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Our goal is to raise awareness of our seas and to rekindle maritime consciousness and pride.

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Editorial

The much debated IMO 2020 which aims to control Sulphur Oxide (Sox) emission from ships, comes into force on 1 January 2020. From then onwards vessels will only be allowed to use fuel with a maximum sulphur content of 0.5 percent (against the present limit of 3.5%). This is a landmark decision and a welcome one, for the protection of the environment and human health.

The switchover to Low Sulphur Fuel may result in the rise of nearly 50 % in the cost of fuel oil. While the major ship owners and operators will be able to absorb the cost, smaller operators, particularly Indian coastal shipping companies will find it hard to cope with this additional burden. The World Maritime Day 2019 will be celebrated on 26 September 2019. The theme this year will be "Empowering women in the maritime community". The objective will be to promote gender equality in the maritime community and highlighting the important role of women in a sector that has been dominated by men traditionally,

As ever, this year's theme will be promoted within the framework of IMO's core mandate; to advance safe, secure, environmentally sound, efficient and sustainable shipping.

The STCW Convention is due to come up for a revision in the near future. IMF has taken the initiative to send a proposal to the Govt of India for revision of two key articles of the STCW Convention. A committee headed by Capt Sudhir Subhedar has been formed to prepare a draft of the proposal. It will be called STCW Revision Committee.

D-Day the 6th of June finds a mention in the 'Letter from London' by Mr Paul Ridgway and also in the 'Letter to Editor' by Mrs Pamela Gueritz. Mrs Gueritz's husband the late Rear Admiral Teddy Gueritz was a member of the British force in the Normandy landing and played a crucial role as the Beach Master at Sword Beach. He was a personal friend of IMF President Cmde Rajan Vir and was closely associated with the IMF. The article 'D-Day and Sword Beach' which acknowledges Admiral Gueritz's heroic role on the Sword Beach is based on the inputs by Cmde Vir.

Cmde Srikant Kesnur has written a fine article 'A Poignant Slice of History' about HMS *Affray* which sank in 1951. The article has an interesting postscript with a note from Cmde Vir who was closely associated with Lt Blackburn during his training with the Royal Navy.

We take this opportunity to welcome the new Council members Capt Sudhir Subhedar and Mr Gopi Shetty.

NOTICE BOARD

- 28 Aug 19 Pre - Seminar Dinner, Panchratna Hotel , Pune
- 29 Aug 19 IMF's Annul Seminar on " Advances in Naval Aviation over the Preceding Decade, their Impact on Naval Operations and Future Trends," FOCINC, WNC is the Chief Guest. Central Park Hotel, Pune.
- 21 Sep 19 International Coastal Cleanup (ICC - 2019, Coordinated by IMF-All India).
- 10 Nov 19 Remembrance Day, Wreath Laying Ceremony at Seamen's War Memorial, Bund Garden, Pune
- 17 Nov 19 Junior SIMA Painting Exhibition, "On the Spot Seascape Painting Competition" and Maritime Quiz. Empress Garden , Pune.
- 05 Jan 20. IMF's 26th Anniversary Lecture and Dinner, Central Park Hotel, Pune.

Letters to Editor

Congratulations and Good Wishes to IMF

Sir,

(To Cmde Rajan Vir, President IMF). The “Seagull” has been sent to Mike, your Term mate, since its inception all those years ago. Since he passed away six years ago it is I who read it from cover to cover and then give it to friends. I am very grateful to you. I find it most interesting and it increases my knowledge of Indian matters and of other countries on your side of the world.

This issue, No 97, tells me that you have stepped down from being President of the IMF. I should like to congratulate you and your colleagues for what you have achieved in the last 25 years. It seems immeasurable. I am only sorry that Mike isn't here to acknowledge your achievement.

There are happy memories of our visit to Pune and your visits with Gita to England.

With my sincere regards and good wishes,

*Judy Barrow
Petersfield, Hampshire,
England*

Editor's Note : Capt Mike Barrow, DSO, MVO, RN was IMF's Hon. Representative in England from 1994 to 2013. He made significant contributions towards developing interaction and networking between the IMF and many maritime organizations in England. He died in 2013.

D-Day and Sword Beach

Sir,

Thank you so much for the May edition of Seagull received with the greatest pleasure. I had put it aside initially until I was able to give it the concentration which it deserved as all was at 'sixes and sevens' in this country in one way and another at the time. There has been much drama in Westminster as you must have noticed from the press!

I enjoyed spending time reading Admiral Prakash's talk concerning India's Role in the Dynamic Indo-Pacific Scenario which was very impressive and made me brush up my geography. I was also delighted that he gave you a good eulogy! I hope to have more to enjoy further reading.

The other June distraction was, of course, D-Day. It was well covered by the Press and I wonder whether you had reports of it. Seems a long time ago now and I rather did wish Teddy was alive to hear about Sword Beach and get the recognition as a Veteran which he deserved. At any rate I enjoyed the feeling of pride! Of all places I was in India and then Sri Lanka at that time .

Pamela Gueritz, Salisbury, England

INS Vikrant

India's first Indigenous Aircraft Carrier, INS *Vikrant*, is expected to be delivered to the Indian Navy by 2021. The *Vikrant* is in an advanced stage of outfitting at Kochi Shipyard Limited. The Harbour Acceptance trials are in progress and Sea Acceptance trials are expected to commence later in the year. Her main dimensions are: Length 262 metres. Breadth 60 metres. Displacement about 40,000 metric tons. It features a Short Take-Off But Arrested Recovery (STOBAR) configuration with a ski-jump.

The ship is expected to carry an air group of up to thirty aircraft, which will include up to 24–26 fixed-wing combat aircraft, primarily the MiG-29K, besides 10 Kamov Ka-31 or Westland Sea King helicopters.

Dr John Large, Nuclear Scientist



Dr John Large

Dr John Large, who has died aged 75, was a British independent nuclear scientist who was called in to lead a nuclear safety committee consulting on the raising of the *Kursk*, the Russian nuclear submarine which went down in the Barents Sea on August 12, 2000 with the loss of all 118 officers and crew.



The Kursk

Large was awarded a medal by the Russians for helping to raise the submarine. In Britain, however, his criticism of the government over its nuclear waste policy led some elements of Whitehall to regard him as an infernal nuisance.

Following the sinking of the *Kursk*, Russia initially refused all help from foreign experts, and

four days after the accident the Russian Navy's Commander-in-Chief stated that it had been caused by a collision with a NATO submarine – a story which continued to do the rounds for more than two years after the disaster.

Eventually, however, the Russians accepted that they needed foreign help to salvage the vessel, which, in addition to the bodies of its crew, contained several torpedoes, two 220 megawatt nuclear reactors and 22 nuclear-capable cruise missiles.

In April 2001 the Dutch salvage consortium, Smit and Mammoet, was awarded the contract and, for insurance purposes, insisted that a nuclear coordinating group of four consultants under Large be appointed to advise on radioactive safety. “The Russians were very open with me,” Large said, “but then they had to be.”

The disaster, occurred after the test-firing of a top-secret torpedo went catastrophically wrong, and it jammed in the tube. The torpedo then exploded when hydrogen peroxide, used to reduce friction around the missile's nose, reacted with fuel propellant, turning the forward compartment into an inferno.

From on-site research, evidence passed to him by the Russians and conversations with the vice commander of the Russian Northern Fleet, Large soon ruled out the collision theory. The disaster, he concluded, occurred after the test-firing of a top-secret torpedo went catastrophically wrong, and it jammed in the tube. The torpedo then exploded in a “schoolboy chemical reaction” when hydrogen peroxide, used to reduce friction around the missile's nose, reacted with fuel propellant, turning the forward compartment into an inferno.

The panic-stricken crew then spent two desperate minutes trying to control the resulting blaze



The *Kursk*, at a floating dock in Murmansk following its retrieval from the seabed Credit: Reuters/Itar/Tass

before a second devastating explosion sealed the sub's fate. Another seven torpedoes blew up, blasting a massive hole in the pressurised hull. "When I saw the damage I could not believe it," Large told an interviewer. "There was a hole you could drive a bus through." His findings were supported by evidence from the British government's seismic monitoring station at Blacknest, Berkshire.

On October 8 2001, from the salvage team's control room in Rotterdam, Large oversaw the raising of the *Kursk* in a 15-hour operation from the sea bed to a giant barge for transport to a dry dock. "I am afraid this tragedy shows many things," he said. "The first lesson is do not fire an experimental torpedo from a fully armed submarine. Another is that there are serious problems with Russian submarine design."

However, he added, the Russians were lucky the accident occurred in relatively shallow water: "Another 200 metres and the boat would still be lying on the bottom with nuclear reactors prone to corrosion."

In Britain, Large did consultancy work with Greenpeace, Friends of the Earth, local authorities and government departments, and advised Tony Blair on nuclear matters when he was shadow energy spokesman in the 1980s. But he also took up cases on behalf of local communities against government departments – such as radiation exposure affecting former nuclear submarine workers in Chatham, Kent – and was a constant critic of official plans to deal with nuclear accidents, and the disposal of nuclear waste.

When in 2000, *Tireless*, a Trafalgar class nuclear submarine based at Faslane, limped into Gibraltar after radioactive coolant seeped from her reactor, Large was one of three experts called in to monitor the year-long repairs, which had sparked furious protests on the Rock and a political row between Spain and Britain.

John Henry Large was born on May 4 1943 and brought up in the East End of London.

After taking a degree in Engineering at Imperial College, London, Large moved to the US at the age of 21 to work on the country's nuclear weapons programme, taking American citizenship. When he found that he was at risk of being conscripted to fight in Vietnam, however, he crossed the border to Canada and returned to Britain, where he was made a research assistant at Brunel University in 1968; he was promoted to lecturer in 1971 and remained on the staff until 1986.

At Brunel he undertook research for the UK Atomic Energy Authority, much of which remains classified, though he was believed to have been involved in the design of Britain's fleet of advanced gas-cooled reactors and worked for a time at Windscale (now Sellafield).

In 1986 he founded Large & Associates, a consultancy specialising in problems with engineering systems, particularly in the nuclear field.

His readiness to tell people what they did not want to hear extended to anti-nuclear activists as much as to government departments. When Greenpeace campaigners collected sand from a public beach near the Sizewell B reactor in Suffolk and expressed alarm over the levels of radiation they found, Large replied "That's nothing," and pulled out some pieces of rock he had in his pocket. The Geiger counter went off the scale, but his point was made: there are safe levels of radiation.

John Large passed away on 02 November 2018.

Courtesy: The Daily Telegraph (London) > Obituary 7 Dec 2018

A Poignant Slice of History

By
Cmde Srikant Kesnur



HMS *Affray*

Author's Note. This article was first circulated on whatsapp by me for sharing with some friends and acquaintances. I have retained the flow and language of the same to retain the authenticity of the format.

Yesterday, one of the twitter handles that I follow “On this day RN” had put the accompanying tweet about **HMS *Affray***, a Royal Navy submarine, which had sunk this day, 16 Apr in 1951, off Alderney, in the English Channel. *Affray* – the name struck a bell somewhere. Apart from the incongruity of naming a submarine after what implies 'disorderly conduct' there was something I remembered reading about it long time ago. There was some, maybe little, Indian connection to it. But what was it?

Mr Google did not yield much (I admit my search was not a detailed one) and Indian Navy's official histories of that period did not say much either. Then, I turned to my collection of 'Quarterdeck' the classy and information filled annual journal that the Navy publishes every year. I went through many of them and was almost giving up, wondering if I had imagined something when voila I hit upon what I had been seeking.

My dog eared personal copy of QD 1991 had an article by the (late) Rear Admiral KR (Jerry) Nair called 'The *Affray* Affair'. Jerry Nair, a Naval Officer of great eminence, a regular QD contributor, supposedly a great raconteur of stories (I never had the good fortune of meeting him) retired as the first FOC-in-C Eastern Naval Command. An ASW (Anti-Submarine Warfare) specialist he was heading the ASW School at

Kochi (dual hatting as Executive Officer of INS Venduruthy our naval base there) when HMS *Affray* docked at Kochi in the end of 1946. She was there for practical sea training classes for the trainees in ASW School. Considering that the *Affray* had been commissioned only a year earlier, in Nov 1945, she was a brand new submarine.

In Jerry's words 'the *Affray* had a spirited crew with incredible penchant for getting into scrapes'. Thus, much of his time went in managing situations dealing with 'good order and naval discipline'. The *Affray* departed few weeks later with her last A/S exercise at sea with HMIS *Kukri*. To quote from the article “In response to an effusive thank you signal from *Affray*, *Kukri* gave a pithy reply 'Au Revoir and Good Luck. We are no longer *Affrayed*'”.

RAdm Nair seems to have some small aspects incorrect thereafter. He indicates that *Affray* sank a few days later, on the last leg of her voyage back to Portsmouth and his article is a tribute to the young men on the submarine who he may have dealt with. However, the submarine sank four years later in 1951 after departing from Portsmouth. (She did not surface after diving for an exercise). Thus, it is unlikely that it was the same crew unless of course, it was not 1946 but more likely 1950 that the submarine docked in Kochi. But a cursory look at the submarine history indicates that it may not have been probable. Also, the prefix HMIS before *Kukri* in the article clearly indicates that *Affray* was in India before Jan 1950.

RAdm Nair also indicates that the brass name plate on her conning tower was a gift from Base Repair Organisation (BRO) Kochi. This is interesting and fascinating because the wreck of *Affray* indeed was identified as such by the divers and underwater cameras based on the nameplate on the conning tower. It may well have been the same one as that made in Kochi since name plates, especially brass ones, are unlikely to be replaced frequently. But one can never be too sure.



Crew of HMS Affray. Lieutenant John Blackburn (far right) was in command and died in the disaster

Either way, HMS *Affray* is a poignant entry in history as the last Royal Navy submarine that went down at sea. HMIS *Kukri*, the River class frigate of Indian Navy was renamed INS *Kukri* on 26 Jan 50 and subsequently was converted to a survey ship and renamed INS *Investigator*. However, the next ship with that name INS *Khukri* (note the added H in the name), a type 14 Blackwood class frigate, went down in the 1971 war sunk by torpedoes fired by the PNS *Hangor* and marks another poignant entry in maritime history. In a similarity of sorts, both *Affray* and *Khukri* went down close to the coasts of their home countries, a constant reminder to their countrymen of the perils that obtain at sea.

