South China Sea became a contentious zone, the fishing crisis has been strongly associated with the region's territorial disputes. Claimant states seeking to assert control over contested exclusive economic zones (EEZ) are resorting to fishing nationalism tactics such as exploiting fishery resources in these zones or apprehending foreign fishing boats.

However, applying such sovereign-based approaches when managing fishery resources is detrimental to the sustainability of these resources. Fish are by nature migratory and fluid and do not abide by territorial delimitations. While they may spawn in one nation's EEZ, they move to another zone during their juvenile stage, and end their lives in another nation's EEZ. Imposing aggressive state-driven IUU fishing practices in a particular zone would prevent fish from migrating to another zone, thus diminishing the region's entire fishery stock. By continuing to associate the fishery crisis with the territorial disputes, the region's maritime law enforcement agencies will be inclined to import similar norms when handling the region's fishery crisis. Although these norms seek to uphold national interests, they also jeopardize the sustainability of shared regional resources.

IUU fishing also threatens regional stability by facilitating other transnational crimes. As a crime in itself, IUU fishing contributes to a global loss of up to \$45 billion every year. However, due to declining fish stocks in the South China Sea, fishing communities are now forced to seek income through alternative avenues that also rely on a fishing boat and a crew familiar with the region's waterways. Drug trafficking, people smuggling, sex trafficking, and illicit trades are other types of crime that are increasingly taking place in the maritime domain. Consequently, waterways such as the Andaman Sea are emerging as dangerous maritime routes used to carry out criminal activity such as illegal migration and drug trafficking.

Several scientific studies have highlighted how IUU fishing damages marine habitat and exploits fishery resources in the South China Sea. However, not enough of this research has translated into policy-relevant knowledge that can be used to influence the agenda-setting processes that take place in regional forums. Consequently, most policy implementation efforts are not evidence-based and so cannot effectively protect fishery resources. The detrimental security, political, and economic implications of IUU fishing need to be better broadcasted across all stakeholder groups in the Indo Pacific.

Unlike territorial disputes, IUU fishing can only be tackled through a whole-of-society approach that includes law enforcement agencies, civil society organizations, and fishing communities. Such a research-driven and inclusive approach will eradicate IUU fishing practices and in doing so preserve fishery resources for the next

generation. By taking a whole-of-society approach and relying on tools that are readily available in the region, fishery resources in the Indo Pacific will no longer be under the tyranny of the shared commons but will instead be transformed into a shared benefit for all.

Source: thediplomat.com; 4 January 2020

SHIPPING FUEL REGULATION TO CUT SULPHUR LEVELS COMES INTO FORCE

Sulphur will be cut drastically from global shipping transport fuels in 2020, in a move that should reduce some forms of air pollution, and may help towards tackling the climate emergency – but which could also lead to a rise in the price of flights.

From 1 January 2020, ships will only be allowed to use fuel oil with a very low sulphur content, under rules brought in by the International Maritime Organisation. This cut in sulphur content has been more than a decade in the planning, and almost all shipping around the world is expected to comply, or face penalties.

“Member states, the shipping industry and fuel oil suppliers have been working for the past three years to prepare for this major change – I am confident that the benefits will soon be felt and that implementation will be smooth,” said Kitack Lim, the secretary general of the IMO. “This [is a] hugely important change which will have significant positive benefits for human health and the environment.”

The new regulations are aimed at cleaning up sulphur emissions, which can cause acid rain and other forms of air pollution, rather than tackling the climate emergency. However, the dirty forms of fuel that contain high levels of sulphur are usually higher carbon too, and the costs of cleaning up sulphur may spur shipping companies to become more efficient in their fuel use, which would cut greenhouse gas emissions directly.

Moving to cleaner fuels could add substantially to costs, from an estimated \$400 (£303) a tonne for fuel oil today to as much as \$600 a tonne, according to the International Chamber of Shipping. Higher shipping costs may be absorbed throughout the manufacturing and transport supply chains.

The cost impact may also spread beyond shipping, according to the energy analyst firm Wood Mackenzie. “Knock-on effects from the cap on sulphur emissions in marine bunker fuel could even wind up giving you a more expensive plane ticket in 2020,” the company said.

