

An aerial photograph of the Indian aircraft carrier INS Vikrant, a 65,000-tonne locally-built carrier, sailing on the water. The ship's deck is visible with yellow and red markings. Several smaller boats are in the water around it. In the background, a coastal town is visible on a hillside.

# DC Defence.Capital

BUSINESS AND POLITICS OF ARMING INDIA

SEPTEMBER 2021

## Impressively Huge

India's 65,000-tonne locally-built aircraft carrier completes sea trials



# CONTENTS

## India eases business norms for drones, to boost industry

*The new rules, reportedly amended after its first release in Mar. 2021 at the behest of the Prime Minister's Office, will now mean fewer steps for licensing than before and is aimed at unshackling the industry that found itself stifled by a high number of clearances. **P 05***



## Autonomous strong surface ships are coming: Are maritime states prepared?

*Autonomous strong surface ships could revolutionise the shipping industry in the coming decades. **P 07***

## Technology developments in unmanned vehicles for maritime surveillance

*Technology developments in unmanned vehicles are encouraging and these evolutions could change the discourse of activities associated with maritime surveillance. **P 09***



## Overseas military base becoming key to protecting national interest

*Overseas military bases can strategically aid a nation during peacetime as well as during a war. China has mastered the art of establishing such bases around the world. **P 14***

## Rise of Taliban: Beginning of an Indian ordeal

*The rise of Taliban is a game-changing moment for international politics. Certainly, Biden's hasty pull-out from Afghanistan not only enabled the Taliban to capture Afghanistan in no time but also led to global American humiliation. **P 16***



## India navy seeks domestic shipyards for four landing platform docks

*LPDs will undertake Out of Area Contingencies through its inherent capability to transport and deploy forces ashore, ability to arrive quickly in area, and sustain operations at sea for prolonged durations. **P 22***

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## India navy seeks foreign minesweepers for leasing

By N. C. Bipindra

**New Delhi:** In its second effort to procure minesweepers for its navy, India has kick-started the search for a foreign vendor, with sovereign guarantees from their government, for leasing three or four Mine Counter Measure Vessels (MCMVs).

The Ministry of Defence issued a Request for Information (RFI) for the leasing of the MCMVs for the Indian Navy from a foreign government or a shipyard backed and/or funded by a foreign government, which would offer sovereign guarantee through government-to-government (G2G) agreement. The bidders have to respond to the RFI by Oct. 7.

“Mine Counter Measure Vessel is capable to locate, classify and neutralise all types of ground and moored mines, mine laying, channel conditioning, route survey, sanitisation, local naval defence, Search and Rescue, MIO (Maritime Interdiction Operations) and VBSS (Visit Board Search and Seize) Ops,” according to the RFI document released on Aug. 13.

“(The) 3-4 MCMVs are proposed to be procured/leased. The anticipated delivery timelines for the first vessel is maximum of 10 months followed by delivery of subsequent vessels every four months.”

The procurement options that India will exercise, with foreign sovereign guarantees, are as follows:

**Option 1:** Procurement of in service/decommissioned MCMVs which can be retrofitted to Indian Navy requirements; and

**Option 2:** Lease of in service/decommissioned MCMVs, which can be retrofitted to Indian Navy requirements for 10 years extendable to 15 years with an option of acquiring the asset at the end of lease period at a price agreed at the beginning of the lease.

The earlier attempt by the India to obtain foreign technology to build the MCMVs in the state-run Goa Shipyard Limited had to be abandoned in 2018 due to the huge costs of procurement and failed talks with the South Korean Busan-based Kangnam Corporation.

## India signs \$716-million deal for Tejas combat jet engines with GE Aviation

**Bengaluru:** India Aug. 17 signed a \$716-million contract for powering the locally-made Light Combat Aircraft (LCA) ‘Tejas’ with American GE Aviation’s engines. In Indian Rupee terms, the deal is worth Rs 5,375 crore.

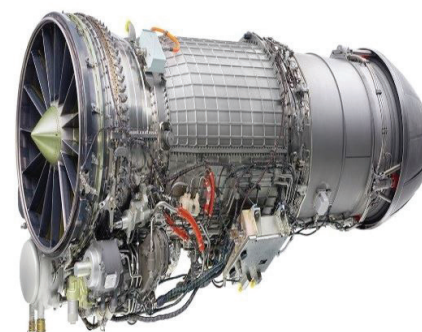
With this order from the state-run Hindustan Aeronautics Limited (HAL) for 99 of the GE F404 engines, the LCA programme has achieved a key milestone in its evolution as a fourth-generation single-engine combat jet for the Indian Air Force (IAF). The contract involves support services from GE Aviation.

“This is largest ever deal and the purchase order placed by HAL for LCA,” said HAL Chairman and Managing Director R. Madhavan, in a company statement.

The company is working closely with GE Aviation for its support to pursue the export potential of LCA and also to supply spares to the global supply chain of GE F404 engines, he added.

GE Aviation vice president for business development and sales Chris Cyr, who joined the contract signing at the HAL corporate office here through a video conferencing platform, said his company has a 16-year-long partnership with HAL and is happy to extend the relationship with this new order.

“The F404 family of engines has proven itself in operations all over the





## NEWS BRIEF

world and we have committed to deliver all 99 engines and support services by 2029," he added.

HAL said the indigenously built 'Tejas' aircraft is one of the best in its class globally, powered by F404-GE-IN20 engines and has been in service since 2004.

"Ordering of the engines marks a

major milestone in the execution of 83 LCA contract with IAF. The co-operation will be further enhanced with the manufacturing of GE F414 engines in India for the upcoming LCA MkII programme," it said.

The highest thrust variant of the F404 family, the F404-GE-IN20 incorporates

GE's latest hot section materials and technologies as well as FADEC for reliable power and outstanding operational characteristics.

The F404 family engines have logged in more than 14 million engine flight hours and has powered 15 different production and prototype aircraft.