Times (and Tides) change and technology marches forth ushering developments that one had not dreamt of. While it is unlikely that there may be another *Affray*, new ships bearing the same names *Khukri*, *Investigator* etc now prowl the seas. Yet, this poignant slice of history, whether of *Affray* or *Khukri*, illustrates that military service especially in a tough environment will always be risky. Military seafaring will come with its own professional hazards. And this is the price we pay for liberty.

Affray's Indian connection may remain a very small footnote, but in a way it illustrates the fascinating twists and turns of history and of links and bonds that we sometimes cannot conceive. Perhaps ASW School, INS Venduruthy and NSRY Kochi (the new incarnation of BRO) can research more.

In the Navy we lack regimental histories but QD fills the vacuum admirably. Successive editions taken together make a valuable historical repository. It is times like this that make lugging old books and journals and magazines through all transfers worthwhile. Meanwhile let us spare a thought for whom the sea was their only grave.

Post Script

After I circulated the article above I got many responses. I am reproducing one of them for the readers of Seagull.

Cmde Rajan Vir, the founding father of IMF wrote to say 'Dear Srikant, Many thanks for the heart warming story of the submarine Affray. I have a personal connection with it. Her commanding officer, Lt Blackburn on that ill-fated dive in 1951 was my training officer on the HMS Devonshire, the training cruiser, in 1950.

He was also my Divisional officer of the Foxle Division on board. As a midshipman on board the carrier HMS Glory the following year in 1951, I was devastated with grief when I heard the news of the lost Affray. I am sure all who had served with Lt Blackburn, especially his cadets, were heart broken. Lt Blackburn was a fine, very upright officer, from among the best, I recall.

There were many war decorated training officers handpicked by RN on board the Devonshire'. RIP!

Cmde Srikant Kesnur is presently Director Maritime Warfare Centre Mumbai and O.I.C. Naval History project.

Plastic bag and Candy wrappers in the Mariana Trench



Plastic waste in the Mariana Trench

In a series of five separate trips into the Mariana Trench, Victor Vescovo, a private equity investor, former naval officer and now the record-holder for deepest manned submarine dive, joined a narrow list of explorers to visit the vast underwater chasm.

The dive beats a previous record set by 'Titanic' Director James Cameron in 2012 by a little more than 50 feet according to explorers.

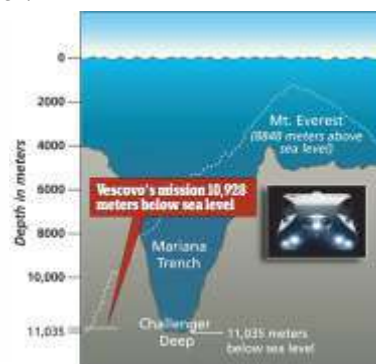
While his journey recorded a number of phenomena, including three new species of marine life, and the deepest piece of recovered mantle rock, according to the BBC, Vescovo also turned up some more unwelcome visitors of the ocean deep: a plastic bag and a candy wrapper.

When considering the depth of the Pacific Ocean's Mariana Trench, which extends for nearly 7 miles into the ocean floor, Vescovo's discoveries might seem implausible - but according to recent research, the scourge of plastic waste has reached even the deepest waters.

In a study released last year, researchers noted that a plastic waste is the most prevalent type of debris to wade into the deep sea, with about 89 percent of the recorded trash being single-use plastics like water bottles, groceries bags, or a disposable utensil.

Though it was once believed that the ocean floor was devoid of sea life, researchers have come to understand that deep-sea debris like the specimens observed by Vescovo endanger a surprising array of organisms call chasms like the Mariana Trench home.

In researchers' analysis of deep sea debris, they noted that organisms were observed in about 20 percent of images taken involving plastic, including some showing the entanglement of garbage and chemosynthetic organisms like tube worms that live next to geothermic vents on the ocean floor.



In fact, recent discoveries have shown the incidence of plastics in the deep-sea are so common that some organisms are starting to use microplastics as food.

In February, a group of British scientists -- one of which joined Vescovo on one of his journeys to the Mariana Trench -- reported that tiny shrimp-like creatures called amphipods were commonly found to have microplastics in their digestive tracks.



The scourge of plastic waster on the ocean floor

Specimens found in six of the deepest points from ocean's throughout the world, 80 percent of the creatures were found to have plastic in their bodies.

Courtesy: Daily Mail



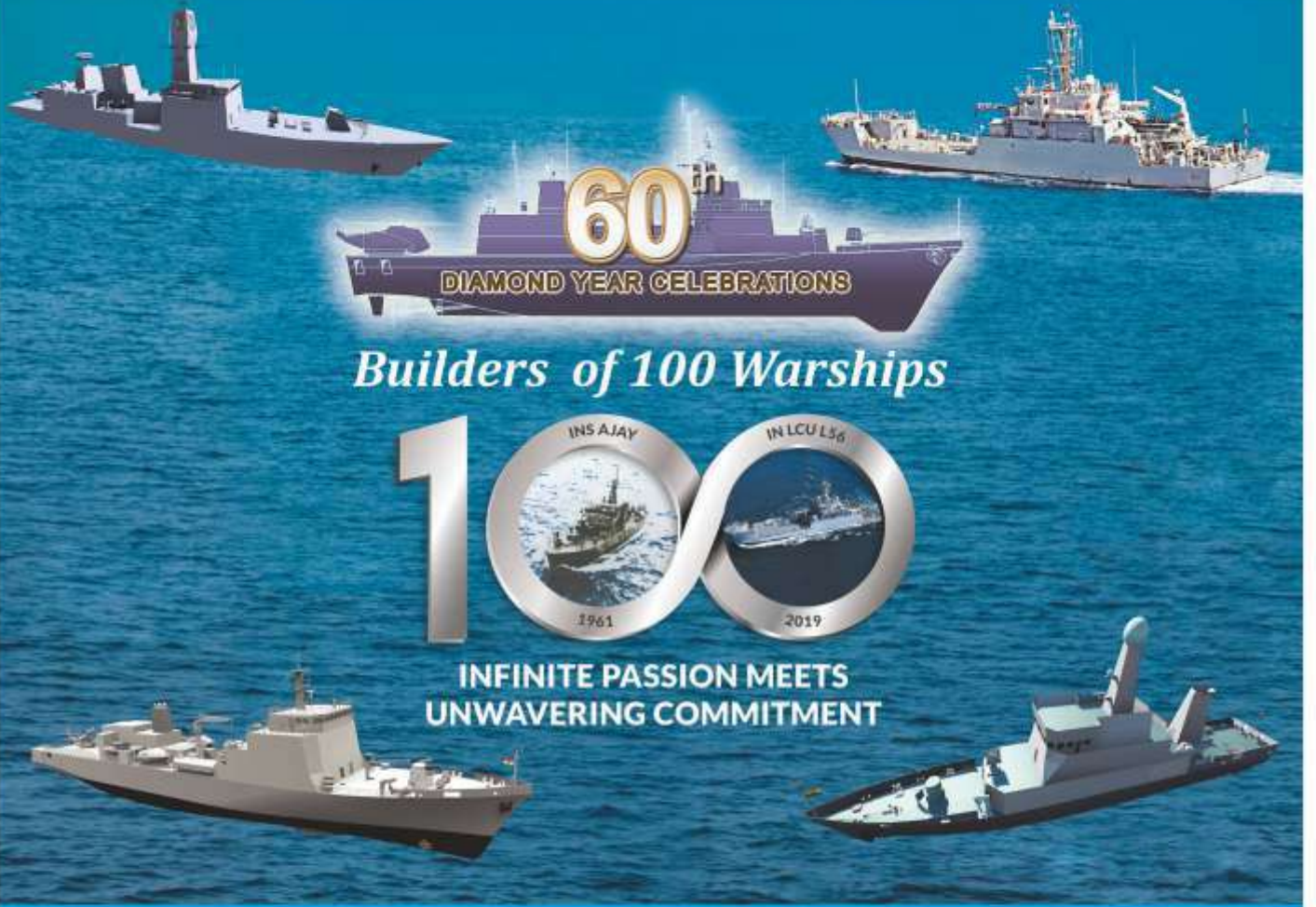
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The Third Pillar of the Indian Nuclear Triad – INS *Arihant*

By Capt SA Kanetkar, IN (Retd)

An absorbing and highly informative talk on **Indian Nuclear Triad – INS *Arihant***, was delivered by Lt Gen AL Chavan, PVSM, AVSM, SM, VSM (Retd), at an IMF organised function, at the Boat Club, Pune, on the 06 June 2019.

The event was compered by Capt Rabi Mishra. Cmde Rajan Vir, President IMF, in his welcome address welcomed Gen Chavan and apprised the audience of the General's illustrious military service.

The General's talk was an eye opener and contained interesting information unknown to most present. The talk was attended by dignitaries, guests and IMF members. Among the notable dignitaries who attended were- Air Marshal Soman, Vice Adm DSP Verma, Lt Gen Bandopadhyay, Mr Praful Talera, Mr Munawar Peerbhoy, Rear Adm SS Godbole and Cmde N Kapur. The General made it clear that all information contained in his talk was 'open source' information.

Gen Chavan, began by quoting the Prime Minister's message to the nation on the successful completion of *Arihant's* first operational deterrence patrol. The PM said, "India's nuclear triad will be an important pillar of global peace and stability and INS *Arihant* will

be the harbinger of fearlessness for the Country. In an era such as this, a credible nuclear deterrence is the need of the hour. The success of INS *Arihant* gives a befitting response to those who indulge in Nuclear Blackmail”.

Completing the Triad is important for maintaining global peace and security, as a credible nuclear deterrence, and its sea-arm provides an immense measure of undetectability, unpredictability and an element of surprise. Our maritime doctrine structures the deterrence based on two aspects. One is indestructibility and the second is undetectability, which is why the entry of *Arihant* assumes great importance in our quest to complete the triad. In fact, Adm Chatterjee, was the first to propound the need of a nuclear powered submarine, as a strategic asset, way back in the end 1960s. It was only in 1978, that this need was given serious thought, and discussions with the Soviet Union were initiated. This resulted in the first nuclear powered submarine, being leased from the Soviets, in the mid '80s. By 1977, BARC had already commenced work on a submarine nuclear reactor, which was a sign that some concrete thoughts were being made in this direction. By 1988, the ATV project was given the go-ahead, to construct an indigenous nuclear powered submarine. The seeds of *Arihant* were thus sown.

The design effort for an indigenous equipment fit - steam generators, turbines, gearboxes, turbo generators, pumps etc commenced in 1988, and the first set of indigenous prototype equipment were successfully tested at Kalpakkam by 1997. *Arihant's* keel was laid in 2003, and she was launched in 2009. Her reactor went critical in 2013, and she was commissioned in 2017.

Soon after the PM's message, on the completion of India's Triad, reactions came in from the world over. India's recent successes in its foreign policy initiatives can be gauged by the positive



Cmde R Vir presents a memento to Gen Chavan



Gen Chavan with Cmde Rajan Vir and guests

appreciations received. The US Defence Intelligence Agency, for example, stated that, “New Delhi seeks status as a global power and perceives its strategic forces as necessary elements to achieve that goal. India has put its first domestically built nuclear submarine, the INS *Arihant*, into service, and is set to take delivery of its second nuclear submarine, the INS *Arighat*.”

‘Nuclear Deterrence’ and ‘No First Use’ are both indicative of the fact that the delivery system (missile) and the warhead are not paired. They are handled by the respective authorities, i.e, the *Strategic Forces Command* (for the missile) and the DRDO (for the war-head). Only in the eventuality of actual use, are the two paired; till then they remain ‘recessed.’ The ‘pairing’, must be ordered by the *National Command Authority*, with the PM as its head. All nuclear weapon platforms whether on land, air or sea will come under the operational directive of the Strategic Forces Command. A ship, or aircraft for example will only be an enabling platform for carrying the nuclear asset, and not have any functional control, over the nuclear asset. The same goes with land based nuclear assets. The SSBN, is therefore, an esoteric eco-system of its own.

Having understood the gamut of deployment and ‘No First Use’, it is now easy to understand why ‘tactical nuclear weapons’ (as intimated by our immediate neighbour) is nuclear blackmail, irresponsible and immature behaviour. This is only a ploy to force or deny India the space for a conventional war.

In the case of land and air assets, concealment, movement and indestructibility cannot be as secretive or assured, as is in a nuclear submarine. The cost of movement and maintenance of land and air nuclear assets is enormous as compared to having them at sea, which is why, nuclear powers generally deploy over 60% of their nuclear assets on submarines. If ‘first use’, is part of a nuclear doctrine, then the weapons are mated, and consequently, the carrying cost to the nation will be huge.

So how many nuclear ballistic submarines should be operational at any one time? Gen Chavan, discussed this issue with strategic experts, and came to the conclusion that a minimum of two (one each off the eastern and western sea boards), and possibly a third in the Indian ocean area should be available at all times. Considering short



Gen Chavan with members of the audience

and long maintenance requirements, the logical figure should be a minimum of five to six nuclear submarines in our inventory.

Vergheese Kotihara, the strategic expert, has summarised our situation very aptly, when he said that “India's great advantage in its quest for sea-based deterrence is that it will not have to—unlike Russia and China—confront the ASW



capabilities of the US. This confers on India an inestimable strategic benefit, which is accentuated by the fact that China cannot expect to develop any ASW capability of consequence in the Indian Ocean in the face of the US's global maritime dominance, and India's growing maritime capability. India has untrammelled access to deep ocean from its long peninsular coasts, unlike Russia and China, whose ports are hemmed in by the maritime forces of the US and its allies.”

So what capability do we expect of our nuclear submarines and the SSBNs? The accompanying tabulation shows the capabilities of some of the nuclear submarines in service.