The IMO estimates that the new limit – of 0.5% sulphur content compared with the previous limit of 3.5%, enforced under the international convention for the prevention of pollution from ships – will cut sulphur oxide emissions from ships by 77%, an annual reduction of about 8.5m tonnes.

Fuel oil for shipping has long been one of the dirtiest forms of fossil fuel, made up of the sort of low-value and cheap crude oil that is unsuitable or expensive to refine into high-grade products such as petrol for cars, or kerosene for planes. Ship engines have been designed to cope with such low-grade fuel, and the emissions they belch out as a result mostly happen far from land, making the accompanying pollution less visible and, for many decades, largely ignored by governments.

But the damaging effects of the pollution have grown as globalisation has led to a massive increase in shipping transport. Shipping consumed about 3.8m tonnes of fuel oil a day in 2017, according to Wood Mackenzie, equivalent to half of global fuel oil demand. Carbon from shipping makes up about 3% of global total carbon emissions, but is expected to rise to 17% by mid-century. Fuel oil with a high sulphur content produces sulphur oxides, which can cause acid rain and particulate pollution.

Alternatives to low-grade, high-sulphur fuel oil are increasingly available, albeit at a higher price. Liquefied natural gas is still a fossil fuel, but much cleaner, and infrastructure allowing its use is becoming more widespread. Biofuels are also being explored as an alternative – one enterprising cruise company is using fish guts for its fuel – and there are high hopes for harnessing hydrogen fuels in the form of ammonia for ship engines.

Vessels can also be fitted with “scrubbers” to remove sulphur, though some of this is then released into the sea as effluent. Ports have also become increasingly concerned at the pollutants from cargo and passenger ships, and some operate zones where sulphur content is even more drastically reduced.

Shipping is subject to complex international regulation, overseen by the IMO, the London-based UN body. However, for historic reasons, it has been excluded from calculations of international greenhouse gas emissions, and thus exempted from governments’ obligations under UN climate agreements, including the landmark Paris accord of 2015.

That has meant shipping companies have felt less pressure to cut carbon, and progress on all forms of shipping pollution has been slow and often tortuous. The new sulphur regulations were first enacted by the IMO in 2008, after years of debate, but had to be re-confirmed in 2016 before finally coming into force on Wednesday.

Climate change campaigners want to see much faster adoption of regulations to cut greenhouse gas emissions from shipping. The next major public meeting will be an IMO conference in London in late March and early April, where countries will come

under pressure to lay out a clear plan on cutting carbon from the sector, ahead of a major UN climate conference in Glasgow in November.

The IMO has a long term aim to halve carbon from shipping by 2050, but few concrete plans to achieve it. An increasing number of countries, including the UK, are aiming for net zero carbon emissions by 2050, in line with scientific warnings on the urgency of the climate emergency.

The ICS has also proposed a \$2 a tonne levy on shipping fuels that would pay into a fund for research and development on zero-carbon forms of shipping, which will be explained to member states at the spring IMO conference, but could take years to come into force.

Source: [theguardian.com](https://www.theguardian.com); 1 January 2020

SUEZ CANAL AUTHORITY BANS SCRUBBER WASH WATER DISCHARGE

The Suez Canal Authority has advised shipowners that discharging wash water from open-loop scrubbers during transit in the waterway is strictly forbidden

Based on the latest circular, the authority said that it “puts no conditions or restrictions on fuel oil or open-loop exhaust gas cleaning systems until the ratification of MARPOL Annex VI by the Arab Republic of Egypt.”

However, in a clarification of the circular, the canal authority explained that despite the lack of restrictions on fuel oil and/or open-loop scrubber until the ratification of the regulation, whenever that may be, discharge of the wash water from scrubbers shall not be permitted during vessel transit.

The announcement was confirmed by the Exhaust Gas Cleaning Systems Association (EGCSA) which has sought advice from Gulf Agency Company in Egypt on the matter.