## Sunny Guglani to head Airbus Helicopters for India, South Asia

**New Delhi:** European aerospace major Airbus Aug. 16 appointed Sunny Guglani as the head of Airbus Helicopters for India and South Asia. He will be based in New Delhi.

Guglani, 37, will be responsible for growing Airbus' civil, parapublic and defence helicopter business in the region, including aftermarket services.

Guglani has been with the company for more than seven years. In his past roles, he has worked in the Airbus CEO's office and led the A380 marketing team based in Toulouse, France. He previously headed corporate communications for India and South Asia region before moving to Europe.

Guglani holds a degree in Electronics and Communications Engineering from Panjab University, India and a Master's Degree in General Management and Finance from LUISS Guido Carli, Italy.



## Amit Banerjee takes over as BEML chairman

**Bengaluru:** India has appointed Amit Banerjee, a mechanical engineer and an insider, as the chairman and managing director of state-run listed defence company BEML Limited.

Banerjee took over charge of his new appointment of the public sector undertaking under Ministry of Defence on Aug. 27, a BEML statement said.

Banerjee is a graduate in Mechanical Engineering from India Institute of Technology (Benaras Hindu University) at Varanasi. He joined as assistant engineer and has a vast experience of over 37 years in Research and Development and manufacturing functions.

He has worked on the indigenous development of Metro Cars for Delhi, Jaipur, Kolkata, Bangalore and Mumbai, Stainless-Steel EMU and Intermediate Metro Cars, Catenary Maintenance Vehicle and PMS Bridge for Indian Army among others. Prior to assuming the present position, Banerjee was Director (Rail & Metro) at BEML.

After formally taking charge, Banerjee said, "It's a great honour to lead BEML at this juncture. With BEML Team we will achieve our goal towards self-reliance and take BEML to greater heights."





# India eases business norms for drones, to boost industry

**New Delhi:** India Aug. 26 notified a new set of business rules for drones, providing the much-needed booster shot for the struggling unmanned systems industry that has witnessed mushrooming of startups nationwide but lesser orders over the last decade.

The new rules, reportedly amended after its first release in Mar. 2021 at the behest of the Prime Minister's Office, will now mean fewer steps for licensing than before and is aimed at unshackling the industry that found itself stifled by a high number of clearances.

Here is the announcement made on the Press Information Bureau website earlier in the day:

In March 2021, the Ministry of Civil Aviation (MoCA) published the Unmanned Aerial System Rules, 2021.

They were perceived by academia, startups, end-users, and other stakeholders as being restrictive in nature as they involved considerable paperwork, required permissions for every drone flight and very few "free to fly" green zones were available. Based on the feedback, the government has decided to repeal the UAS Rules, 2021 and replace the same with the liberalised Drone Rules, 2021.

Unmanned Aircraft Systems (UAS), commonly known as drones, offer tremendous benefits to almost all sectors of the economy like agriculture, mining, infrastructure, surveillance, emergency response, transportation, geo-spatial mapping, defence, and law enforcement.

Drones can be significant creators

of employment and economic growth due to their reach, versatility, and ease of use, especially in India's remote and inaccessible areas. In view of its traditional strengths in innovation, information technology, frugal engineering and huge domestic demand, India has the potential to be global drone hub by 2030.

## **30 key features of Drone Rules 2021:**

- Built on a premise of trust, self-certification, and non-intrusive monitoring.
- Designed to usher in an era of super-normal growth while balancing safety and security considerations.
- Several approvals abolished: unique authorisation number, unique prototype identification number, certificate of manufacturing and airworthiness, certificate of conformance, certificate of



## DRONE POLICY

maintenance, import clearance, acceptance of existing drones, operator permit, authorisation of R&D organisation, student remote pilot licence, remote pilot instructor authorisation, and drone port authorisation.

- Number of forms reduced from 25 to 5.
- Types of fees reduced from 72 to 4.

- Quantum of fee reduced to nominal levels and delinked with size of drone. For instance, the fee for a remote pilot license fee has been reduced from INR 3000 (for large drone) to INR 100 for all categories of drones; and is valid for 10 years.

- Digital sky platform shall be developed as a user-friendly single-window system. There will be minimal human interface and most permissions will be self-generated.

- Interactive airspace map with green, yellow, and red zones shall be displayed on the digital sky platform within 30 days of publication of these rules.

- No permission required for operating drones in green zones. Green zone means the airspace upto a vertical distance of 400 feet or 120 metre that has not been designated as a red zone or yellow zone in the airspace map; and the airspace upto a vertical distance of 200 feet or 60 metre above the area located between a lateral distance of 8 and 12 kilometre from the perimeter of an operational airport.

- Yellow zone reduced from 45 km to 12 km from the airport perimeter.

- No remote pilot licence required for micro drones (for non-commercial use) and nano drones.

- No requirement for security clearance before issuance of any registration or licence.

- No requirement of Type Certificate, unique identification number and remote pilot licence by R&D entities operating drones in own or rented premises, located in a green zone.

- No restriction on foreign ownership in Indian drone companies.

**Import of drones to be regulated by DGFT.**

- Requirement of import clearance from DGCA abolished.

- Coverage of drones under Drone



Rules, 2021 increased from 300 kg to 500 kg. This will cover drone taxis also.

- DGCA shall prescribe drone training requirements, oversee drone schools and provide pilot licences online.

- Remote pilot licence to be issued by DGCA within 15 days of pilot receiving the remote pilot certificate from the authorised drone school through the digital sky platform.

- Testing of drones for issuance of Type Certificate to be carried out by Quality Council of India or authorised testing entities.

- Type Certificate required only when a drone is to be operated in India. Importing and manufacturing drones purely for exports are exempt from type certification and unique identification number.

- Nano and model drones (made for research or recreation purposes) are exempt from type certification.

- Manufacturers and importers may generate their drones' unique identification number on the digital sky platform through the self-certification route.