Arihant is about 112 m long with a beam of 11 m, and displacement of about 6,000 tonnes. The boat is powered by a single, seven blade propeller which gets its 83 MW power from a pressurised water reactor, to achieve a maximum speed of 12–15 knots on surface, and 24 knots, when

submerged. The submarine has four launch tubes in the hump and can carry up to twelve K-15 missiles with one warhead each with a range of about 750 km or four K-4 missiles, with a range of 3,500 km. The third and fourth submarines are expected to have a larger configuration, carrying twenty-four K-15 or eight K-4 missiles. The optimum situation will be to have all missiles with MIRVs, and a range of 5000 km.

It took India about 20 years from initial design to launching its first nuclear submarine, which is well within that achieved by US/Russia. The subsequent outfitting has taken much longer, which needs to be pruned down for subsequent vessels, to around a year. To be able to accommodate 12 to 15 SLBMs (with MIRV), the future boats will need to be around 18,000 tonnes and have with a beam of 13 m.

Consequently, the reactor power must be increased for these larger vessels. The undetectability factor, the noise levels of *Arihant* are very good and close to the Akula II class. This is one area, where the boat surpasses the performance of its Chinese and western counterparts.

The complex subject was presented by Gen Chavan in an easy and lucid manner, so that even the laypersons in the audience did not feel left out. The talk was followed by the Question and Answer session which elicited a good number of questions from the audience. The General answered all questions patiently.

On conclusion of Q&A session Cmde Rajan Vir presented a memento to Gen Chavan on behalf of the IMF. The programme ended with a Vote of Thanks by Capt AC Dixit.

Capt Sunand Kanetkar is a Council Member of IMF.

Competition for Naval Dominance in the Indian Ocean Region

India and China are fast emerging as major powers of the Indo-Pacific. As their wealth, power and interests expand, they are increasingly coming into contact with each other, including in the maritime domain. How these countries get along could be one of the key strategic challenges for the Indo-Pacific in the 21st century.

The security relationship between India and China is complex. They have many unresolved issues between them. Not least is China's growing presence in South Asia and elsewhere in the Indian Ocean region (IOR).

For its part, New Delhi perceives China to be shaping the strategic environment and forming alignments that could be used against India. This shows some big differences in how India and China understand their status and roles in the region.

China's Strategic Imperatives

China's growing interests in the IOR likely will drive ever-greater military presence in coming years. China's most important interest is the protection of its trading routes over which energy is carried from the Middle East and Africa. Beijing is keenly aware that these sea lines are vulnerable to threats from state and non state adversaries, especially at the narrow chokepoints of the Strait of Hormuz and the Malacca Strait.

Some argue that China suffers from strategic "blind spots" in understanding the perspectives of its neighbours, particularly with India.

China, however has many other interests in the IOR, which may well end up becoming even more important drivers of China's growing military presence. These include the need to provide security for Chinese people and investments in unstable countries and having the

capability to evacuate Chinese nationals in response to local crises. Other interests include the need to support United Nations peacekeeping operations, conducting humanitarian aid and disaster relief /search and rescue operations and, potentially, the desire to conduct interventions against violent extremists or to support local partners. In addition, the Chinese government is increasingly subject to domestic political pressures that may force it to respond to an event when it may not have otherwise done.

All these factors are leading China to develop a military presence in the IOR. This began with a semi permanent naval presence in the region are primarily focused on peacetime military operations, but this will likely evolve over time toward greater sea denial and even sea control capabilities.

China's growing relationships with countries in the region are generally not perceived in New Delhi as being a legitimate reflection of Chinese interests, but as being directed against India, to encircle it or keep it off balance.

Much of the public focus has been on the Chinese navy, which is moving to a two-ocean strategy that incorporates the Indian Ocean as normal part of the China's military reach. Furthermore, the presence of Chinese land force in the region is likely to grow including the People's Liberation Army's Marine Corps, which is now being expanded to 100,000 troops. As it did in Africa, Beijing may also rely heavily on Chinese private security contractors for local security tasks.

China's growing military presence will require expanded basing in the region, which likely includes naval and air bases in Pakistan and probably elsewhere in the IOR, such as East Africa and the eastern Indian Ocean.



The nature of many of China's relationships in the IOR is changing, including the developing semi-military alliances, building dual-use port facilities for possible use by the Chinese navy, and increasing Chinese arms transfers into the region.

India's Response to China

China's growing presence in the IOR is provoking a sharp reaction from India. India has long harboured ambitions to be recognized as a leading power with special security responsibilities in the region. Many in New

Delhi consider India the natural leader of the Indian Ocean, at least in the long term.

India's colonial history has led to a strong-aversion to the presence of other major powers in the IOR. In the 1970s and 1980s, these concerns were directed at the U.S Navy, but they are now very much directed at China.

India's ambitions in the Indian Ocean are not just defensive. They also reflect broader aspirations to be acknowledged as a major regional power, and potentially a great power that sits at the world's top table.

The Sino-Indian dynamic in the Indian Ocean is just one part of a multifaceted relationship that combines elements of cooperation, coexistence and competition. China's presence in South Asia and the broader IOR is viewed with suspicion and anxiety.

India's strategy of building its naval capabilities near Indian Ocean choke points involves an implicit threat of blocking China's trading routes. Beijing is concerned that, in the event of a conflict between the two states on their shared border, India might escalate the conflict to the Indian Ocean.

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India's claims to a special regional security role and its views on the legitimacy of China's presence create fertile conditions for competition between the two countries. This is exacerbated by another factor: India's desire to maintain China's strategic vulnerability in the Indian Ocean.

In most dimensions of the strategic relationship between the two countries-including nuclear weapons, the conventional military balance in the Himalayas or economic power-India is at a disadvantage. The geography of the Indian Ocean, however, is the one area in which India holds a clear military advantage over China.

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For this reasons, China's projection of naval power into the India Ocean has become the Indian Navy's principal long-term source of concern and is now an important driver of India's

growing security relationship with the United States and others. India sees the need to work with Washington and others, such as Japan, Australia and France, to balance or delay the growth of China's presence in the Indian Ocean. India is actively building its own network of regional security relationship and basing facilities across the Indian Ocean, including with partners, such as Oman and Indonesia.

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Chinese Perspectives on the India's Role

Beijing takes quite a different view from New Delhi on the legitimacy of China's presence in the IOR. For a start, many Chinese strategists believe that India lacks comprehensive national power and tend to give it a status below other powers such as Russia or Japan.

This may sometimes make China less respectful toward India compared with other powers. There us also a pronounced asymmetry in threat perceptions: India tends to regard China as a significant threat, whereas China is much more focused on the United States.

Beijing also strongly resists any suggestion that India has a right to restrict China's relationships in the IOR or that India should be recognized as having a sphere of influence in the region. China takes the view that it is free to enter relationship as it chooses with India's neighbours, such as Pakistan, Sri Lanka and Nepal.

These differences in perceptions mean that Beijing pays little heed to Indian sensitivities about China's relationships in the region. For example, China's growing military and economic links with Pakistan are brushed off as unimportant because they are "not directed at India." None of this is of any reassurance to India.



Indian Navy Commandos during an exercise

Some argue that China suffers from strategic "blind spots" in understanding the perspectives of its neighbours, particularly with India. Strong

Chinese beliefs about their country's history may make it difficult for Chinese to put themselves in their neighbour's shoes and reassure them about China's growing power. These beliefs may also tend to make China dismissive of Indian fears.

This negative dynamic is exacerbated by China's approach toward its One Belt, One Road (OBOR) policy in which China is building a series of infrastructure projects throughout the IOR, many of them in India's immediate neighbourhood. Beijing claims these initiatives are purely economic and takes the position that it does not require India as a partner in the region. Beijing believes that it need not explain its regional initiatives to India nor ask for India's cooperation.

This approach has only fuelled Indian suspicions about the OBOR. There is currently little indication that India is interested in buying into the OBOR in any significant way. Overall, there seems to be little chance that India will be a willing partner with China in the IOR and much more likely that it will oppose many Chinese initiatives.

What does this mean for the region?

Competition between India and China is becoming an increasing factor in regional political dynamics in South Asian countries such as Pakistan, Sri Lanka and Bangladesh as well as several island states in the Indian Ocean, such as the Maldives.

Some countries are trying to capitalize on competition to extract economic, political and military benefits from one or both sides by playing them off against each other to attract more investment in major infrastructure projects. While this can lead to benefits, for small countries it is also a potentially dangerous game to play.

Competition between China and India can lead to political instability. Over the past few years, controversies over major Chinese infrastructure projects have contributed to changes in government in Burma and Sri Lanka. There will likely be more jostling for influence throughout the region in coming years. The political crisis that occurred in the Maldives in early 2018, when its President Abdulla Yameen defied a Supreme Court ruling to prisoners, was exacerbated by Sino-Indian competition, and this is continuing to play out.

Overall, it seems likely that strategic competition will lead to the greater militarization of the IOR, because India feels the need to respond to China's moves. While the United States has been the unchallenged predominant power in the IOR for several decades, this is changing. We are seeing the rise of major powers such as India and China, as well as a host of several new middle powers. This will make the India Ocean a much more multipolar and complex strategic environment. This will require the United States to work with new partners and in new ways.

Courtesy: INDO-PACIFIC DEFENSE FORUM

Memories of *Samrat Ashok*

By
Capt AC Dixit



***Samrat Ashok* a bulk carrier of 1,29,513 DWT owned by the Shipping Corporation of India (SCI) was the largest bulk carrier in the world when she was built in 1974. After losing that place of honour about a year later, she continued to be the largest ship in the Indian Merchant fleet for many years.**

But here is a piece of information of interest to the Indian Maritime Foundation - by a curious coincidence three of IMF's council members commanded that ship in direct succession; they were-

Capt Anand Dixit - from March 1976 to May 1977

Capt Rabi Mishra- from May 1977 to Aug 1978

Capt Sujit Choudhuri- from Aug 1978 to Aug 1979

About the ship

Samrat Ashok had a strong Japanese connection. Built by Mitsubishi Shipyard (MHI Hiroshima), financed by Mitsubishi Bank and time-chartered by Sanko Line of Tokyo, the Japanese regarded her as one of their own. For the first few years she even had Sanko funnel markings.

She was launched and commissioned under the name *Gautama Buddha* but subsequently

renamed *Samrat Ashok*.

Her main dimensions were: Length 261m, Beam 40.7m, Max draught 17.61m. Service speed 16 knots – not bad for a bulk carrier!

As one of the Cadet Training ships of SCI, she had 16 cadets on board and only a skeleton deck crew. The cadets performed all the tasks required for the ship's operation normally performed by the crew, kept bridge watches at sea with the Officer-on-Watch and performed the various activities laid down in the Company's training programme.

Voyage schedules were extremely tight and demanding. The ship had to be run at peak efficiency to avoid the ignominy of going 'off-hire'.

I joined the ship in March 1976 at Europort Rotterdam and took over command from Capt Kavarana, a senior Master in the company. After completing discharge at Rotterdam and Dunkirk, the ship sailed for Sept Isles (Canada) in the Gulf of Saint Lawrence with orders to load iron ore for Japan. This voyage had all the elements of a good sea tale - the Atlantic crossing in dense fog, encountering ice bergs off Newfoundland and navigation through ice concentration of 6/10 in the Gulf of St Lawrence.

The ship's stay at Sept Isles was less than 24 hours, but long enough for the ship's crew to make a hazardous journey on slippery ice to the dock cafeteria just to get away from the ship.

I mention this to illustrate how desperate the ship's crew can be to step ashore after weeks at sea, on long-haul merchant ships

After sailing from Sept Isles the ship was ordered to sail at an economical speed of about 12 knots to Japan. I think it took around 52 days to cover the

distance of roughly 16000 nautical miles to Chiba, via Cape of Good Hope and Lombok Strait.

Japan-Australia-Japan



Samrat Ashok at Redcar (UK) on her maiden voyage under the original name.

After the completion of the voyage from Sept Isles the ship settled down on a regular Japan-Australia-Japan run, loading iron ore at Port Hedland or Dampier and discharging at Chiba or Mizushima.

These were relatively short trips of 12 days sailing each way. Port Hedland and Dampier situated in the wilderness of north Australia with no town nearby, offered little attraction to go ashore.

At sea the main source of entertainment was the 16mm films of English/American movies supplied by Walport International and screened by ship's projector. These films could be exchanged at most major ports with Walport Agency and also with other ships. We saw some excellent Hollywood and British movies, many of them quite recent releases. Screening of the movie was a big event and was generally saved for the weekend. The officers and cadets in proper uniform and the ladies on board in their finery assembled at the appointed time in the Officers Lounge. The ship's Electrical Officer was the

person in charge of the projector which was not to be touched without his permission.

But in course of time, some of the cadets acquired the skill to operate the projector under E.O.'s guidance and became quite proficient in it. The Electrical Officer would then indulgently give them the charge of the projector and sit back to enjoy the movie.

The cadets were quite enthusiastic about the Equator Crossing Ceremony in the beginning, with the traditional revelry and issuing of the Equator Crossing Certificate by 'Lord Neptune'. But as the Equator crossing became a fortnightly routine they lost interest and the event went mostly unnoticed.

Japan was a great place to visit in the 1960s and '70s because the Japanese Yen was cheap against Indian Rupee. Shopping and entertainment on a moderate scale were well within the means of Indian seafarers. Chiba was the preferred port as it was only a short train ride away from Tokyo city. Mizushima, situated in the Inland Sea of Japan, was a pretty little town where no one spoke English, but was good enough for a short outing ashore. Although the stay in port was never longer than a day or two, it provided the much needed interlude to the crew.

During one of the trips to Port Hedland the ship was delayed in port on account of a workers' strike. During this idle time the officers and cadets were invited to play a friendly Cricket match by the local Club. Although the ship's team lost the match, we acquitted ourselves reasonably well.

The Japan/Australia trips continued for about 4-5 months and then came the orders for another long voyage, this time from Port Hedland to Redcar (UK), via Cape of Good Hope. Redcar is on the east coast of UK near Middlesbrough. This was the second visit of *Samrat Ashok* to Redcar. The first was under the name *Gautama Buddha* in 1974 on her maiden voyage.

On completion of discharge at Redcar the ship was ordered to proceed to Tubarao (Brazil) to load for Japan. It was good to be back in warm weather

after the cold and windy east coast of England. Tubarao is one of the fastest ore loading terminals in the world. At an average loading rate of 10,000 tons per hour, even the largest bulk carriers are fully loaded in matter of hours.