This basically means that vessels can continue to burn and carry heavy fuel oil in the country’s waters, including the Suez Canal. Furthermore, the ships equipped with open-loop scrubbers can continue to use their systems in Egyptian waters but should switch them off when transiting the canal.

Separately, the canal authority said that transit tolls will remain unchanged for all types of vessels, except dry bulk vessels and LPG carriers, which will see their transit tolls increase by 5%. The increase is scheduled to take effect as of April 2020.

The Suez Canal is a major lifeline for the global seaborne trade, through which 8.3% of the total global trade traffic passes, including approximately 25% of the total traffic

of containerized cargoes, and 100% of the seaborne container trade between Asia and Europe.

In 2019, the canal accommodated 18,880 vessels, the equivalent of 1.2 billion tons of cargo accommodated through the waterway, reflecting an increase of 5.9% year-on-year.

The canal's revenues increased from USD 5.7 billion in 2018 to USD 5.8 billion in 2019, up by 1.3%.

Source: worldmaritimenews.com; 15 January 2020

SUPPORT FOR MAJOR RESHAPE OF MARPOL ANNEX IV

-Wei chein

Disinfecting raw sewage is ineffective and harmful. The comminuting and disinfecting systems are a disservice to the IMO's aspirations. In the light of Norway's constructive proposal to reshape the IMO's sewage rules, let bygones be bygones.

The joint paper below supports the call for a major reshaping of MARPOL Annex IV and its Guidelines.

Sewage Comminuting and Disinfecting Systems - A Disservice to MARPOL Annex IV

The IMO's MARPOL Annex IV regulations permit three ways of discharging ship's sewage into the sea; 1) via an approved sewage treatment plant, 2) via an approved comminuting and disinfecting system at a distance of more than three nautical miles from the nearest land, or 3) at a distance of more than 12 nautical miles from the nearest land under certain operational conditions.

A comminuting and disinfecting system, as its name suggests, combines the maceration and disinfection processes. It is a rudimentary device which neither separates/produces sewage sludge nor removes residual disinfectant. This is because it is not subject to any numeric discharge limits or test procedures, rendering its approval by the Administration a meaningless burden.

The regulations for the provision of comminuting and disinfecting systems date back to the 1970s. Since then, scientific and engineering advances have been achieved in wastewater processing, and environmental rules and regulations are similarly being advanced.

First of all, disinfecting raw sewage is not effective. Sewage should be adequately treated prior to disinfection in order for any disinfectant to be effective [1,2,3,4,5]. In addition, disinfectants have been found to react with organic compounds and produce

toxic residuals and mutagenic or carcinogenic compounds, known as disinfection by-products (DBPs) [6,7,8,9,10]. The higher the organic concentrations, the greater the level of DBPs being produced [11].

This means disinfecting raw sewage is not only ineffective, but it also risks doing more harm than good. Over the past decade, the IMO has introduced stringent residual disinfectant limits and total residual oxidant (TRO) limits to environmental technologies such as sewage treatment plants and ballast water treatment systems. These developments have rendered a comminuting and chlorinating system out of date, and its regulation inconsistent with environmental rule-making in the 21st century.

However, being out of date is only part of the problem. More importantly, it weakens the sewage treatment plant - the IMO's remaining treatment option intended for those technologies designed and tested to meet stringent discharge standards.

For many years, devices resembling features of a comminuting and disinfecting system have been approved as sewage treatment plants. With no sludge and no de-chlorination, these devices performed tricks that are scientifically impossible. The credibility of the IMO's approval regime has been eroded by approving and certifying these 'magic boxes' as sewage treatment plants. Such rudimentary sewage treatment plants, popular in certain marine sectors, have widened the gap between rules and realities. The provision of comminuting and chlorinating systems has served as a breeding ground for these 'magic boxes.'

In summary, comminuting and chlorinating systems have clearly done a disservice to the aspirations of MARPOL Annex IV. Thanks to Norway's initiative, we now have an opportunity to give due consideration to the regulation propping up these devices 'as to whether this regulation is still necessary' (PPR 7/16), now that a new decade has begun.