- Easier process specified for transfer and deregistration of drones through

the digital sky platform.

- Drones present in India on or before 30 Nov 2021 will be issued a unique identification number through the digital sky platform provided, they have a DAN, a GST-paid invoice and are part of the list of DGCA-approved drones.

- Standard operating procedures (SOP) and training procedure manuals (TPM) will be prescribed by DGCA on the digital sky platform for self-monitoring by users. No approvals required unless there is a significant departure from the prescribed procedures.

- Maximum penalty for violations reduced to Rs 100,000.

- Safety and security features like 'No permission – no takeoff' (NPNT), real-time tracking beacon, geo-fencing etc. to be notified in future. A six-month lead time will be provided to the industry for compliance.

- Drone corridors will be developed for cargo deliveries.

- Drone promotion council to be set up by Government with participation from academia, startups and other stakeholders to facilitate a growth-oriented regulatory regime.



# Autonomous strong surface ships are coming: Are maritime states prepared?

**By Dr Vijay Sakhuja**

**E**arlier this year in May, the Maritime Safety Committee (MSC) of the International Maritime Organization (IMO) announced the completion of the ‘regulatory scoping exercise’ concerning Maritime Autonomous Surface Ships (MASS).

It involved MASS terminology and definitions, and discussions on relevant ship safety treaties concerning such vessels. Furthermore, the scoping exercise also delved into issues of the degree of autonomy for MASS.

For instance, under Degree One of autonomy, ships will have automated processes and decision support but will carry crew onboard; remotely controlled ships with a crew onboard are in Degree Two; under Degree Three, there will be no seafarers on board and the vessel will be remotely controlled; and finally fully autonomous ship are classified under Degree Four.

It is now widely acknowledged that autonomous vessels will soon be

a common sight at sea and transform shipping operations whose effects could be felt deep into the heartland as far as where the production supply chains end or start. There will also be simultaneous developments in the port sector and industry experts believe that only Smart Ports will survive.

Technological developments related to maritime technologies for autonomous vessels have made big headway and several MASS-related projects are underway. Among these the largest existing autonomous cargo vessel, the Yara Birkeland (3000 dwt) is operating in a fully crewed test phase.

The vessel is a product of the Kongsberg Maritime, a Norwegian technology enterprise, and is an autonomous electric-powered vessel capable of carrying 120 shipping containers.

In China, the world’s top shipbuilding nation, production of MASS has begun. In 2020, Qingdao shipyard announced steel cutting for its first auton-

omous containership named Zhi Fei.

This 5,000 tons vessel is bigger than Yara Birkeland and can carry up to 300 TEUs and is being fitted with intelligent navigation systems. It would have electric propulsion which would reduce noise and its advanced systems help to reduce NOx, SOx, and CO2 gasses.

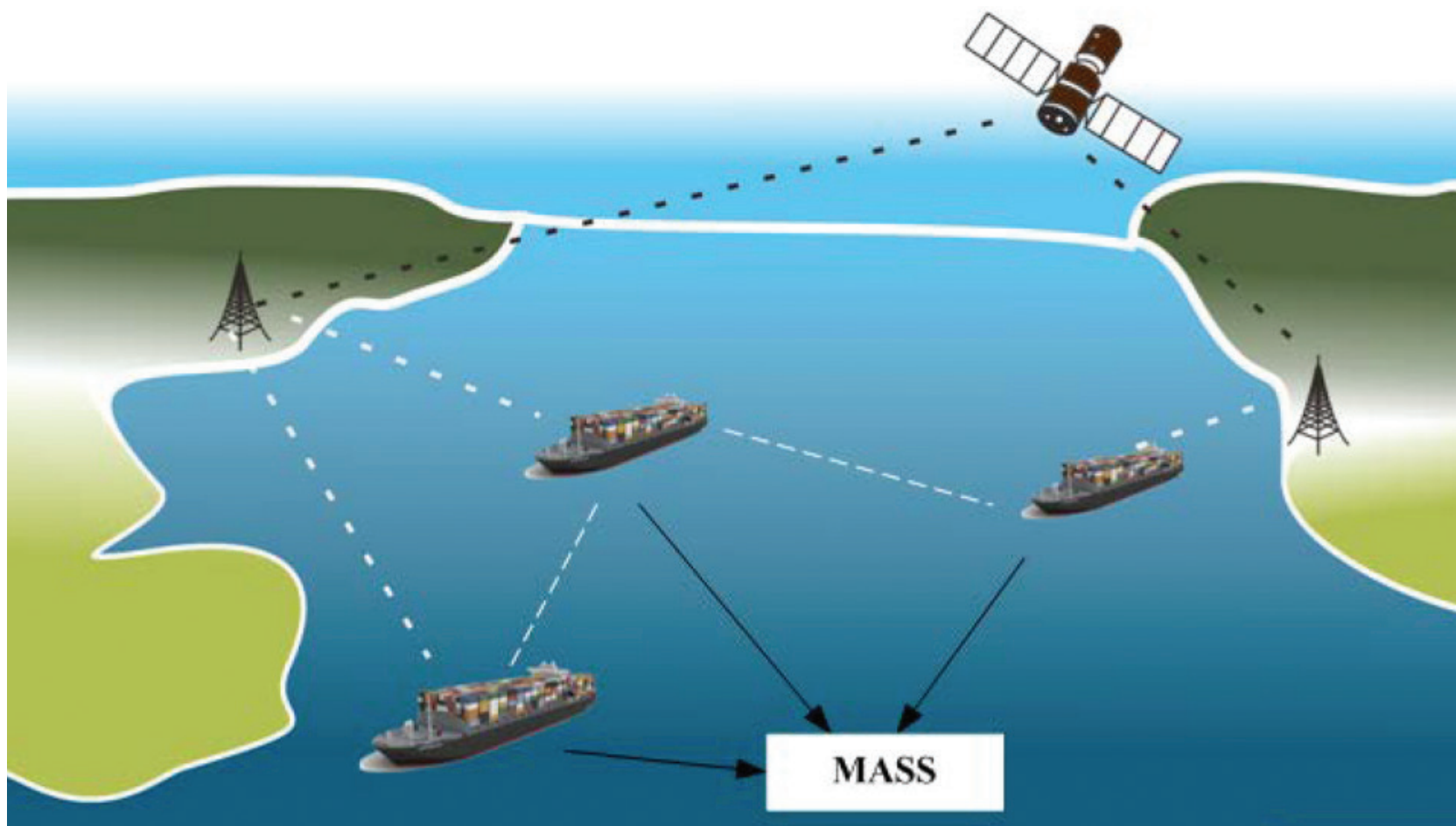
Interestingly, SpaceX, Elon Musk’s commercial space launch company can be credited with the first autonomous/remotely controlled vessel. Named ‘A Shortfall of Gravitas’ or popularly called ASOG, a 10,000 dwt barge has a 300-foot deck.