So it was in our case and after less than 20 hours in port we were back at sea and heading east for Japan.

Death at sea

Among the emergencies most dreaded by a ship's Master is the medical emergency at sea. .

En route to Japan from Tubarao with Cape of Good Hope about a week away, the Deck Cassab (storekeeper) suddenly collapsed and became unconscious. I followed the standard procedure and after noting down all the signs and symptoms requested Radio Medical Advice from CIRM Roma. I had dealt with CIRM (*Centro Internazionale Radio Medico*) in the past and found them very competent in the matter of Radio Medical Advice. I followed the line of action advised by CIRM but it soon became clear that the person was no more.

To pronounce a person dead at sea is a very difficult decision for a someone who is not professionally qualified. CIRM doctors were very cooperative and they patiently guided me through all the checks required to declare a person dead.

The SCI office in Mumbai was kept informed of the developments and they in turn communicated with the various authorities and the seaman's family. The deceased seaman was given sea burial in the South Atlantic with due ceremony and we proceeded onward with a heavy heart.

Drydocking in Hiroshima

In March 1976 the ship went to Mitsubishi Yard Hiroshima, for dry docking. The ten day- stay in Hiroshima was a welcome break. The city of Hiroshima had been completely rebuilt after the

A-bomb catastrophe and although it showed no visible scars, one was always conscious of the fact that the tragedy had taken place only 31 years ago. A visit to the Hiroshima Peace Memorial Park (the atomic bomb museum) left the visitor in a sombre mood.

My wife and two daughters disembarked at Hiroshima to fly home after sailing on board for about 10 months.

Post-dry docking the ship resumed Japan/Australia run as before.

The final voyage

By this time I had completed a year on board and was anxiously waiting to be relieved. Normally the relief would have been arranged in Japan but there was an unexpected change in the ship's programme. According to the new voyage orders the ship was to proceed to 'Cagayan de Oro' in the Philippines to discharge the cargo loaded at Dampier, take bunkers at Singapore, thence return to Australia.

So finally it was at the port of Cagayan de Oro, on Mindanao Island in the Philippines that Capt Rabi Mishra came aboard to relieve me, accompanied by Mrs Leana Mishra.

As per company's instructions I made a short parallel voyage with the new Master up to Singapore where I finally disembarked for repatriation home.

The stint of fifteen months on *Samrat Ashok* was a hectic one with hardly a break in the tight schedule but it was also an enjoyable one in many ways, and professionally very satisfying.

The experience of a large bulk carrier also came handy when I took command of a VLCC a few years later.

Capt AC Dixit is the President Designate of IMF and Mentor SeaGull.



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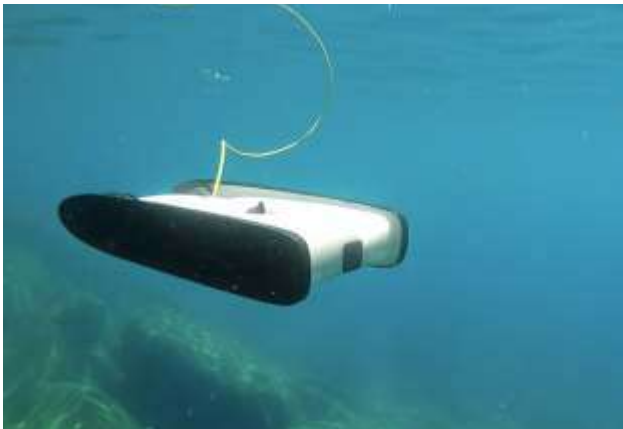
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Six of the Best Educational ROVs for 2019

ROV systems can help to inspire the marine scientists of the future, but which ones are best for educational use? Capt. Marc Deglinnocenti's annual countdown of top picks.

You can learn all sorts of things about our marine environment with a remotely operated vehicle. These great teaching tools have come down in price, gone up in capabilities, and have become more user friendly. Those are just some of the metrics I have applied toward determining which systems made my 2019 list of top educational ROVs. Once again, I start the countdown with number six and work toward number one.



OpenROV-Trident-Underwater Drone

Number six on the list goes to Aberdeen, Scotland-based Forum's Sub-Atlantic Mojave observation-class ROV. This is a typical 300-metre depth rated ROV with a large frame made for add-ons. Options include sonar, a contact probe to measure electrical current flow, manipulator arm, more cameras, depth gauge, instrument skid and a recovery beacon and flasher. The standard equipment isn't bad either. The ROV comes with a standard tilt feature for the camera, LED lighting, depth transducer, and auto positioning with some great navigation features built right in.

Number five goes to the Shark Marine Technologies, Canada, ROV named the Barracuda. This small ROV is perfect for teaching people about our marine environment. With its 300-metre depth rating and its shore-side power supply, this ROV can provide you with unlimited deep-dive time. It also comes with a host of optional equipment like sonar, manipulator arms, laser scale, radiation detector, metal thickness gauge, three types of controllers and a total navigation system that can operate the ROV semi-autonomously. Even more options are available.

At number four in the list is the Falcon from Saab Seaeeye, UK. This portable 300-metre rated ROV has a myriad of options for studying our underwater environment. Options include a metal thickness gauge, Doppler station keeping, manipulator arm, laser scale, depth gauge, sonar, a tracking system, and much more. It is so easy to use too with touchscreen and joystick controllers. The shore-side power moves the Falcon at three knots with an unlimited dive time. This ROV is built around a larger frame and skid for multiple configuration options. It will grow along with your growing needs.

Number three on the list goes to USA-based VideoRay's Mission Specialist Pro 5. This company is very popular with law enforcement agencies, fish and game departments and educational institutes with limited budgets. With its new Mission Specialist Pro 5, it has redesigned the entire ROV system to be modular and interchangeable. The internal parts can now be changed out quickly and easily to accommodate various mission requirements as they occur. VideoRay's interchangeable parts also mean that once you invest in a controller, tether or other parts in one system, they can still be used on future ROV systems from the company. That can save you a lot of money as you upgrade from one ROV to the next, and this new ROV is worth upgrading to.

The Mission Specialist Pro 5 has shore-side power for continuous dives. Those dives can reach depths of 305 metres. VideoRay has increased the speed to 4.4 knots to battle currents better too. Its new rotating manipulator arm has five jaw choices with a 1000-metre depth rating. Sonars and many other options are available to build this ROV into your vision of the perfect educational ROV. The base unit only weighs 10 kilograms (22 pounds), so one person can carry it.

Holding strong at number two again this year is USA-based OpenROV's Trident. This whole company's philosophy is built around worldwide education, and it seems to be working because it has sold more than 4000 ROVs and is now producing 100 units per week on its Fremont, California, assembly line. The inexpensive Trident has open source programming, can dive down to 100 metres, and has a three-hour battery endurance with a live 1080p video feed. The Trident has a phenomenal top speed of two metres per second. That is great for battling strong currents. Other Wi-Fi connected options can be mounted under the ROV with no wire connections to leak. OpenROV just doesn't quit innovating.

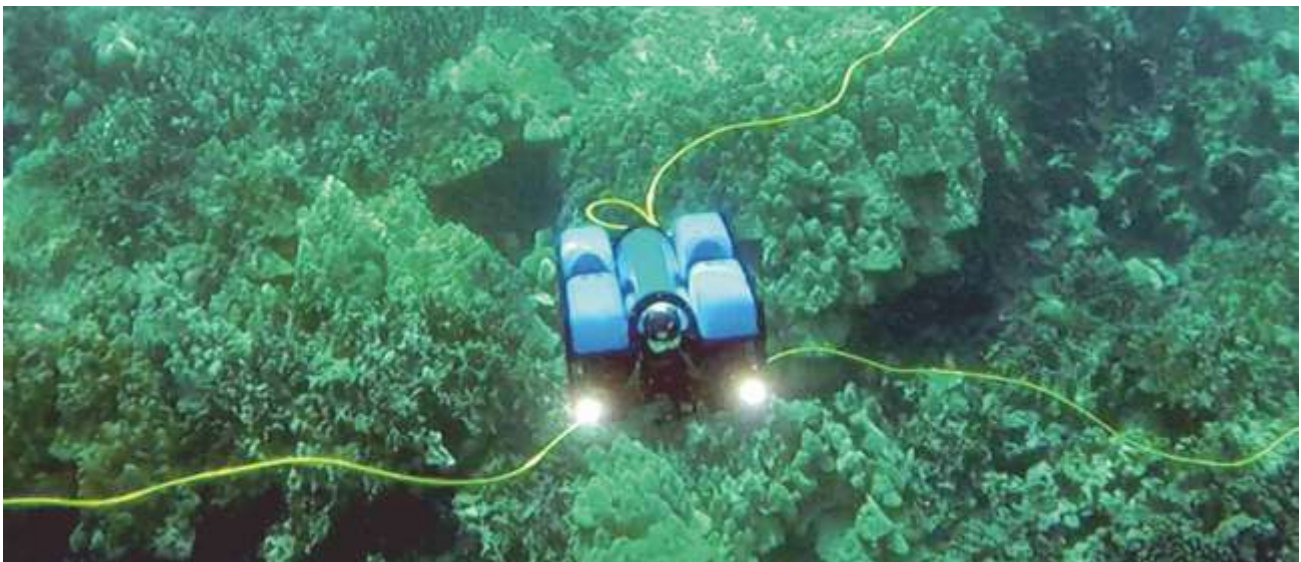
The company has now teamed up with National Geographic to help explore the world and share that exploration with interested online parties.

Your educational establishment can even apply online for a free Trident ROV grant at the Open Explorer-National Geographic website (openexplorer.nationalgeographic.com).

Although not ready for the general public, OpenROV can even offer a custom fish identification software package for aquariums,

This new software program can instantly identify and number fish on sight without harming the fish. This will soon revolutionise ichthyology for marine biologists everywhere.

universities, research institutes and research vessels capable of carrying larger desktop computers. This new software program can instantly identify and number fish on sight without harming the fish. This will soon revolutionise ichthyology for marine biologists everywhere. Those are just some of the reasons that make the Trident a top pick, but why should this lightweight ROV get the number two slot again? The answer is in the next question. At just US\$2500 (£1960) for a Trident ROV system with 100-metre tether, touchscreen controller and hard case, why hasn't your school ordered one yet?

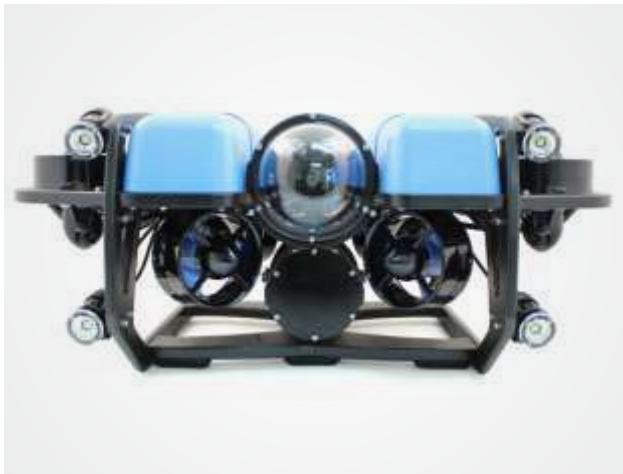


BlueROV2- exploring the depths



VideoEay MissionSpecialist Pro5

Once again, the number one position goes to Blue Robotics, USA. This time it is with the company's BlueROV2 Heavy. This ROV also has open source programming with a depth rating of 100 metres with an option to increase this to 400 or 500 metres! It also has a 1080p digital video



Seagull BlueROV2

camera. It has a gyroscope, an accelerometer, internal barometer, external depth sensor, external temperature sensor, electrical current and voltage sensing, leak detection and a three-hour battery endurance. The “Heavy” configuration of the BlueROV2 is a new idea from Blue Robotics that has helped to keep the California-based company at number one.

This small BlueROV2 Heavy configuration now comes equipped with eight thrusters. Going from two centre-mounted vertical thrusters to four vertical thrusters this year means twice the lifting power for recovering underwater artifacts and heavier biological specimens such as live rock. Moving the vertical thrusters out to a four-corner pattern has also improved the stability of the ROV tremendously. If you already bought a BlueROV2 and now want a BlueROV2 Heavy, don't worry. You can change it into the Heavy configuration with an adaptor kit for US\$599 (£470). More add-on options are available too such as sonar, a newly developed manipulator arm and an underwater GPS locator. The BlueROV2 Heavy is also very affordable at US\$3383 (£2655) for the base unit. Blue Robotics continues to add to its ever-growing online store of options at very reasonable

Seventy percent of our Earth's surface is covered in water, and 80% of all life is in the oceans. Most of that marine life lives in the coastal areas within the first 200 metres of water. There is a lot to learn and a lot to teach

prices that educational institutions can afford and upgrade with.

These educational institutions should invest in one of these ROVs, or other more expensive ones if the budget allows, just as soon as they can. Seventy percent of our Earth's surface is covered in water, and 80% of all life is in the oceans. Most of that marine life lives in the coastal areas within the first 200 metres of water. There is a lot to learn and a lot to teach, and it is all close to most of the world's population. There are now hundreds of suitable ROVs to choose from that could not be possibly placed on this list, but this list might help you narrow things down a bit. Get yourself a good ROV and start exploring our world today.

Courtesy : International Ocean Systems



WITH BEST COMPLIMENTS



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The Fascinating Fjords of Norway

Cdr Mukund Yeolekar (Retd)



Sogne Fjord an aerial view

Recently I was fortunate to take an exciting cruise on the most beautiful fjord areas of Norway. The narrow and spectacular fjord is surrounded by steep mountains and snow-covered peaks that stand about 5000 feet above sea level.

One could also get a view of thundering waterfalls and picturesque hamlets tucked between the mountain ranges along the fjord. Sailing from Gudvangen near Bergen on a ferry, on Sognefjord I realized that I was witnessing a UNESCO World Heritage-listed fjord which featured breathtaking scenery of majestic mountains, wild nature and idyllic villages on its banks.