Source: maritime-executive.com; 12 January 2020

GEOPOLITICS

IRAN TENSIONS MAY PROMPT S. KOREA TO RETHINK US LED PATROLS

- William Gallo

The escalating U.S.-Iran conflict is complicating South Korea's possible participation in a U.S.-led maritime coalition to protect international shipping in and near the Strait of Hormuz. There are increasing calls in South Korea for the government to reject, or at least rethink, U.S. requests to join the force, amid fears South Koreans could get caught up in the violence. The conflict escalated Wednesday, with Iran launching what it called "tens" of ballistic missiles toward at least two Iraqi military bases that house U.S. and international forces.

Iranian officials said the attack was in retaliation for the U.S. killing of top Iranian general Qassem Soleimani in a drone strike outside the Baghdad airport last week. The situation is delicate for South Korea, a key U.S. ally that also views Iran as an important potential trading partner.

'Situation totally changed'

"The pressure from the United States (to participate in the maritime force) is going to be higher, but now the situation has totally changed," says Jang Ji-Hyang, a Middle East specialist at Seoul's Asan Institute for Policy Studies. It could become a volatile domestic political issue, just months before South Korea's parliamentary election, if South Korean troops were to become targets overseas, Jang says, "If the government decides to send our soldiers, South Korea could be mired in a war between Iran and the United States," said an editorial in South Korea's conservative JoongAng Daily. "Iran is not our enemy and can emerge as a huge market once economic sanctions are lifted."

The liberal Hankyoreh newspaper also noted that the violence is causing South Korea to "rethink" its contribution to the maritime force. The U.S.-South Korea alliance has already been strained by U.S. President Donald Trump's demand that Seoul pay substantially more for the cost of the U.S. military presence in South Korea. Although U.S. negotiators have reportedly dropped their insistence that Seoul increase their contribution by five times, the two sides failed to reach a deal before the current cost-sharing deal expired at the end of the year. Another round of talks is expected as early

as next week. There were reports that South Korean participation in the maritime force could factor into the cost-sharing negotiations.

No decision yet

In an interview Tuesday, Harry Harris, the U.S. ambassador to South Korea, said he hopes Seoul will contribute to the maritime force, noting that South Korea imports "so much" of its energy from the Middle East. South Korea's defense and foreign ministry officials said this week no decision has been made on sending troops to the region, but vowed to assist international efforts to reduce tensions. Following an emergency meeting Monday, South Korea's National Security Council expressed the "deepest concern" over the tension and reviewed the possible impact on South Korean citizens, businesses, and ships in the region.

Around 1,600 South Koreans are in Iraq, mostly working on construction projects, according to South Korea's foreign ministry. Nearly 300 South Koreans live in Iran. South Korea and Iran have tried to maintain economic ties, though the relationship has been impacted by Trump's more aggressive approach toward Tehran. South Korea, which relies on foreign energy imports, had been one of the top buyers of Iranian oil, but halted those imports in 2019 when its waivers from U.S. sanctions on Tehran expired.

Maritime force

As U.S.-Iran tensions escalate, oil prices have surged. There are concerns Iran may attempt to disrupt international oil flow in the Strait of Hormuz, a narrow waterway that serves as a crucial chokepoint for global oil supplies. The strait was the focus of U.S.-Iran tensions last year, when six oil tankers and a U.S. drone were attacked in the area. The U.S. blamed Iran for the attacks - a claim denied by Tehran.

The U.S. has attempted to form a broad international military coalition to help protect merchant ships in the strait. South Korea has for months said it is considering participating. Reports say Seoul could extend the scope of an existing anti-piracy unit operating off the coast of Somalia, possibly to include the Strait of Hormuz. The unit includes a 4,500-ton destroyer, an anti-submarine helicopter, and three speed boats. It may be difficult for South Korea to reject U.S. requests to join the mission, in part because of South Korea's close military relationship with the U.S. and its past commitments to international peacekeeping missions, say analysts.

South Korea hosts over 28,000 U.S. troops. South Korean soldiers fought alongside U.S. soldiers in Vietnam. South Korea also sent non-combat military personnel to help with U.S.-led missions in Iraq and Afghanistan, though Seoul's Afghan operations were scaled back after the Taliban kidnapped a South Korean church group in Afghanistan, murdering two of its members. "It will be tough not to participate," says Lee Jae-Seung, a professor at Korea University who has written about international

energy policy. "However, this can also create a hostile relationship with certain countries, so the government needs to be careful."