It is equipped with four thruster pods which help it to hold station and recover SpaceX’s booster rocket on its return splash into the sea. It is perhaps the largest fully unmanned commercial vessel in operation today. SpaceX owns two similar DP-capable barges but smaller (3,000 dwt and 260 feet long) and is designed for autonomous





## MILITARY TECHNOLOGY



and unmanned.

The MASS variety is in its infancy and can be expected to improve in the coming times. Some of the major players in the autonomous ships market are General Electric, DNV GL, Rolls-Royce Holding PLC, Kongsberg Gruppen AS, NYK Line, Mitsui E&S Holdings Co Ltd, Wartsila Corporation, DSME Co., Ltd., Vigor Industrial LLC., and Praxis Automation Technology B.V.

While these are very promising MASS technology investments, there are challenges too. Shipping company owners who are already investing in green technologies for their fleet of ships fear a heightened threat of cyber-attack and data thefts while operating MASS and are expected to increase as more autonomous ships enter into operations.

At another level, the MASS would overcome to some extent ship accidents that in large proportion are attributed to human errors. This would

entail the education and training of the ship's crew for the adoption and assimilation of new technologies. They must develop specialist skills for MASS operations both at sea and in ports. It would also involve significant investments in training infrastructure, bridging the digital education divide, and research for this new technological age.

Perhaps the biggest risk for maritime nations is not being ready for the coming wave of MASS which means being left behind in the highly globalized world that sees nearly 90 per cent of trade carried onboard ships.

The China-based Tencent Research Institute has estimated that there are roughly 300,000 AI researchers and practitioners worldwide, with market demand for millions of roles. The international Industry 4.0 technology community is looking towards India and China, the largest non-US supplier of technology professionals and international students in Artificial Intelligence-related fields.

Notwithstanding these challenges, the techno-optimism concerning MASS is quite high and the global autonomous ships market is expected to grow from \$5.68 billion in 2020 to \$6.46 billion in 2021 at a compound annual growth rate (CAGR) of 13.7 per cent.

In this context, India, a leading supplier of trained human resources for the maritime industry as also as emerging technologies such as Industry 4.0, would need to invest in technology and human resource development at its maritime universities and technology education and research institutions.

*(The writer is a former Director, National Maritime Foundation, New Delhi, Co-founder and Trustee of Peninsula Foundation, Distinguished Fellow at Center for Public Policy Research, Visiting and Senior Fellow, at Cambodian Institute for Cooperation and Peace. Published in arrangement with Defence Research and Studies. The article is available on dras.in)*



# Technology developments in unmanned vehicles for maritime surveillance

**By Commodore Naresh Kumar**

**M**aritime Domain Awareness (MDA) is extremely challenging for the Indian Navy since the Indian Ocean Region (IOR) accounts for one of the busiest maritime traffic regions of the world.

The IOR sea lines are critical in bringing prosperity to many nations in the region. With the growth of the Chinese Navy, the presence of Chinese submarines and Underwater Unmanned Vehicles (UUV) have increased in the South China Sea and the Indian Ocean.

Hence, apart from maritime terrorism, piracy, trafficking, illegal fishing, maritime disaster and rescue operations, the Indian Navy and the Coast Guard are continuously engaged in monitoring and controlling the security and associated domains in the IOR.

Intelligence, Surveillance, and Reconnaissance (ISR) or Search and Rescue (SAR) operations have undergone a sea change with network-centric technologies capable of generating real-time situational awareness.

Indian Navy is abreast with similar technology induction in many domains. The Navy had inducted the ship command and control system in the mid-eighties and developed an indigenous data link akin to Link 11 for networking warships and aircraft for Command, Control, Communications, and Information (C3I) operations.

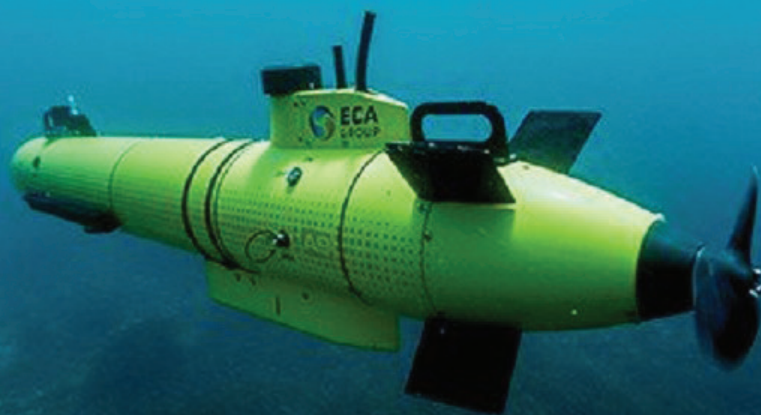
The navy has also acquired Unmanned Aerial Vehicles (UAV)s in the mid-nineties from Israel for long-range surveillance. The acquisition of P8-I from the United States

further enhanced the capabilities for Anti-Submarine Warfare (ASW) and long-range surveillance.