What are Fjords ? The fjords were carved by a massive sheet of ice up to three kilometres thick that covered Northern Europe in a succession of ice ages. A fjord, is defined as a glacially over-deepened valley, usually narrow and steep sides, extended below sea level and naturally filled with seawater. The major part of the fjords as we know it today started with glacial erosive process about

2.5 million years ago. Fjords are some of the most dramatic landscape features on earth, and the origin and processes related to this feature have been discussed for almost a hundred years. Most authors agree that there has been a clear glacial-erosive influence on the **fjords**, but the importance of glacial activity relative to such other processes as tectonic activity and fluvial erosion (Fluvial erosion is the detachment of material of the river bed and the sides) has not been clear.

How were Fjords formed ? From the original Norwegian landscape, at that time only consisting a single river system, the glaciers abraded, plucked, gnawed and washed away an amount of rock corresponding to roughly 7600 cubic kilometres, resulting in a valley 203 km long and a maximum relief height of 2850m. From the fjord region of Western Norway, alone, a total of about 35000 cubic kilometres of solid rock was removed and dumped on the continental shelf.



Sogne Fjord

The longitudinal profile of the Sognefjord, nicknamed King of Fjords, shows one main basin with a relatively flat bottom bounded to the west by a high threshold. The main fjord, starting in the eastern part becomes abruptly deeper westwards to reach depths of about 800 metres below the

As you peer up at the towering mountains surrounding the fjords, you can appreciate the immense power of those forces of nature. The longest fjord in the world is in Greenland at about 350 km, and the Western Norway region boasts the next two spots on the list, with the Sognefjord 203 km and the Hardanger Fjord (179 km). The mountains along the Sognefjord rise gradually eastward from about 500 metres in the coastal region to altitudes above 2000 metres. The highest mountain adjacent to the Sognefjord is Bleia at 1721 metres.



Sogne Fjord Cruise Liner

present sea level, where it joins with another fjord. The maximum depth of the Sognefjord is 1308 metres. The fjord bottom then rises to 100-150 metres towards the west.

The Flam Railway. Later I experienced a spectacular train journey with panoramic view of some of the wildest and most striking examples of Norwegian fjord and mountain landscape. In about an hour the Alpine train ascended 866 metres from Flam to Myrdal mountain station.

It may be noted that fjords are in other countries too like Iceland, Alaska(US) and New Zealand. Milford Sound is a fiord in the southwest of New Zealand's South Island and joins the Tasman Sea. It is known for towering peaks, rainforests and waterfalls which plummet down its sheer sides. The fiord is home to fur seal colonies, penguins and dolphins.

Reference : www.fjords.com

Cdr Mukund Yeolekar is the Editor Seagull

Letter from London

By Paul Ridgway

Well I never...

Towards the middle of June the small City of London shipping community with which I keep in touch was sent an extensive set of briefing notes. This I am still flensing but you may care to consider these few salutary lines: *'There are said to be 20 million containers at any time afloat or being moved or awaiting shipment / delivery. One 18,000 box container ship carries as much cargo as a 50-ship convoy in the Second World War. 10,000 containers are lost at sea each year.'*

In the footsteps of Dalrymple

At the end of May the UK Hydrographic Office (UKHO) reported that Rear-Admiral Tim Lowe had been appointed Chief Executive and Accounting Officer.



*Rear-Admiral Tim Lowe appointed Chief Executive at the UK Hydrographic Office.
www.gov.uk ©MoD Crown Copyright 2019 ©*

He joined the UKHO as National Hydrographer and Deputy Chief Executive in 2015. In January 2019, he was made Acting Chief Executive, leading the UKHO's transformation to become a modern marine geospatial information agency and hydrographic office.

This position included overseeing the opening of the UKHO's award-winning new offices and championing key projects that have helped government, academia and the wider marine

community make the best use of our oceans in safer, more secure and more sustainable ways.

Commenting on his appointment Lowe said: *'I am extremely proud to have been appointed Chief Executive at such a pivotal moment for the UK Hydrographic Office.'*

'As we approach the Decade of Ocean Science, the need for marine geospatial data and expertise has never been greater, with the world facing increasing challenges in terms of safety, security and maximising the utility of our ocean resources in a sustainable way. Whether supporting the safe navigation of ships, helping our navy to keep our shores safe, or enabling coastal communities to understand their marine environment and grow their marine economies - we are well placed as an organisation to meet these challenges.'

D-Day commemoration



*The City of Portsmouth paid tribute to Normandy veterans in the presence of HM the Queen.
(MoD Crown Copyright 2019 ©.)*

On 5 June the City of Portsmouth paid tribute to Normandy veterans in the presence of HM the Queen, world leaders, the general public and the Armed Forces. At an international event on Southsea Common, an audience of veterans, military, senior figures and local residents watched an hour-long performance telling the story of D-Day and the meticulous planning by

Allied forces that paved the way for the invasion of Normandy.

Veterans were then transferred to mv *Boudicca* chartered by the Royal British Legion for passage to France escorted by warships of the Royal Navy with the Prime Minister, the Defence Secretary and the First Sea Lord bidding them farewell from HMS *Queen Elizabeth*. More warships lined the intended route of *Boudicca* into the Channel in commemoration of, and in gratitude for, their voyage 75 years before on 6 June 1944.

On D-Day, 6 June 1944, Allied Forces launched a combined naval, air and land assault on Nazi occupied France. Codenamed Operation Overlord, the Allied landings on the Normandy beaches marked the start of a long and costly campaign to liberate NW Europe from Nazi occupation.

On D-Day, 6 June 1944, Allied Forces launched a combined naval, air and land assault on Nazi-occupied France. Codenamed Operation Overlord, the Allied landings on the Normandy beaches marked the start of a long and costly campaign to liberate NW Europe from Nazi occupation. By the end of the day, the Allies had established a foothold along the coast and could begin their advance into France. In all the assault involved nearly 160,000 troops being landed. In the region of 7,000 warships, including battleships, destroyers, minesweepers, escorts and assault craft took part in Operation Neptune, the naval part of Operation Overlord. Allied naval forces escorted landing craft to the beaches. Warships bombarded enemy coastal installations in advance and during the landings. Naval gunfire provided invaluable support for the invading troops.

An Allied coalition delivered success, here was the Allied Expeditionary Force. Fourteen Allied nations took part: the UK, the US, Canada, France, Australia, New Zealand, Denmark, The Netherlands, Belgium, Czechoslovakia, Luxembourg, Poland, Norway and Greece. Forces from other nations of the Commonwealth

also participated.

It must be remembered that at the time of D-Day invasion Allied forces were still fighting in Italy, India, Burma and in the Pacific with the U-boat menace in every ocean. By June 1944 the war had nearly a year to run to victory for V-E Day was not until 8 May 1945. More than a year would elapse until the Japanese were defeated with V-J Day being on 15 August 1945.

On 6 June this year the Royal British Legion's Service of Remembrance at the Commonwealth War Graves Commission Cemetery at Bayeux was attended by HRH The Prince of Wales and the Prime Minister with service chiefs and veterans. There was a short parade of veterans; a religious service; and the laying of wreaths at the Cross. Bayeux was the first town liberated by the allied forces after D-Day.

InterManager's schools project

A pioneering project to involve schoolchildren in the shipping industry has been praised by the UN as a good example of how to educate young people about ocean life. Known as Adopt A Ship this is promoted by London-based InterManager, the international trade association for ship managers. It was highlighted during the closing remarks made at a UN event in New York, which brought together leaders of a wide range of programmes. Adopt A Ship partners schools, colleges and orphanages or shelters with a working ship to enable pupils to learn more about the world of international shipping and life at sea. More than 14,000 children worldwide participated in 2018 and InterManager expects some 40,000 to take part in 2019.

Schools are given a world map and pins to enable students to track their vessel's progress across international waters. Pupils communicate via their teacher with the Master and crew over e-mail. They discuss a wide range of topics such as employment opportunities that exist in the shipping industry to curiosity about how seafarers live, what they eat and whether they have seen marine creatures such as sharks and whales.

NATO trains with commercial shipping in the Baltic Sea

Early in June two warships from the Standing NATO Maritime Group One (SNMG1), Turkish frigate TCG *Gokova* and from the Royal Navy HMS *Westminster* successfully completed an important training mission in support of joint warfighting logistics.

It was reported from NATO Maritime Command at Northwood, NW London, that the two NATO ships escorted a civilian cargo vessel, mv *Gute* through high-traffic sea lanes during her transit from Norway to Szczecin, Poland carrying Norwegian military equipment for NATO exercise Noble Jump. The safety and security of sea-based trade and transportation routes is critical to the prosperity of the Baltic nations and the NATO Alliance. Escort training, such as that practiced by *Gokova* and *Westminster*, enhances interoperability among NATO and commercial shipping and provides reassurance to NATO allies and partners that NATO is capable and ready to maintain freedom of navigation in the Baltic Sea.

These activities are part of Maritime Express, a concept focused on creating training opportunities by NATO ships at sea to maximize readiness and interoperability.

Horrors off Oman

On 13 June IMO Secretary-General HE Kitack Lim speaking from his HQ in London condemned the suspected attacks on the two tankers off the coast of Oman that occurred earlier that day – the Marshall Islands-flagged *Front Altair* and the Panama-flagged *Kokuka Courageous*. At the time the IMO Maritime Safety Committee (MSC) was in session.

Secretary-General Lim said: *'These suspected attacks, coupled with the attacks in the UAE last month, concern me greatly. IMO has developed a comprehensive regime of regulation through the ISPS Code and the SUA Conventions and Protocols to prevent and respond to unprovoked, unlawful attacks on merchant shipping.'*

'The threat to ships and their crews, peaceably going about their business, is intolerable. I urge all Member States to redouble their efforts to work together to find a lasting solution to ensure the safety and security of international shipping around the globe and protection of the marine environment.'

'I will carefully review the results of the investigation, once they are completed, to consider if additional IMO action is warranted.'

At the time the Board of the International Chamber of Shipping (ICS), also based here in London, expressed concern at the serious incidents involving the two ships. Addressing the issue at the ICS Annual General Meeting in the Faroe Islands (13 June), the Board expressed the international shipping industry's alarm at recent incidents in the region affecting ships and their crews.

Gut Platten, ICS Secretary General commented: *'This suspected attack is a deeply worrying and intolerable situation. We await further clarification and information as to what has happened but we are relieved that there appears to have been no loss of life and that the crews are reportedly safe. This is the second incident in one month and the shipping industry, and most importantly the crews, must not be exposed to such risks.'*

'The Straits of Hormuz are crucial for the world economy, and any deliberate attempts to threaten traffic through them are to be condemned in the strongest terms. The situation continues to develop and we will scrutinize it closely, providing assistance to the industry to safeguard world trade and, most importantly, the lives of the men and women whose daily task it is to ensure its continued flow.'

A dip into past geopolitics

In an effort to appreciate the background to the politics of the region today a century after the 1919 peace treaties in the aftermath of the First World War I continue to be in thrall to the Orient. So it was in recent weeks that I had the pleasure of

reading: *Behind the Lawrence Legend: The Forgotten Few Who Shaped the Arab Revolt*, by Philip Walker, published by Oxford University Press.

With 320 pages, 35 black & white illustrations plus maps this is priced at £25.00 (ISBN 978 0 19 880227 3) and tells the story of the Arab Revolt of 1916-18, in which Colonel T E Lawrence (1888-1935) played a leading role. Here Walker charts one the most renowned campaigns of the First World War and at the same time casts a new light on the campaign and those involved, in a move away from Lawrence-centred narratives. Splendidly the author brings together the experiences of twelve British officers and intelligence staff for a fresh perspective on Lawrence and the Arab Revolt, all researched over nearly ten years from many hitherto unknown private sources.

Of relevance here are Lawrence's career appointments commenced in the Military Intelligence Department in Cairo in 1915-16, then as Liaison Officer with the Arab Revolt, 1916-18. In 1919 he attended the Paris Peace Conference. From 1919-22 he wrote *Seven Pillars of Wisdom*

T E Lawrence (Lawrence of Arabia) helped Sherif Hussein of Mecca gain independence from Ottoman Turkey during the Arab Revolt of 1916-18. His achievements, however, would have been impossible without the unsung efforts of a forgotten band of fellow officers and spies.

and was adviser on Arab affairs to Winston Churchill at the Colonial Office.

T E Lawrence (Lawrence of Arabia) helped Sherif Hussein of Mecca gain independence from Ottoman Turkey during the Arab Revolt of 1916-18. His achievements, however, would have been impossible without the unsung efforts of a

forgotten band of fellow officers and spies. Walker's account breaks new ground interweaving the compelling stories of Colonel Cyril Wilson and a colourful supporting cast with the narrative of Lawrence and the desert campaign. These men's lost tales provide a remarkable and fresh perspective on Lawrence and the Arab Revolt.

While Lawrence and others blew up trains in the desert, Wilson and his men carried out their shadowy intelligence and diplomatic work. His deputies rooted out anti-British jihadists who were trying to sabotage the revolt. Meanwhile, Lieutenant Lionel Gray, a cipher officer, provided a gateway into unknown aspects of the revolt through his previously unpublished photographs and eyewitness writings. Wilson's crucial influence underpinned all these missions and steadied the revolt on a number of occasions when it could have collapsed. Surely without Wilson and his circle there would have been no Lawrence of Arabia.

Yet Wilson's band mostly fell into obscurity. *Behind the Lawrence Legend* reveals their vital impact and puts Lawrence's efforts into context, thus helping to set the record straight for one of the most beguiling and iconic characters of the 20th century.

This is all set out in 19 chapters supported by a preface, list of maps, acknowledgements, 37 pages of extensive endnotes, biographies of the characters, a 150 title bibliography and index. The Royal Navy's Red Sea Patrol is well-mentioned such that Lawrence regarded their vessels as: '*... the fairy-godmothers of the Revolt. They carried our food, our arms, our ammunition, our stores, our animals.*' Walker is an historian and a retired archaeologist who has travelled widely in the Middle East and Central Asia.

Mr Paul Ridgway is IMF's Honorary Correspondent in London

The Tail Hooker

Reviewed by Cmde Ajay Chitnis

Though this book by Sureshth Kumar was published in 2012, and I knew about its existence, I only got to read it last week. The book, printed by Pahsmira Publications is a soft bound edition containing 230 pages of fiction intertwined with factual events.