Source: [voanews.com](https://www.voanews.com); 09 January 2020

SAFE-HAVEN CURRENCIES PULL BACK AS GEOPOLITICAL TENSIONS EASE

The Japanese yen and Swiss franc pulled back from recent highs on Tuesday as investors became less anxious about the chances of an all-out conflict between the United States and Iran. The yen fell from a three-month high versus the dollar, although sentiment remains fragile due to continued worries about armed conflict between the U.S. and Iran. A drone strike in Baghdad on Friday ordered by U.S. President Donald Trump killed Iranian military commander Qassem Soleimani, widely seen as Iran's second most powerful figure behind Supreme Leader Ayatollah Ali Khamenei.

The Swiss franc, another go-to currency when investors are nervous, fell from four-month highs against the euro and dropped versus the dollar. Equity markets, which weakened heavily on Monday, rebounded in early trading. "Since no further bad news from the Middle East followed, markets have calmed down somewhat and panic moves like in the USD or the JPY have been corrected," Commerzbank analyst said.

The yen was last at 108.33 yen per dollar, some way from its high on Monday of 107.77. The Swiss franc weakened 0.2 per cent versus the dollar to \$0.9696 and stood at 1.0839 francs per euro, unchanged on the day. The dollar, which fell on Monday, rose 0.2 per cent against the euro to \$1.1176. The U.S. currency, the world's most liquid, is often bought in times of market flux, but its performance has been mixed in recent sessions - slightly better-than-expected euro zone business survey data on Monday supported the euro. Against a basket of currencies the dollar index firmed 0.1 per cent to 96.772.

"Sentiment clearly favours risk-off trades, but dollar/yen is not falling much because Japanese importers are buying," said Yukio Ishizuki, strategist at Daiwa Securities in Tokyo. "Excluding this real demand, the dollar is weak against other currencies. This reflects the situation in the Mid-East, but we need to see what happens next."

Aside from geopolitical tensions, the focus for currencies in European hours is December euro zone flash inflation data, due at 1000 GMT. U.S. trade balance data, factory orders, and numbers from the services sector are also due later. Elsewhere, sterling slipped 0.2 per cent to \$1.3144 ahead of the UK parliament returning following the Christmas recess.

The onshore yuan rose to a five-month high of 6.9522 per dollar in another sign that traders are ready to put aside concerns about a more significant confrontation between Tehran and Washington. The offshore yuan gained 0.4 per cent to 6.9393 yuan per dollar, its highest since Dec. 13. The U.S. and China are expected to sign a preliminary deal on Jan. 15 to de-escalate a prolonged trade war.

Source: economictimes.indiatimes.com; 07 January 2020

INDONESIA UNVEILS NEW MILITARY DRONE AS FEUD OVER SOUTH CHINA SEA INCURSIONS ESCALATES

- Joe Cochrane

In normal times, the unveiling of a missile-capable military drone by Indonesia's main domestic weapons producer would not raise many eyebrows. But the fact that the roll-out of a prototype of its MALE unmanned aerial vehicle, or UAV, came on the same day that Jakarta filed a diplomatic protest with Beijing caused a stir, even if unintentionally. Indonesia last week protested to Beijing over alleged illegal fishing and the presence of China's coastguard in its maritime exclusive economic zone off its Natuna Islands last month.

On Sunday, the Indonesian military said Chinese vessels remain in the area, despite the diplomatic protest. *The Jakarta Post* reported that the vessels, accompanied by Chinese coastguard vessels, were seen catching fish about 200km from Natuna. Two Indonesian warships were deployed to drive them out of the area, but Chinese officials reportedly said the ships were performing "routine" activities to assert China's rights in the nearby Spratly Islands.