The navy also possess its own communication and surveillance satellite from Indian Space Research Organisation (ISRO), which allowed them to get connected with assets operating at high seas.

Indian Navy and Coast Guard have also set up a coastal surveillance radar and optronics system chain Information Management and Analysis Centre (IMAC) at Gurugram (Haryana).

It is the nodal centre of the National Command Control Communications and Intelligence Network (NC3I Network). It tracks vessels on the high seas and gets data from the coastal radars, while shipping agreements, Automatic Identification





# World Large Autonomous Underwater Vehicles (AUVs)

(Approximate Scale)

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COVERT SHORES  
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LDUUV-INP  
(Innovative Naval Prototype)  
United States, 2015



klavesin-2P-PM (Harpichord-P-PM)  
Russia, 2016



HSU-001  
China, 2019



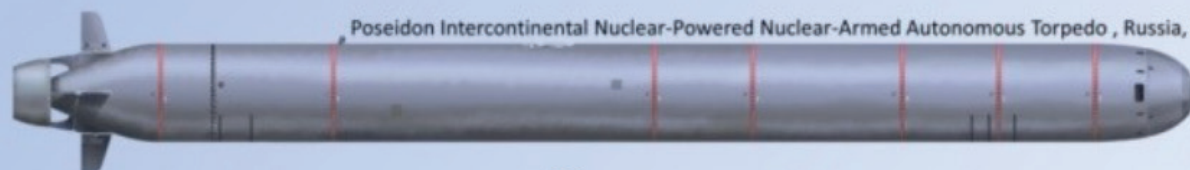
ASWUUV  
(Anti-Submarine Warfare UUV)  
South Korea, 2020s



Garmoniya-GUIDE  
Russia, 2020s



Orca XLUUV, United States, 2020s



Poseidon Intercontinental Nuclear-Powered Nuclear-Armed Autonomous Torpedo, Russia, 2020s

Systems (AIS) transponders fitted on merchant ships, air, and traffic management systems. Its functions are in line with the principles listed under 'Security and Growth of All in the Region (SAGAR)'.

The communication networks, navigational guidance and control, sensors and unmanned systems are changing the complete ISR space. Satellites or airborne surveillance systems with Synthetic Aperture Radar (SAR), Optics and Closed-Circuit Television (CCTV) systems, Laser and Infra-Red sensors and trackers can send real-time pictures to the command located on-board ships or shore stations.

The Indian Navy recently acquired

two UAVs from the United States for surveillance during the Ladakh conflict and is in the process of acquiring 30 more Drones for ASW surveillance. These imports have become necessary to fill the operational capability gaps since indigenous systems are under development by the Defence Research and Development Organisation (DRDO).

## Underwater Unmanned Vehicles

While there is a large proliferation of UAVs for aerial operations including weaponised drones with smart missiles and ammunitions, the underwater domain has been challenging due to the limitations in underwater

acoustic communication.

An Autonomous Underwater Vehicle (AUV) or Unmanned Undersea Vehicles (UUV) is a robot that travels underwater and can function without tethers, cables, or remote control. AUVs are now increasingly used to carry out underwater tasks, especially hazardous ones. Few applications are given below:-

- Gather data from underwater instruments:
- In the oil and gas industry, AUVs are used to make maps of the seafloor before subsea infrastructure is built and for various maintenance tasks; and
- In defence, AUVs are used in surveillance, intelligence gathering, and



mine warfare.

Since AUVs do not have a tether to the deploying platform, a reliable wireless communications link is critical. This communications link is used to monitor the AUV as well as to control them.

The US, France, Canada, the UK, and China have developed underwater unmanned vehicles for underwater hull inspection, mining and mine clearance, underwater mapping, oceanography to measure environmental parameters of temperature and current.

## UUV Swarms

Swarms can be made up of homogeneous or heterogeneous UUVs, unlike typical manned crafts where sensors, weapons and decision-making authority are collocated.

UUVs can split these functions up as required. Where some UUVs are the sensor platforms, and some can be made as weapon platforms. The decision making is distributed and collaborative.

The primary sensors for these UUVs can be a variety of active and passive sonar coupled with cameras for close-knit operations. There are several sonar techniques for single vehicles, but when multiple vehicles are leveraged in the swarm environment, the bi-static method becomes very useful.

When one UUV pings and the other can be in listening mode. The active UUV that pings could navigate in a pre-planned manner to illuminate the area under surveillance. Several sonar strategies can be developed for swarm detection and engagement operations.

The swarm can be deployed from a ship, submarine or underwater docking stations and can work as a team to acquire the target then determines the tactics to destroy the target using one or more of the deployed UUVs.

The threat environment has moved from the "blue water" to "brown water", or littoral regions, placing emphasis on power projection, force protection and expeditionary operations in littoral areas.

Rogue nations and non-state actors could start the next level of conflict by using UUVs to attack commercial shipping, oil platforms, undersea communication cables, offshore wind turbine power cables, undersea oil, and gas pipelines or other defenceless targets.

Nations would establish underwater UUV docking stations to thwart these types of attacks. These stations could also be leveraged to address the threat of manned attack submarines from rogue nations or other illegal commercial activities.

Diesel-electric and fuel cell manned submarines are stealthy and could become a threat to coastal installations. Underwater UUV bases/stations can counter them by continuous and routine underwater surveillance.

Technology Challenges for Design and Development of UUV

- Power Systems and Battery Technology

While AUVs could be guided through a tether cable and also supplied power from a mothership, UUVs require Fuel Cells and Lithium Battery Technology to power for the intended operations. DRDO is working on both these technologies for manned submarines and the same could be exploited for the compact size lightweight UUVs.

- Navigational and Profile Mapping

Similarly, Ring laser Gyros based Inertial Navigation Systems may be used for underwater navigation and GPS could be used for positioning while surfacing. Drifting is a concern when UUV remains underwater for a longer duration. Geographic Information System (GIS) mapping and fixing can also be used to precisely locate the UUV.