As the author's note states, "This is a story of an ordinary boy who discovers the extraordinary world of Naval aviation. It is about his dreams and ambitions, about heartbreaks and the final triumph of dedicated effort over seemingly unsurmountable odds."

The book has a foreword by Vice Admiral Vinod Pasricha, an accomplished fighter pilot with lots of Carrier Flying to his credit, plus the Command of an aircraft Carrier amongst his other achievements in the Navy. Admiral Pasricha writes, "Though 'Fiction', Sureshth has added a few incidents during his flying tenures and has also given an insight into flying at sea. His vast experience, as well as the large number of aviation specialist assignments that he has held on board our aircraft carrier, has made this story most enjoyable."

The story is about a boy who studied in the Municipal Board Primary School, East Vinay Nagar, and later at the Atmaram Sanatan Dharam College, who dared to dream and pursued his dream of becoming a fighter pilot in the Navy and landing on the deck of Vikrant with his 'Tail Hook' firmly engaged in the arrestor wires. And, hence the title – The Tail Hooker.

Sureshth takes the reader through the numerous travails faced by a young naval aviation cadet during the training days, both with the Navy and



the Air Force, and has a knack of bringing incidents to life with his vivid description and wry sense of humour. There are many factual incidents described in the book, which serve to highlight the realities of life in the Navy, especially in the Fleet Air Arm; some with a happy ending and some that end in tragedy and grief.

To those who are at the beginning of their careers, this book will serve as an inspiration that life will throw many challenges your way, and you will often stumble, but that is when you need to get up and refuse to give up. To those who

have lived through their careers, not only in the Navy but even other professions will find it easy to identify yourself in similar situations, and bring back memories of days gone by. Highly recommended for all.

At the end of the book, there is an appendix describing the technicalities of Deck Operations – Launch and Arrest, which would be a great help in better understanding of what Carrier Flying is all about.

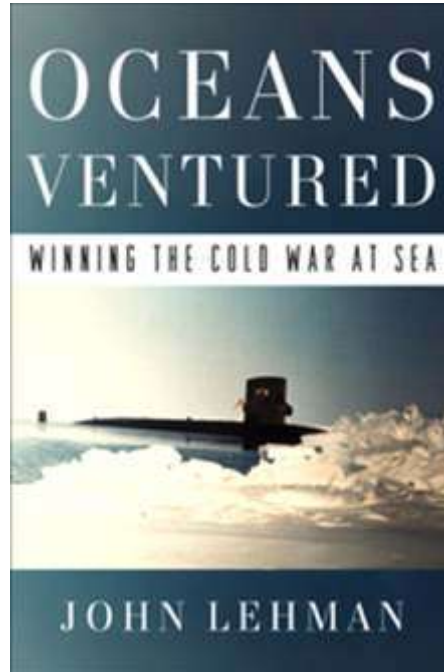
Finally, I first met Sureshth in August 1971 outside Vasco Railway Station, and have known him for almost 48 years. A serious minded and professional aviator, an outstanding cricketer and a humble human being, he bears an uncanny resemblance to the hero. His son, a Naval Fighter Pilot, has recently Commanded 300 Squadron, and has been selected to undergo the Course at Naval War College, Rhode Island, USA.

Cmde Ajay Chitnis is Vice President IMF and Joint Editor, SeaGull.

'Oceans Ventured - Winning the Cold War at Sea' by John Lehman

Reviewed by Milind Paranjpe

John Lehman the author of this book, is a former naval aviator who later became the secretary of the US Navy. Right from Theodore Roosevelt's time the US had followed the policy of 'Command of the Seas', the doctrine enunciated by Alfred Thayer Mahan, the 19th century naval historian strategist. But the 'allied naval disarmament treaties of the 1920s and '30s emboldened Germany and Japan and became a contributing cause of WWII. America's post WWII naval disarmament increased Communist aggression and facilitated the Korean War'.



In 1980, Ronald Reagan's election campaign was for military, particularly naval superiority with 600 ships and 15 aircraft carriers. Reagan won hands down. His forward strategy was so challenging to the Soviets that they were already making every effort to stop his re-election in 1984.

The post-Vietnam war US naval disarmament had the same result, encouraging Soviet aggression and expansion globally. 'Like a law of nature, this fact holds true irrespective of time and place: a decline in sea power invites disaster'.

President Carter, although an alumnus of the naval academy, according to the author, mistakenly believed soft power and diplomacy could be substituted for military and naval power when it is really the other way round. In 1980, Ronald Reagan's election campaign was for military, particularly naval superiority with 600 ships and 15 aircraft carriers. Reagan won hands down. His forward strategy was so challenging to

the Soviets that they were already making every effort to stop his re-election in 1984.

The Author comments that Putin's alleged efforts in the US election of 2016 are not unprecedented. Reagan was re-elected with thumping majority. During this period the Soviet navy had more than five hundred ships of whom over 350 were submarines. In the course of Reagan's tenure the US and NATO navies carried out exercises within striking distance of Soviet shores including in the Barents Sea, north of Norway even in Arctic weather. The defense budget increased by 10 percent - double

Reagan's campaign promise. Therefore, Reagan could take a much tougher line than Carter on arms control. He reinstated work on MX missile and B-1 bomber. This alarmed the Soviets. Further, their economy could not keep pace with the enormous cost of the expanded fleet. Finally the East European block disintegrated and the cold war ended.

It is interesting to read how American nuclear submarines tapped Soviet underwater communications lines in operations known as 'Ivy Bells' for a decade till an employee of the National Security Agency compromised them. That intelligence had enabled President Reagan to conduct forward naval strategy confidently. The book mentions two more Americans who spied for Norwegian and a Japanese company who sold advanced machinery to the Soviets which delayed the US navy's attempts to surpass the Soviets. Dr Robert Ballard of Woods Hole Oceanographic Institute had developed technology to dive two miles deep in the ocean for secret mission. Using it, wreck of the *Titanic* was located and filmed and

shown to global audience on National Geographic TV. It effectively served the psychological warfare to drive the Soviet paranoia.

On the INS Chakra leased by India from the Soviet Union author remarks 'The US navy (and some within the Soviet government) regarded this transfer of a nuclear submarine to a potential combatant in a volatile region of the third world a dangerous precedent'.

On the INS *Chakra* leased by India from the Soviet Union author remarks 'The US navy (and some within the Soviet government) regarded this transfer of a nuclear submarine to a potential combatant in a volatile region of the third world a dangerous precedent'.

On 1986 Delhi declaration the author says 'He (Gorbachev) and his **client**, Indian prime minister Rajiv Gandhi, called for dismantling of all foreign bases in the Indian Ocean, specially the US base at Diego Garcia'. (emphasis added)

In the epilogue, a statement which Indians should note is 'Its (China's) leaders do not hide their

intention to establish command of the Western Pacific, and they are progressing rapidly towards achieving that regional goal. They have also set out to become a global superpower, with their navy as a principal tool. For years, China's navy has routinely maintained a forward presence in the Arabian Sea. Recently it opened its first forward naval base at Djibouti, in East Africa (it will not be the last), and it conducts exercises in the Mediterranean, and even in the Baltic with its Russian counterpart'.

Profusely illustrated with black and white photographs and appropriate maps, the book sums up 'The lesson of this book is that we must restore the capability of our naval forces.... We must be able to deter our adversaries from attacking our vital interests by leaving no doubt that if they do so, they will suffer more than they hope to gain'.

Milind R. Paranjpe

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Reviewer is a Master Mariner and author of 'Ramblings of SeaLife' a book of his own experiences at sea.



Former Prime Minister Rajiv Gandhi visiting INS Chakra I. (1988) Courtesy: forceindia.net

Haj Sea Route to Resume After 23 years

By Capt AC Dixit



S.S. Mozaffari

A familiar sight in Bombay harbor almost to the end of the last century was a Haj pilgrim ship embarking or disembarking passengers at Ballard Pier. Moghul Lines, and later the Shipping Corporation of India operated these services. *Mohammedi, Mozaffari, Saudi, Rizwani, Islami* were some of the familiar pilgrim ships that made the Haj voyages between Bombay and Jeddah.

The entry and exit point of the passengers was the Yellow Gate which was bustling with activity during the Haj season. Competition from airlines, rising operating cost and an aging fleet that had no hope of replacement by new ships spelled the doom of the pilgrim service by sea.

MV *Akbar* was the last ship to operate on this run and when she reached the end of her economical life the service was discontinued by the SCI in 1995.

Revival of Haj Service

After a gap of nearly a quarter-century, the air at the Mumbai port may once again be filled with chanting of 'Taliyah', a prayer Muslims invoke during the annual Haj pilgrimage.

A high-level committee, formed by the Government of India to frame the Haj Policy, 2018, is exploring the option of reviving the sea route to Jeddah.

The option is now being weighed in the light of a 2012 Supreme Court order to the government to abolish by 2022 the subsidy offered to Haj pilgrims who travel by air.

Dispatching pilgrims by ships will help cut down travel expenses by nearly half as compared to airfares, thus compensating them for the absence of subsidy.

At present, devotees undertake the journey by air from 21 embarkation points across the country, Mumbai and Delhi being the busiest among them.

An economy class ticket for the around five-hour flight between Mumbai and Jeddah would roughly cost anything between Rs. 25,000 and Rs. 52,000 (without subsidy).

The fare for the same journey by ship could be cut down to about half of the airfare.

This is possible because the ships that would be deployed on this route would be modern and well-equipped ships that can carry a much larger number of passengers. Assuming an average speed of 20 knots, they can cover the distance of 2,300 nautical miles between Bombay and Jeddah in less than five days.

Kolkata and Kochi have also been identified as probable embarkation points besides Mumbai, for the benefit of pilgrims from eastern and southern regions of India.

It is reported that Saudi Arabia has given its approval for the proposal to ferry the pilgrims by sea from/to India.

Saudi Arabia had earlier this year increased India's Haj quota from 1.36 lakh to 1.70 lakh. A total of 1.35 lakh Indian devotees undertook the pilgrimage last year.



The Spanish passenger liner *Cabo Sao Vicente* was acquired by SCI and renamed *Noor Jehan*

The Early History of Haj Ships

During the Mughal era in India in 16th and 17th century, ships owned by members of the Royal family were trading out of Surat to the Persian Gulf and the Red Sea with cargoes from/to India. During Haj season these ships were made available for pilgrimage to Mecca.

Akbar was the first Mughal emperor to organize Haj at state expense and provide subsidiary to pilgrims. He established a hospice for devotees at Mecca and ordered a caravan to be sent from India every season. He arranged to set aside three of his own ships namely *Rahimi*, *Karimi* and *Salari* for free transportation of pilgrims to the port town of Jeddah. He did so after signing a treaty with Portuguese for safe passage of pilgrim ships in the Red Sea. These ships weighed between 1400 to 1600 tons with a carrying capacity of 1700 pilgrims each.

Before Akbar, Indian Muslims had only two options, either to travel by the overland caravan or by the ships. Due to various problems associated with land route, most of the pilgrims preferred ships. But the menace of Portuguese pirates in Persian Gulf and Red Sea was a major obstacle. By entering into an agreement, Akbar removed this danger and made the journey to Mecca safer. As the numbers of devotees swelled, the prime embarkation port at Surat came to be known as Bab-ul-Makkah. (Gateway to Mecca).

During the British rule of India, B.I. (British India

Steam Navigation Co Ltd) began to operate Bombay/ Jeddah route from 1859 for Haj pilgrims.

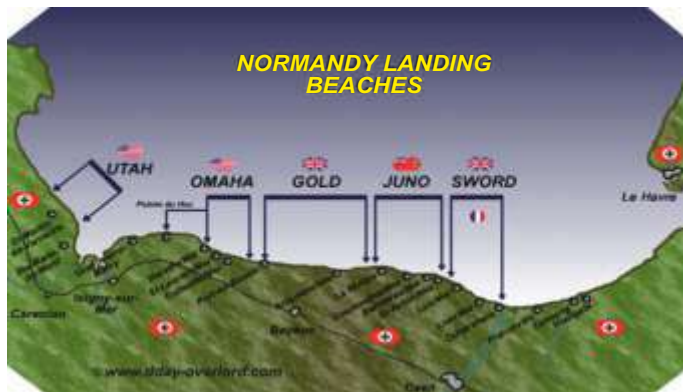
The Bombay and Persia Steam Navigation Company was founded in 1877 and managed by Turner Morrison & Co. Ltd, Bombay. Their ships operated regular passenger and cargo services to the Persian Gulf and the Red Sea. The company was participating in the Pilgrim trade from the very early days and in course of time became the leading operator of Haj service from Bombay to Jeddah.

In 1939 the Bombay and Persia Steam Navigation Company was renamed the **Mogul Line**. In 1960 the Mogul Line became entirely Indian owned and was in 1963 taken over by the Shipping Corporation of India. In 1976 the SCI acquired the Spanish passenger liner *Cabo Sao Vicente* and employed her on Bombay-Jeddah Haj service, under the name *Noor Jehan*.

The revival of Haj service slated to begin in 2019 is good news for Indian shipping and Mumbai port. It will open up many opportunities and help to bring back some of the lost glory to Mumbai port as India's most important passenger ship terminal.

Capt AC Dixit is the President Designate of IMF and Mentor SeaGull.

D-Day and Sword Beach Editor's Note



The Editor's Note is based on the inputs by Cmde Rajan Vir, IMF President.

In 1944 Adm Teddy Gueritz (then Lieut RN) was appointed as a Beach Master for a crucial area of the British assigned Sword Beach at Normandy, where allied landings were being planned to take place. For his meticulous planning and outstanding leadership, leading to success and ultimate victory of Operation Neptune, Lt Gueritz was decorated with DSC, and Bar.