On Monday, an official said Indonesia was "not at war" with China, but would not tolerate border violations by any country. "A foreign country can't enter our territory even an inch without the government's approval," the coordinating minister for political, legal and security affairs, Mohammad Mahfud, told reporters, "We are not at war, we are simply protecting our sovereignty. But there's no negotiation because the area is ours and it's final under international law," he said.

Indonesia's foreign ministry and lawmakers began going on the offensive last week, resurrecting the ghosts of a series of maritime skirmishes with China in 2016 when there was a tense period of aggressive behaviour by Beijing in asserting its sovereignty over the vast majority of the South China Sea at the expense

of its Southeast Asian neighbours. One of the 2016 incidents involved a Chinese coastguard vessel ramming a seized Chinese fishing boat to free it from the Indonesian government boat that was towing it. “Between 2016 and now, there were some small-scale incidents. I think it’s fair to say this one’s an escalation compared to the last few years,” said Evan A. Laksmana, a senior researcher specialising in military affairs at the Centre for Strategic and International Studies in Jakarta. Laksmana said that while the roll-out of the Indonesian drone prototype by weapons producer PT Dirgantara Indonesia was not a response to the latest incident as it had been scheduled for weeks, “it’s really hard not to see a power projection when you see fishing vessels being escorted by the Chinese coastguard. We’ve been sending diplomatic protests, we’ve called in ambassadors, so there is a lot of push by Indonesia’s maritime agencies to push the foreign ministry to take a harder line”.

Two prototypes of the MALE UAV will undergo extensive testing throughout 2020. According to officials at Dirgantara, the final product will be weapons-capable, including having the ability to carry air-to-ground missiles, and can remain operational for more than 24 straight hours. Officials said the UAV’s uses would include tracking forest fires, smuggling and piracy – but also noted that the drone would be part of efforts to protect Indonesia’s territorial sovereignty. Despite being one of its biggest investors and trading partners, Jakarta is wary of Beijing’s efforts to assert control over waters within Indonesia’s exclusive economic zone that have oil and natural gas reserves as well as fish stocks. For decades, Indonesia’s official policy had been that it is not a party to any territorial disputes with China in the South China Sea, unlike its regional neighbours Brunei, Malaysia, the Philippines and Vietnam. Last month, Malaysia submitted a notice to the United Nations declaring its sovereignty over maritime territory claimed by China.

After the third skirmish with Indonesia in 2016, China’s Ministry of Foreign Affairs claimed for the first time that its controversial “nine-dash line” included “traditional fishing grounds” within Indonesia’s exclusive economic zone. Jakarta responded by stationing additional military personnel to the islands and renamed the waters off it as the North Natuna Sea, to reinforce its claim. Things mostly quieted down – at least publicly – until this latest incident, believed to have taken place sometime in mid-to-late December. Indonesia has since announced increased naval patrols in the area, likely to deflect domestic political pressure after grumblings from lawmakers. In a December 2016 report, Aaron Connelly, a senior researcher and South China Sea expert with the Lowy Institute in Sydney, noted that Indonesian President Joko Widodo had moved from a strategy of peace “to one primarily focused on protecting its own interests around the Natuna Islands while not antagonising China”, in particular given Beijing’s infrastructure investments across Indonesia.

More than three years later, that uncertain strategy remains in play. “I don’t think much has changed,” said Connelly, now a research fellow with the International Institute of Strategic Studies in Singapore. So what can Indonesia do? Not much, according to analysts. Zachary Abuza, a professor at the National War College in

Washington, DC, said Indonesia “has always had an appalling lack of maritime domain awareness” and continues to search for land-based solutions to maritime security threats, given the dominance of the country’s army throughout the decades. “The normal Indonesian response to incursions around Natuna is to deploy more troops to the island, or land-based Apache helicopters which will rust out fairly quickly in a maritime environment,” he said. “Indonesia desperately needs to resource its navy and coastguard, which after years, seems to finally be standing up.”