- Sensor Technologies

Precise navigational sonars, high power illumination system, high-resolution cameras, optical and IR sensors, laser communication for short-range high data rate links may be instituted for surveillance. Propulsion systems to surface and facilitate the transmission of recorded data to the mother ships or shore command stations through satellite links may be

instituted since underwater acoustic links have limitations.

- Artificial Intelligence

AI shall be extensively used in navigation, target detection, tracking and other command and control functions. The Navy need to identify these requirements and collaborate with centres of excellence for AI to find solutions for underwater domain technologies.

- Design and Construction Technology

Indian Navy has its own submarine design centre, which can take up the task of design and construction of AUVs and UUV. Design using Digital Twins should be employed for faster solutions for design and prototyping, leaving little scope for error.

## Conclusion

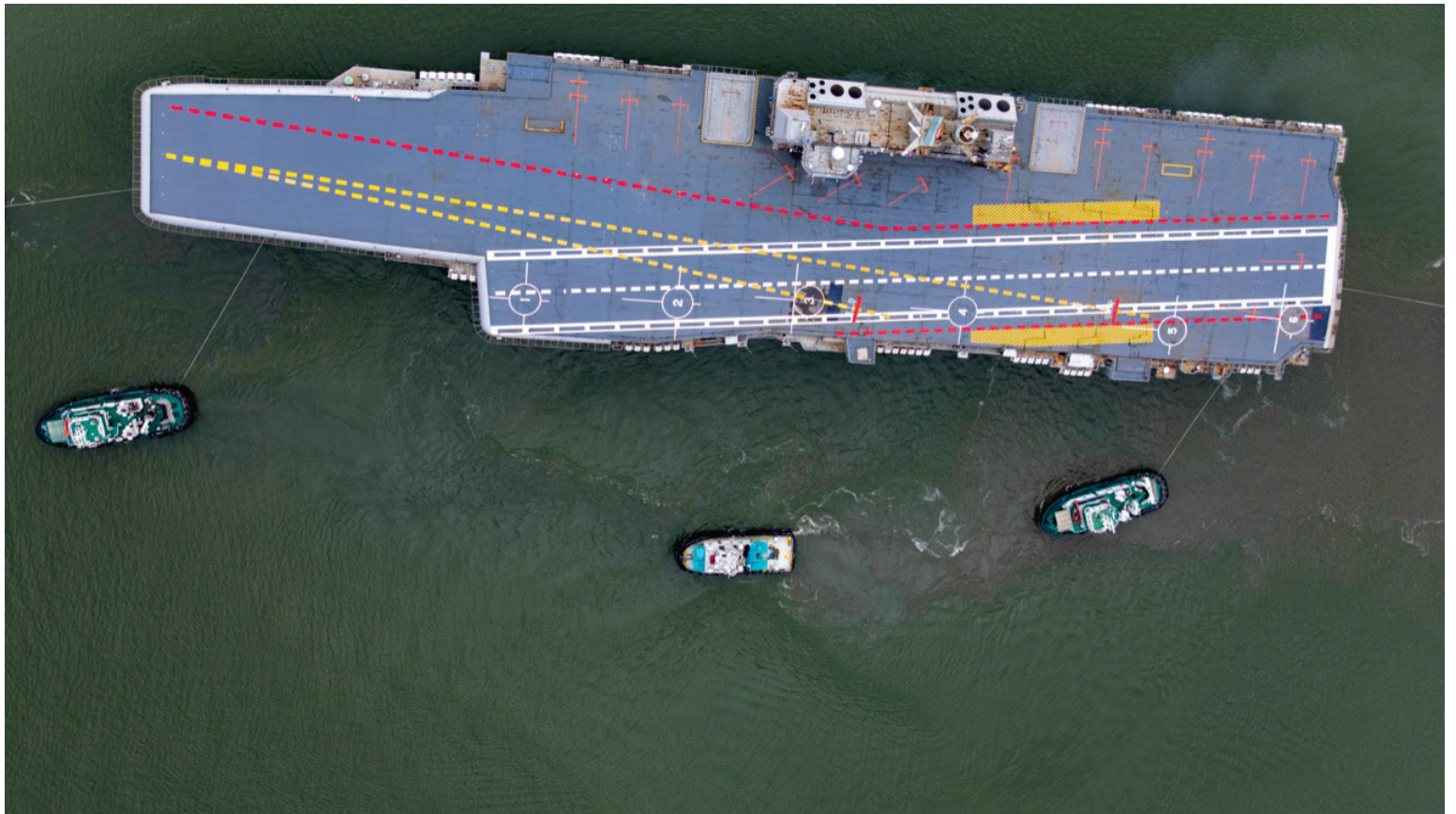
The production of UAVs, AUV and UUV systems is increasing exponentially. US and China are leading in the development of unmanned, remote-controlled systems for surveillance and tracking.

Weaponised platforms with smart technology pose a very serious threat in future warfare. Since India commands a large coastal area and the Indian Navy being a dominant force in the IOR, we need to accelerate our pace in developing UUV technologies and systems.

DRDO has initiated many projects in collaboration with private industry and academia to catch up with the research in AUV critical technologies. ISRO deals with high-end technologies in guidance and control, space surveillance and miniaturisation may also be consulted for support. Imports from the US as planned should be expedited to counter the immediate threat.

*(The writer served the Indian Navy for 33 years in the Electrical Engineering Branch. He is M Tech from IIT Delhi in Underwater Electronics and worked in DRDO for development of a Sonar System. Published in arrangement with Defence Research and Studies. The article is available on dras.in)*





## INDIA'S LOCALLY-MADE AIRCRAFT CARRIER SAILS OUT FOR FIRST SEA TRIALS





## VISUAL IMPACT







# Overseas military base becoming key to protecting national interest

**By Paranjay Sharma**

**T**he use of foreign military bases and attempts by States to obtain access to other vital locations beyond their borders have formed an integral part of their national interests.