In 1950, Lt Cdr Gueritz was Cadet Rajan Vir's senior Divisional Officer on board the Training Cruiser HMS Devonshire. Many years later, they met again and became friends, and Adm Gueritz came to be a keen supporter of the IMF. He was interviewed by President IMF in Salisbury in

2000 on Teddy's first - hand experiences of Operation Neptune (Overlord). Some Seagull members may recall reading the comprehensive interview in Issue No 23, published in November, 2000. A brief excerpt from that insightful interview follows to give you a feel of that intense time and planning - " the whole of the operational plan was related to an equally elaborate deception plan. It was Churchill's remark that truth needs to be surrounded by a body guard of lies in time of war. And this is exactly what happened. When any reconnaissance was carried out, it had to be done on a wide scale to give the impression, if anything, that we were going to go to the Calais area, rather than to Normandy. The deception hadn't to be too obvious, otherwise it would be self defeating. Finishing up with deception measures at the last minute, was using technology such as projection of the radar images and confusing any observer. The other point of course about the surprise on the actual day, which nobody can really cater for, was the fact that the weather was foul and the general consensus was that we wouldn't attempt a landing in these conditions. But we did. There were of course certain other factors. The Germans might have assumed that the particular date that we had chosen, conjunction of moon and tide, would have favoured at that time or not."

HMS Enterprise in London



On 19 June HMS Enterprise commenced a rare visit to London and was berthed in West India Docks.

Primary role of Enterprise is to conduct hydrographic and oceanographic survey which contributes to the safety of mariners both in and out of defence.

Although primarily a survey ship she is armed with two 20mm cannons, three Mk44 miniguns and four General Purpose Machine Guns.

Contributed by Mr Paul Ridgway, IMF's Hon Correspondent in London.

Photo: MoD Crown Copyright 2019 ©.

Internship by BITS Pilani Students

By Dr(Cdr) Arnab Das

The bright young students from the prestigious Birla Institute of Technology and Science (BITS) joined the Maritime Research Centre (MRC) at Pune.

The eleven students from all the three campuses, namely Pilani, Hyderabad and Goa from varying branches of engineering and science joined us for their eight weeks summer internship. The BITS has two internship programmes called the Practice School, PS-1 for the students having completed their second year and PS-2 for the students in their final year. The PS-1 is for a duration of eight weeks and the PS-2 is for a duration of six months. These students joined us on the 21 May 2019, as part of their PS-1 and completed their attachment on the 13 July. These are extremely ambitious students with clear career goals and all of them choose their PS-1 based on good understanding of the PS station. Though MRC had offered only ten vacancies for the PS-1, there was overwhelming response from the students and one seat had to be extended to accommodate a student who was very keen to work on the maritime related project.

The MRC is focussed on the Underwater Domain Awareness (UDA) framework, particularly in the tropical littoral waters of the Indian Ocean Region (IOR). The MRC works on all the three aspects of Policy, Technology & Innovation and Human Resource Development. The multiple projects being pursued at MRC cater to UDA requirements of the four stakeholders namely - National

Security, Blue Economy, Environment & Disaster Management and Science & Technology. The MRC is a unique organization with high priority on research with a very specific agenda of ensuring effective UDA across stakeholders. The efforts of MRC is two-fold – one to generate the awareness on the UDA framework and its relevance to the national and regional requirement for safe, secure and sustainable growth, and also to contribute substantially towards realizing the UDA framework on the ground by providing real world solutions through their project based R&D efforts. The interns were allocated individual projects to cover multiple aspects of the UDA framework and all of them were extremely motivated and energized to contribute towards this niche domain. The projects ranged from security solutions for effective deployment of underwater systems and platforms, AI based solution for AIS data handling, Inland Water Transport management, Assessment of Acoustic Habitat Degradation, Radiated Noise generation based on AIS data, Snapping Shrimp mapping for underwater system deployment, Underwater channel modelling, Noise & Vibration measurement and analysis, Passive Sonar Simulator, GUI for Spatio-temporal low frequency ambient noise mapping and many more. The projects are extremely relevant to the contemporary geostrategic requirements and seek to contribute towards the larger UDA framework overcoming the challenges of the tropical littoral waters of the IOR.



Invitees watching a presentation

The interns have aggressively pushed their work and in a very short time demonstrated significant progress. They initially worked on a Research Note to define the research area effectively based on literature survey from open source on the chosen topic. The detailed literature survey establishes the state-of-the-art in the domain and ensures their understanding of the dimensions and

dynamics of the area. This also enables them to identify a novel contribution based on deeper



Interaction with interns

understanding of the research done before on a global scale. The projects undertaken by them was a mix of analytical work, data processing and algorithm development and more. The end of eight weeks saw significant maturity on the projects and they submitted a detailed report to comprehensively document their efforts.

The interns could interact with the senior council members of the Indian Maritime Foundation (IMF) and discuss their projects to seek their inputs. The first detailed presentation on their work was undertaken on the 08 June on the occasion of the World Ocean Day. The senior mariners and maritime domain experts included Vice Admiral DSP Varma, Cmde Rajan Vir, Cmde Narendra Kapoor, Mr. Yezdi Batliwala, Capt Anand Dixit, Mr. Praful Talera, Cmde Ajay Chitnis, Cmde J J Verma and more, who reviewed their work and gave them guidance. The experts appreciated the choice of projects and also the depth of understanding by the interns.

Cmde Rajan Vir, President IMF hosted a presentation by the interns at the Boat Club followed by lunch. The interns did not miss an opportunity to impress the senior mariner with over seven decades of maritime experience. Each

of them had demonstrated significant progress in their projects and their maturity of understanding of the maritime domain. It was truly an achievement for all of us involved in rekindling maritime consciousness among the next generation. The student led by MRC Research Fellow Mr. Shridhar Iyer have done a remarkable contribution in progressing their individual projects on UDA and also gaining deeper understanding of the various facets of the maritime domain.



**Interns with senior guests.
Seated (L to R) Dr Cdr Arnab Das,
Cmde R Vir, President IMF, Mrs Nailini Kunte**

The PS-1 interns were awarded a certificate and also a Letter of Appreciation for their research efforts at MRC, Pune. The research note submitted by them and the project reports are available in the MRC website linked below.

Website:

<http://www.indianmaritimefoundation.org/mrc/>

Dr(Cdr) Arnab Das is a Council member of IMF and Founder & Director Maritime Research Centre (MRC) Pune

Autonomous Ships- The Next Step

Autonomous shipping is the way forward in the maritime industry with Rolls-Royce leading the way in its development.



Autonomous Ship- Rolls Royce's Vision

**“Autonomous shipping is the future of the maritime industry. As disruptive as the smartphone, the smart ship will revolutionise the landscape of ship design and operations”
Mikael Mäkinen, President, Marine**

Revolution

For the smart ship revolution to become a reality a number of critical questions need to be answered.

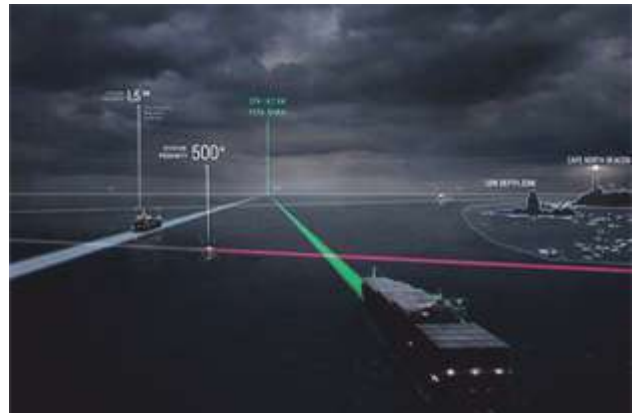
1. Technology: What technology is needed and how can it be best combined to allow a vessel to operate autonomously, miles from shore?
2. How can an autonomous vessel be made at least as safe as existing ships, what new risks will it face and how can they be mitigated?
3. What will be the incentive for owners and operators to invest in autonomous vessels? Are autonomous ships legal and who is liable in the event of an accident?

The Rolls-Royce led, Advanced Autonomous Waterborne Applications Initiative (AAWA) will answer these questions. Funded by Tekes (Finnish Funding Agency for Technology and Innovation) the project brings together leading international maritime businesses and top Finnish universities.

Technology

A ship's ability to monitor its own health, establish and communicate what is around it and make decisions based on that information is vital to the development.

The specifications and preliminary designs for a proof of concept demonstrator were given by the end of 2017 and a remote controlled ship in commercial use is planned by the end of the decade.



Conceptual drawing of an autonomous ship navigating in-shore waters

The need is to develop a set of electronic senses that inform an electronic brain and allow the vessel to navigate safely and avoid collisions. The AAWA project is exploring three areas.

Sensor Fusion: The AAWA project has explored the contribution different sensor technologies make in providing a vessel or its remote operators with an accurate perspective on the vessel's surroundings at all times and in all conditions.

Central algorithm: Navigation and collision avoidance will be particularly important for remote and autonomous ships, allowing them to decide what action to take in the light of sensory information received.

Communication and connectivity: Autonomous vessels will still need human input from land, making connectivity between the ship and the crew crucial. Such communication will need to be bidirectional, accurate, scalable and supported by multiple systems – creating redundancy and minimising risk.

Safety and Security:

The operation of remote and autonomous ships will need to be at least as safe as existing vessels if they are to secure regulatory approval, the support of ship owners, operators, seafarers and wider public acceptance. Remote and autonomous ships have potential to reduce human-based errors, but at the same time may modify some existing risks as well as create new types of risk. These circumstances and possible remedies will need to be explored. Cyber security will be critical to the safe and successful operation of remote and autonomous vessels. The project will identify and adapt current best practice from a range of industries for application in the marine environment.

Legalities

A vessel's voyage is covered by a range of national, international and private legal frameworks. To further complicate matters, maritime law does not anticipate the development of remote or autonomous ships. This presents many ambiguities. For example, does a ship's master or crew necessarily have to be on board the ship? For remote controlled and autonomous shipping to become a reality we need efforts at all regulatory levels. The legal challenges of constructing and operating a demonstration vessel at a national level need to be explored, while simultaneously considering appropriate rule changes at the IMO. Questions of liability for autonomous ships are subject to national variations, but generally it seems that there is less need for regulatory change in this field. What

needs to be explored, however, is to what extent other liability rules, such as product liability, would affect traditional rules of maritime liability and insurance in the field of autonomous ships.

Legislation can be changed if there is a political will. The AAWA team plans to continue researching this element of the law, and to propose solutions, throughout the program. In the end, however, the necessary regulatory actions at national and international level need to be taken by governments.

Economics

Attractive Benefits : Discussions with the industry have identified direct cost-reducing benefits and other indirect benefits. Direct benefits are often listed at a vessel level: More efficient use of space in ship design • More efficient use of crew and their skills • More efficient use of fuel Indirect benefits occur at company and network levels in the shipping sector. Remote and autonomous shipping allows improved optimization of operations and processes.

Ongoing digitalization and autonomous technologies will create new services already along the way towards autonomous shipping. Some of these services will support existing market players and some will allow new players to enter the market. For example, in the automotive sector the self-driving car has been seen as an opportunity not only by traditional car manufacturers, but also by entrants from other technologies.

Next steps : 2020- Remotely operated local vessels. 2025: Remote controlled unmanned coastal vessels. 2030: Remote controlled unmanned ocean-going ships. 2035: Autonomous unmanned ocean-going ships.

Source: www.rolls-royce.com/marine

News From Janes

(Jane's Defence Weekly)

'New Russian 'Drone Mothership'

Submarine' launched.

Russia has launched its first submarine designed to launch the new Poseidon nuclear armed unmanned underwater vehicle (UUV) at the Sevmash shipyard in Severodvinsk. The nearly complete Project 09852 special-purpose nuclear-powered submarine, *Belgorod*, was moved out of the Sevmash main assembly hall during the launch event on 23 April before being lowered into water in the port's basin to allow final assembly work and pre-delivery trials to begin.

Russian media reported that the 184 m-long submarine is designed to operate six Poseidon weapons and it is also believed to have an underwater dock beneath its hull to allow the launch of mini-submarines and multi-mission UUVs.

Chinese navy puts newest platforms on display.

China's People's Liberation Army Navy (PLAN) has displayed some of its newest platforms in a fleet review held on 23 April in the waters off the northern port city of Qingdao to mark the 70th anniversary of its founding. More than 30 Chinese naval vessels and 18 foreign warships participated in the event, which was overseen by President Xi Jinping who was embarked in Type 052D destroyer *Xining* (117). Xi was escorted by PLAN Commander Vice Admiral Shen Jinlong.

The most notable ship in the formation was *Nanchang* (pennant number 101), the lead ship of

the Type 055 (Renhai) class, which was launched in June 2017. PLAN watchers had anticipated that the ship would be formally commissioned prior to the fleet review. Although this has not been officially confirmed, its participation in the event while displaying its pennant number indicates that the platform has entered service.

Russian Navy opts for underwater weapon and sensor upgrades.

Newly developed torpedoes, torpedo defence systems, and mine countermeasures systems are to be fitted to Russian Navy warships, according to a series of announcements by an executive of the JSC Tactical Missiles Corporation.

The Russian Navy's two Project 11442 cruisers,



INS *Kochi* firing Barak 8- MRSAM,

Admiral Nakhimov and Pyotr Velikiy, will be retrofitted with the Paket-NK torpedo defence system during upgrade periods. The Paket-NK will also be installed on new-built Project 22350 Admiral Gorshkov-class frigates and Project 20380 Steregushchiy-class corvettes.

Chief executive officer for the Russian State Research and Production Enterprise Region 'GNPP Region', part of JSC Tactical Missiles Corporation, told Russian state news agency TASS on 13 May that the Paket-NK had completed its cycle of trials.

Indian Navy Demonstrates Co-Operative Engagement Firing Capability.

The Indian Navy (IN) has carried out its first successful “co-operative engagement firing” trials using the Medium-range Surface-to Air-Missile (MRSAM) version of the Barak-8 missile system. IN Kolkata-class guided-missile destroyers INS *Kochi* (D 64) and INS *Chennai* (D 65) were involved in the first such test-firing from India's western seaboard in the Arabian Sea on 17 May, according to a statement by the Indian government's Press Information Bureau (PIB).

“The missiles of both ships were controlled by one ship to intercept different aerial targets at extended ranges,” said PIB, adding that the firing trials were conducted through the collaborative efforts of Israel Aerospace Industries (IAI), the IN, and India's Defence Research and Development Organisation (DRDO), along with several of its subsidiaries.