Yohanes Sulaiman, an Indonesian military analyst and university lecturer, questioned why Indonesia would even tout a domestic aerial drone given that its military was keen on buying Chinese-made CH-4 Rainbow drones from China. “We are years away from making ours operational. The US version is very expensive, and the Americans don’t give bribes or kickbacks. And the Chinese were selling it cheaply to them,” he said. Regarding the Indonesian version, he said: “So what kind of engine is it, what’s inside of it? The most important thing is the technology.” Asked if he thought Indonesia could produce a weapons-capable UAV to protect its territory in the South China Sea, Sulaiman said: “I’ll take it with a grain of salt.”

Source: scmp.com; 6 January 2020

KIILLING OF TOP IRANIAN GENERAL MAY RAISE RISK FOR MIDEAST SHIPPING

Forces with U.S. Joint Special Operations Command (JSOC) have killed Maj. Gen. Qasem Soleimani, a leading Iranian political figure and the head of the Islamic Revolutionary Guard Corps' Quds Force, a U.S.-designated terrorist organization. A JSOC-operated drone destroyed a convoy carrying Soleimani and several Iranian-backed militia leaders as they departed Baghdad International Airport early on Friday morning, killing the general and nine others.

According to the Trump administration, the strike was intended to head off Iranian-backed actions against American citizens. The Pentagon said Friday that Soleimani “was actively developing plans to attack American diplomats and service members in Iraq and throughout the region.”

In addition, the Pentagon accused Soleimani of approving violent protests at the American embassy in Baghdad. On December 27, a rocket strike from an Iranian-backed militia killed an American civilian contractor and injured several U.S. servicemembers at the K1 military base near Kirkuk. The U.S. military conducted retaliatory airstrikes on the militia positions responsible for the rockets; these retaliatory airstrikes prompted violent protests by Iranian militia members at the U.S. embassy in Baghdad. U.S. intelligence agencies believe that Soleimani was involved in authorizing the embassy protests.

Soleimani ran Iran's covert operations activity in the Middle East for two decades, including foreign-influence operations in Syria, Iraq and Yemen. Most of the activity his force has directed - like Iran's support for anti-Israeli militant group Hezbollah, its backing for the Syrian government of Bashar al-Assad, and its support for the rebel Houthi movement in Yemen - ran counter to American interests. He has been a U.S.-designated terrorist leader since 2011 and is believed to be responsible for the deaths of hundreds of American soldiers. Soleimani was also top figure in Iranian foreign policy and political circles, and he was personally close to supreme leader Ayatollah Ali Khamenei. Some U.S. analysts believe that given Soleimani's position, the attack is effectively a declaration of war - a view shared by Iran's ambassador to the United Nations, Majid Takht Ravanchi. "Last night, they started a military war by assassinating, by an act of terror, one of our top generals," said Ravanchi in an interview on CNN Friday. "We cannot just remain silent. We have to act and we will act."

In a statement Friday, Ayatollah Khamenei vowed a "forceful revenge" on the "criminals who have [Soleimani's] blood and the blood of the other martyrs last night on their hands." The form that this "revenge" may take is not yet known. Brig. Gen. Esmail Ghaani, appointed Friday to replace Soleimani as head of the Quds Force, suggested that it would be extreme. "Everyone should be patient a little to see the bodies of American soldiers all over the Middle East," he said, according to Al Jazeera. The Department of State has advised all U.S. citizens to depart Iraq as soon as possible, and the Pentagon is deploying about 4,000 troops from the 82nd Airborne Division's Global Response Force to Kuwait as a precautionary measure.

According to USNI News, the administration has also diverted the amphib USS *Bataan* and the 26th Marine Expeditionary Unit (MEU) from a prescheduled exercise off Morocco to redeploy to the Middle East. The 26th MEU's ground combat element includes about 1,200 Marines and sailors, backed by embarked air combat and logistics elements.

Implications for regional and maritime security

Security consultancy Dryad Global suggested that Iran is likely to take a more moderate course than its rhetoric suggests - at most hitting soft targets. "It is . . . a realistic possibility that Iran could repeat its attacks Saudi oil facilities, as was observed in the attack on an oil processing facility in Abqaiq," Dryad wrote. "Attacks on Saudi oil infrastructure are a highly effective method of targeting US interests within the region, without directly targeting US personnel. Reports have also suggested that the IRGC has 'threatened' US bases in the Middle East. Whilst less likely, this remains a possibility."