In today's world, overseas military sites are increasingly being used as staging points for non-combat and combat activities. A military base is a facility established or operated by the military or one of its branches that shelters military equipment and personnel and facilitates training and operations to pursue a country's national security objectives.

More than 1,000 military bases and installations exist worldwide; most of these are operated by the United States, which has a military presence in over several dozen countries.

The military outposts in foreign nations are governed by agreements signed between the host nation and the base nation. The agreements are contractual in nature and, therefore, time bound.

Under the current international legislation, the use of force is strictly limited. As a result, foreign military sites are increasingly being used for peaceful purposes. Establishing military bases abroad allows a government to project

soft power, for example, by conducting expeditionary warfare and thereby influencing critical events in other countries. They can be utilised as staging locations or logistical, communications, and intelligence assistance, depending on their size and infrastructure.

## **Strategic Purpose of Establishing Military Footprints in Foreign Nations**

Strategic interests back the use of foreign military bases by nations. Historically, great powers constructed foreign military bases for essentially imperial purposes—to acquire additional territory, colonise new lands, control distant resources for the material benefit of the state, enable future conquest, and out-compete other empires.

Today, such conquests by great powers have declined, partly because of the ascendancy of post-World War II norms of territorial integrity and self-determination.

Today's forward-deployed posture is motivated by mainly three key strategic justifications:

- Serving as a backbone of the military apparatus

Military bases serve as a projection

of muscle power. They provide the logistical infrastructure required for rapid reaction to any significant military contingency or military manoeuvres. Such bases also host several active personnel's and weaponry, including nuclear arms. Some foreign facilities serve as an information gathering hub and reconnaissance operations.

- To deter potential threats and reassure allies

Military bases serve as a tangible indicator of a nation's capability to fight and deter the potential threats by aggressors. The goal of forward deployment is to deter adversaries while also assuring and making allies feel safer.

- Protecting their national interests

The establishment of a military presence is often motivated by the desire to safeguard one's own interests and serve as a force for world peace. The domestic laws of several nations allow them to employ all necessary measures for national defense, including military installations abroad to protect national interests from external threats.

## **Overseas Bases in Indian Strategy**

As India's economy and global influ-



ence rise, there is a growing clamour for India to take on greater international obligations for the sake of worldwide prosperity and peace.

The logic of India's quest for foreign military bases is very similar to that of other nations. The security concerns are no longer limited to its borders, and it requires a forward military presence in the Indo-Pacific to protect its diverse interests.

In recent years, India has sought to further develop its military access to Indo-Pacific and Central Asia to secure its economic and national interests. India cannot afford to leave the Indian Ocean and other strategic arenas open to piracy.

It should actively pursue diplomatic alliances, provide aid and assistance to the various players in the region, gain strategic ground, and use the relationship when the need arises.

To thwart such threats, India is ramping up its assets and infrastructure. Some of the key Indian military installations are:

- **Tajikistan** – The Farkhor Airforce base was the first overseas base of India, operated by the Indian Air Force and the Tajik Air Force. This airbase occupies a unique strategic position because of its placement above Pakistan-occupied Kashmir and Afghanistan. It provides India with a strategic power projection point in Central Asia.

- **Madagascar and Seychelles** – India maintains two listening and radar stations in Madagascar and Seychelles. The significance of these two bases lies in their geographical location. Many of the sea routes around these countries are used by Indian cargo ships and other global commercial businesses, which helps track shipping movements in the Indian Ocean and listen in on maritime communications. Furthermore, these active bases help India to counter China's 'String of Pearls' strategy.

- **Mauritius** – India is constructing a military installation on North Agalega Island. This island, which is part of the India-Mauritius Military Cooperation, was leased to the Indian Army to develop strategic assets. This outpost is located almost in the middle of the Indian Ocean, at a very strategic location.



This base will serve as an intelligence outpost for New Delhi to monitor and respond to threats emerging in the Indo-Pacific region.

## Foreseeable Challenges to Military Installations Abroad

Overseas military bases are a part of today's foreign policy debates. As the circumstances of international politics have changed in the post-Cold War years, and as innovations in technology have both shortened travel times and made in-place forces more vulnerable, the strategic and operational utility of overseas bases receive scrutiny.

Some of the challenges in maintaining permanent peacetime military presence abroad are:

- **Exaggerated deterrence value** – Foreign military bases do not minimise external threats to homeland security. In fact, it can at times inspire blowback in the form of terrorism. Moreover, the development of incredibly precise long-range ballistic missiles, as well as advanced satellite-based sensors, puts foreign military installations vulnerable to asymmetric strikes that are difficult to defend against.

- **Resentment among the local communities** – Local resentment over the presence of foreign military bases can be extreme. Regime shift in a host nation can also factor in the resentment from regional communities.

- **High Maintenance Costs** – The financial burden on governments to maintain a global military base presence is exceedingly difficult to calculate. Logistical operations and infrastructure maintenance costs are prohibitively expensive.

nances costs are prohibitively expensive.

- **Risk of entangling in pointless wars** – Entanglement is another risk exacerbated by the attempt to reassure allies with overseas bases. There is a possibility that the base nation may stumble into conflicts because of the assurance, commitments, and capabilities presented by a forward military installation.

## Conclusion

Overseas military bases are no longer associated with hegemony or aggressiveness in today's world. They are viewed from the perspective of assuring peace and global security.

Great power logic, among other variables, always factors in the building of overseas outposts. Overseas outposts are meant to deter conflict and handle far-flung issues through deterrence and reassurance.

Still, quite recently, they are receiving criticism and scrutiny because of the out-of-date foreign policy goals and traditional military power model. The military base building must involve shaping an international environment that reckons crucial issues concerning the reasons behind the base establishment.