The DRDO and IAI jointly developed the 70 km-range Barak-8 MRSAM under a USD1.4 billion programme launched in 2006. IN spokesperson Captain DK Sharma told *Jane's* on 21 May that the Barak-8 firing was executed by “seamlessly” transferring data from one destroyer to the other via locally designed systems. He said that among the local companies involved in the test-firing were Bharat Dynamics Limited, which series-builds the MRSAM, and the DRDO's Defence Research and Development Laboratory, a missile system design facility.

South Korea's first KSS-3 submarine begins sea trials.

17 June 2019. South Korea's Daewoo Shipbuilding and Marine Engineering (DSME)

has begun initial sea trials for the country's first KSS-3 diesel-electric submarine (SSK), an industry source close to the matter has confirmed with *Jane's*. The vessel, *Dosan Ahn Chang-ho*, began the trials during the week of 10 June, and these involved mainly tests of the vessel's propulsion systems and steering equipment. The latter included validations carried out remotely from the bridge and manually from the submarine's aft section, the source added. *Dosan Ahn Chang-ho* is the first of three KSS-3 submarines ordered for the Republic of Korea Navy (RoKN). The keel for the vessel was laid down in May 2016 and the SSK was ceremoniously launched by DSME in September 2018.

The submarine has an overall length of 83.5 m, an overall beam of 7.7 m, and a hull draught of 7.62 m. It displaces approximately 3,400 tonnes when surfaced, 3,800 tonnes when dived, and can accommodate a crew of 50. The SSK is air-independent propulsion-capable, and has a top speed of 20 kt when dived, 11 kt when surfaced, and a standard surfaced range of 10,000 n miles (18,520 km) at 8 kt.

MHI commences construction of new submarine class for JMSDF.

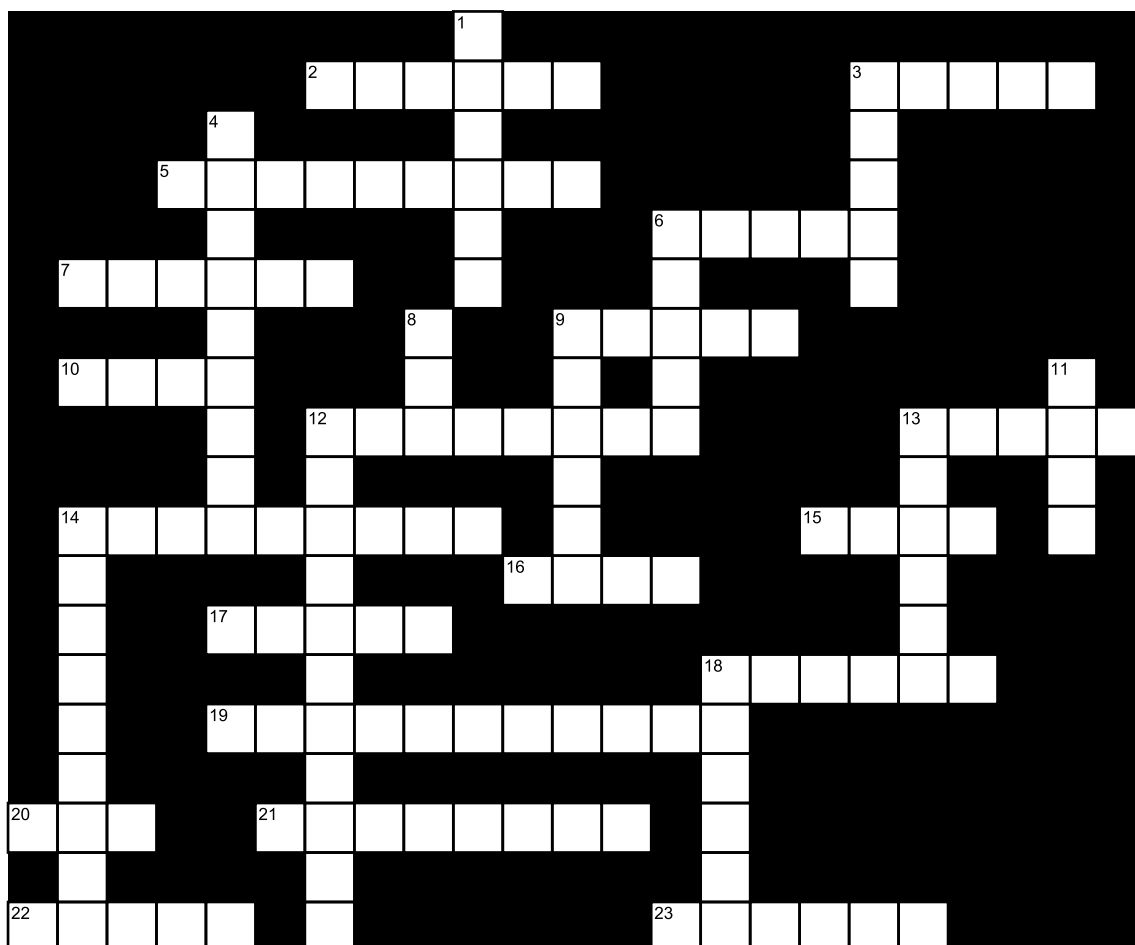
Japan's Mitsubishi Heavy Industries (MHI) has commenced construction of the first of a new class of at least three diesel-electric attack submarines (SSKs) to supplement the Japan Maritime Self-Defense Force's (JMSDF's) fleet of Soryu-class SSKs, a company spokesperson told *Jane's* on 4 July. Both MHI and the JMSDF declined to provide details about the new 3,000-tonne SSK class, the name of which has yet to be agreed upon. However, documents released by the Japan Ministry of Defense (MoD) over the past few years show that the first boat, which is expected to enter service in March 2022, is being referred to as '29SS'.

Compiled by Cdr Mukund Yeolekar Editor Seagull

Maritime Crosswords 3

Commander Sati Taneja (Retd)

This is a crossword suitable for those with a nautical background



Across

- 2 Direction ship is steering
- 3 Bird that has little fear so is easily caught
- 5 Hard and long lasting biscuit
- 6 So low in water that it washes over the boat
- 7 Triangular flag denoting membership of a yacht club
- 9 To furl a sail by folding it to the mast
- 10 Entangle with a rope or cable
- 12 Spar projecting from the bow used for anchoring the forestay
- 13 Curvature of hull towards the gunwhale
- 14 Long stays from the bow to the mast
- 15 Sea floor higher than surrounding area
- 16 A knot to join 2 ropes
- 17 Make fast a line
- 18 Cutting off the wind from a sailing vessel
- 19 Whistle used by the Bosun
- 20 Ships boat
- 21 Ships weapons
- 22 Distance travelled by a wave
- 23 Midshipman

Down

- 1 When a sailing vessel loses control and heels over
- 3 Loop in rope or line
- 4 Removable plank
- 6 Stop or cease whatever is being done
- 8 Front of the vessel
- 9 Sailing vessel of more than 3 masts
- 11 Vessel with 2 square rigged sails
- 12 Device for adjusting tension in stays or line
- 13 Smokestack or chimney
- 14 Firing of gun in a naval vessel
- 18 Fixed aid to navigation

Gallimaufry

'China's Vast Fleet is Tipping the Balance of Power in the Pacific.'

American ships sailed through the Taiwan Strait. This was the seventh passage of U.S. warships through the narrow, strategically sensitive waterway since July. Each time, though, just two U.S. vessels have ventured through; this week, it was a pair of destroyers. No powerful flotillas and certainly no aircraft carriers. It has been more than 11 years since an American carrier traversed the Taiwan Strait.

China now rules the waves in what it calls the San Hai, or "Three Seas": the South China Sea, East China Sea and Yellow Sea. In these waters, the United States and its allies avoid provoking the Chinese navy. In just over two decades, the People's Liberation Army (PLA), the Chinese military, has mustered one of the mightiest navies in the world. This increased Chinese firepower at sea – complemented by a missile force that in some areas now outclasses America's – has changed the game in the Pacific. The expanding naval force is central to President Xi Jinping's bold bid to

make China the preeminent military power in the region. In raw numbers, the PLA navy now has the world's biggest fleet. It is also growing faster than any other major navy.

"We thought China would be a great pushover for way too long, and so we let them start the naval arms race while we dawdled," said James Holmes, a professor at the U.S. Naval War College and a former U.S. Navy surface warfare officer.

Courtesy: gcaptain.com

India, UK in talks for the aircraft carrier *INS Vishal*

India is looking to tie-up with the UK to build a warship for the Indian Navy. If the negotiations and planning materialize, then Indian Navy will get its biggest warship under the Make-In-India scheme, according to a PTI report. The new warship will be built along the lines of HMS Queen Elizabeth. If India manages to buy the detailed plans for the 65,000-ton



INS Vishal

British warship, Indian Navy will get INS *Vishal*, which will be the name of the super carrier, by 2022.

A delegation from India visited Rosyth dockyard in Scotland where HMS *Queen Elizabeth* was built. If a deal is inked then the warship will be built in India as per the *Make in India* programme.

However, the parts of the warships will be supplied by UK-based companies, the report stated. Indian Navy already has 45,000-ton carrier INS *Vikramaditya* which was procured from Russia in 2004. The 40,000-ton INS *Vikrant* will also be inducted soon.

If everything goes well, the addition of INS *Vishal* could provide a massive boost to the Indian Navy as its carrier fleet will be larger than the UK Navy. UK Defence Minister Stuart Andrew chose not to share too many details saying UK and India hold such discussions exchanging ideas on capability and equipment issues on a regular basis. British and French aerospace giants BAE and Thales have the right to design for UK aircraft carriers. BAE has started a discussion with Indian Navy on the design issue and modifications can be made as per the requirements.

Courtesy: Financial Express

The Spy Whale

When a beluga whale approached a fishing boat near a small Norwegian town in April, it raised suspicions. The beluga, which was actively approaching boats and pulling on ropes, the Guardian reports, was wearing a harness. The harness looked like it was fitted to carry a camera and, on the inside, it said "Equipment of St. Petersburg." Marine experts have suggested that the whale was part of a Russian military program that trains cetaceans in military operations. It may sound strange, but it wouldn't be unheard of. In 2017, Russian state television reported that Russia was experimenting with using beluga whales, bottlenose dolphins, and several species of seals to guard entrances to naval bases, assist divers, and possibly kill strangers who entered their territory. Belugas, however, were dismissed when it became clear they got sick after swimming too long in cold, polar waters.

Courtesy: National Geographic

Courtesy gcaptain.com

Kochi-Maldives Ferry Service'

The much-awaited Kochi-Maldives ferry service is a step closer to being realised, with the Centre reconsidering the proposal mooted in 2011.

The proposal for a ferry-cum-cargo service from here to the island nation was mooted in 2011 following the SAARC Summit. This was followed by a meeting between officials of Kochi and Maldives ports and the Shipping Corporation of India (SCI).

At the meeting, it was decided to structure the service as one having a passenger capacity of 300, apart from the capability to carry 15 to 20 containers and around 500 tonnes of bulk cargo.

The transit time between Kochi and Maldives on a modern ferry is a day and will hence be ideal even for perishable cargo.

A senior Kochi Port official said the SCI had expressed keenness to operate such a service even recently. "There was no intimation after that. It was learnt that the Indian Ambassador to Maldives has sent a letter to the Shipping Ministry, seeking the ferry cum cargo service," he added.

"Our role comes in only after the service is finalised for introduction. We are open to provide berthing to the vessel. A market study to assess the feasibility of such a service must be held. It must also probe whether the demand is more for such a service from Kochi, or from Vizhinjam in Thiruvananthapuram," the official said.

The Kochi Port has a variety of berthing options, from its BTP berth where small and medium ships can be berthed, to other berths where bigger ones can call.

Courtesy: The Hindu

GRSE Delivers its 100th 'Warship' to the Indian Navy



IN LCU L-56

Garden Reach Ship Builders and Engineers Ltd., (GRSE) delivered its 100th warship to the Indian Navy March 30. This makes GRSE the first Indian shipyard to make and deliver 100 warships to the Indian Navy, Indian Coast Guard and Mauritius Coast Guard.

What started in 1961 with the delivery of Seaward Defence Boat (Mk-I) is seeing a splendid culmination with the delivery of the 100th ship – **A Landing Craft Utility, L-56 — 30.**

The 100th warship, “*IN LCU L-56*” was formally handed over by Rear Admiral V. K. Saxena, IN (Retd.) Chairman & Managing Director, GRSE to the Commanding Officer of the Ship, Lt. Cdr.

Gopinath Narayanan of Indian Navy at the Ceremony held in GRSE.

IN LCU L-56 is the sixth of an order of eight land craft vessels from the Indian Navy. The entire design of these LCU Mark IV ships has been developed in-house by GRSE as per requirements specified by Indian Navy. The construction of the balance two ships is progressing as per the schedule.

LCU Mk-IV ship is an amphibious ship with its primary role being transportation and deployment of Main Battle Tanks, Armored Vehicles, troops and equipment from ship to shore. These ships based at the Andaman and Nicobar Command, can be deployed for multirole activities like beaching operations, search and rescue, disaster relief operations, supply and replenishment and evacuation from distant islands.

The LCU is 63 m in length and 11 m wide and has a displacement of 830 T with a low draught of 1.7 m. It can achieve speed of 15 knots. The LCU is designed to accommodate 216 personnel and is equipped with two Indigenous CRN 91 Guns to provide artillery fire support during landing operations. The ship is fitted with state-of-the-art equipment and advanced systems like Integrated Bridge System (IBS) and Integrated Platform Management System (*IPMS*).

Courtesy: NAVAL NEWS

Answer to Maritime Crossword 3

Across :

2. Course, 3. Booby, 5. Hard Tack, 6. Awash, 7. Burgee, 9. Brail, 10. Foul, 12. Bowsprit, 13. Flare, 14. Backstays, 15. Bank, 16. Bend, 17. Belay, 18. Becalm, 19. Bosuns Pipe, 20. Gig, 21. Armament, 22. Fetch, 23. Snotty

Down :

1. Broach, 3. Bight, 4. Gangplank, 6. Avast, 9. Barque, 11. Brig, 13. Funnel, 14. Broadside,

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