In recent standoffs with Saudi Arabia and the UK, Iran has also targeted unprotected merchant shipping in the Gulf of Oman and Strait of Hormuz, and comparable attacks are possible. "Dryad assess that the [existing] high threat to vessels within the region

remains primarily focused on US and Saudi-flagged vessels. Dryad further assesses that there is an additional threat to vessels carrying US cargos or assets or are seen to be linked to US economic interests," the consultancy wrote. "Marshall Islands-flagged vessels, for example, which come under US protection as a US associated state, are also at a heightened risk. There is a latent but similarly high risk to vessels belonging to states that support [U.S. Operation Sentinel]."

Any disruption to shipping in the region could have implications for the oil markets; Brent crude futures rose by 3.5 percent Friday after the attack. "Tehran's reprisal, whenever it occurs, may threaten global oil supplies, including in the Strait of Hormuz, through which around 20 percent of global oil supplies pass daily," cautioned Elizabeth Rosenberg, director of energy and economics at the Center for a New American Security. "Oil prices have already spiked on this threat in early trading today. The market is still sensitive to the constraint on supply from the Iranian attack on Saudi Aramco facilities in September."

Source: maritime-executive.com ; 06 January 2020

INDIA, AUSTRALIA TALKS TO FOCUS ON INDO-PACIFIC, QUAD, AND MARITIME SECURITY

- Huma Siddiqui

In view of China's growing reach in the Indian Ocean, leaders of India and Australia later this month will discuss maritime security and freedom of navigation in the Indo-Pacific region. Australian Prime Minister Scott Morrison slated to visit India later this month at the invitation of Prime Minister Narendra Modi will focus on the expansion of military ties, and also deepening of economic relations with India. The Australian Prime Minister will be accompanied by a high-level official and business delegation, indicating the importance of relations between the two countries. Morrison will be delivering the inaugural address at the Raisina Dialogue 2020 in New Delhi, which is an annual conference on geopolitics and geo-economics. The conference is hosted by the Observer Research Foundation (ORF) in collaboration with the Ministry of External Affairs. This year it is from January 14 to 16 in New Delhi,

At the end of bilateral level talks, the two sides are expected to ink Mutual Logistics Support Agreement which will help in interoperability and enable military platforms to receive support and supplies across bases in both nations. At the 2+2 Secretary Level Dialogue last year both sides had discussed the Mutual Logistics Support Agreement in New Delhi and deeper military ties between the two countries. For India, Australia is a key partner in its Indo-Pacific strategy and for Australia the Indo-

Pacific is of strategic importance. This will be on the agenda for talks between the two sides as well as dialogue on Quad which involves countries including India, Japan, US and Australia. Australia is targeting India as one of the top export destination as well as looking at India as a strategic partnership. In a report authored by Ambassador Anil Wadhwa and Former Secretary (East), for deepening the India-Australia Economic Relations, new ten sectors have been identified including space technology, medical and water technologies, mining, resources, education and manufacturing. Though the two sides have been negotiating a bilateral comprehensive economic partnership agreement (CECA) since 2011, there has not been much progress due to concerns on both sides.

“Since India has pulled out from the Regional Comprehensive Economic Partnership Agreement (RCEP) recently, most likely the CECA talks between India and Australia will be back on track,” explained a senior officer.

Raisina Dialogue

This year's conference is going to be big as compared to previous years as there will be a huge presence of speakers from across the globe including ministers from countries including Australia, Germany, Vietnam, the Maldives, the US, Canada, Japan, the UK, Iran, New Zealand, South Africa and Sweden, as well as Dr Vivek Lall, Vice President for Strategy and Business Development, Lockheed Martin Aeronautics. Country's first CDS Gen Bipin Rawat, foreign secretary Vijay Gokhale, external affairs S Jaishankar and Shashi Tharoor, Member Parliament are among the speakers from India. On the sidelines for the three-day Dialogue where the theme this year is 'Navigating the Alpha Century', Jaishankar is expected to have discussions with his counterparts from other countries.

Source: financialexpress.com ; 01 January 2020

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