*(The writer a Research Associate under training at DRaS. He is law student who has an interest in the areas of National Security and Strategic Studies, Counter-Terrorism Issues, Geopolitical Analysis, International Relations, and Technology Laws. Published in arrangement with Defence Research and Studies. The article is available on dras.in)*

# Rise of Taliban: Beginning of an Indian ordeal

By Dr Jagmeet Bawa

**T**he demise of democratically elected government in Afghanistan and the rise of theocratic Taliban is a major national security challenge and a foreign policy setback for India.

In the wake of it, the China-Pakistan nexus against India will be bolstered. Afghanistan has a unique strategic location, and it is at the crossroads of South Asian, Central Asian, and South-West Asian Regions.

The rise of Taliban is a game-changing moment for international politics. Certainly, Biden's hasty pull-out from Afghanistan not only enabled the Taliban to capture Afghanistan in no time but also led to global American humiliation.

Most surprisingly, the United States was not having any domestic or strategic necessity for the withdrawal of its remaining soldiers. This American blunder is going to have long lasting implications for the United States, India, and the world.

The United States' 20-year war against terror in Afghanistan is the longest it has fought, and America has faced defeat once again after the Vietnam war. But Vietnam war had its implications for America and South-East Asia alone.

But the recent defeat in Afghanistan for the US will have global implications and certainly, the present victory of Taliban is a booster shot for the

global Jihadi forces.

## The saga of United States' infidelity

United States started writing the script of Taliban rise from the Doha Agreement, where it gave equal status







to democratically elected Afghan government and the Taliban.

The world knows about the Doha Agreement, but no one knows if America has any deal with the Taliban beyond Doha Agreement. Even American Administration forced the Afghan government to release five thousand jailed Taliban terrorists. America ditched the Afghan fighters in the same way it dumped the Kurdish fighters in Syria.

Hamid Karzai tried his level best to delay the signing of Bilateral Security Agreement, in the last months of his tenure. But in Sep. 2014 America managed to get through this agreement by Ashraf Ghani and in Dec. 2014 NATO forces halted their all combatting operations and reduced the deployment of forces to 13,000.

Since then, Afghani forces were on the fore front and NATO forces has a secondary role to play. After 2014 less than 100 NATO soldiers lost their lives comparing to more than 45,000 of Afghan security forces.

Moreover, NATO soldiers have not lost their lives in the direct gunfights,

almost all the casualties were accidental. That's why experts say that there is no need to pull-out the remaining 2,500 soldiers from Afghanistan.

The presence of NATO forces means a lot for Taliban and the entire region, and their departure paved the way for Taliban to capture the entire country swiftly.

### **An Opportunist Nexus in the Making**

A coalition of regional powers such as China, Russia, and Pakistan have already started its efforts to fill the geopolitical power vacuum in Afghanistan, created by the US withdrawal.

Primarily, China seems to be the real beneficiary of the situation. China wants to use Afghanistan for its Belt and Road Initiative (BRI) and has its eye on the mineral wealth of Afghanistan, which is worth \$2 trillion.

China is all set to increase its footprints in Afghanistan and China will materialise its plans through Pakistan, as it has only 76 km of common border with Afghanistan, and that too, is almost impossible hilly topography.

Apart from fulfilling its economic interests, China has an opportunity to encompass India strategically and geographically with its like-minded anti-India forces. This situation will enhance China's bargaining capacity while discussing the Line of Actual Control issues with India.

Even Russia has wasted no time to recapture its old stance in the region. But China is dominating the centre stage and Russia is forced to settle down as a junior partner to the dragon, as it occurred in Russia's own backyard, the Central Asia.

### **Taliban Led Kabul: An Ordeal for India**

Experts are predicting that after the Afghani nationals, India is going to be the second biggest loser of American betrayal, after the Afghanistan government. International presence in the region and active role played by the Financial Action Task Force helped in putting an effective check on the terrorists' activities in the region and India was the only beneficiary of this pleasant situation.

Now, with Taliban in the driving seat, there is no denial of the fact that there will be rise in terrorist activities and India will be the first and foremost target.

India has played a key role in Afghanistan's rebuilding and has invested more than \$3 billion in over 400 infrastructure and strategic projects in Afghanistan. These projects earned India enough of good will and India is the most loved country among the Afghans.

India has high hopes from Afghanistan and looked at it as a gateway to Central Asian Republics. India has invested \$8 billion on the Chabahar port in Iran with an ambition to approach Central Asian Region through Iran and Afghanistan.

### **Indian legacy of the diplomatic blunders**

This time, India seems very tactful and cautious while taking any decision, before and after the fall of Kabul.



## NEIGHBOURHOOD WATCH

India needs to learn from its previous blunders, which hampered its ties with friendly nations badly.

In the early 1990s, after the disintegration of the USSR, Afghan President Mohammad Najibullah Ahmadzai's last hope was India. Even Russia wanted India to take the driving seat, but India failed to address Najibullah's call for providing arms and money.

It was a time when Indian economy was in a very bad shape and under American pressure, India decided not to provide any help to Najibullah. History has seen the fall of Najibullah, and which gave birth to the rise of Taliban and India has been criticised for playing its part in the rise of Taliban.

Though India provided shelter to Najibullah's wife and daughters but could not save him from the execution. Apart from American pressure, India did not want to offend Mujaheddins.

But Afghan rebels has never showed any decency to India in history and went on to provide its mountains to Pakistan to train anti-India terrorists and facilitating the IC814 flight hijacking in Dec. 1998.

In 2019, In another similar incident, America levied sanctions on Iran unilaterally and India yielded to these sanctions and stopped buying oil from Iran. Iran offered the same oil to China on huge discounts.

China took no time in cashing on the discounted oil and successfully managed to bring Iran to its own camp. Again, under American pressure, India not only lost the much-needed cheaper oil but also an ally, which is India's only passage to Afghanistan and Central Asia.

It was, thereafter, Iran started ignoring India bluntly and dropped India from the 628-km long Chabahar-Zahedan railway project. Iran blamed India for the delay in the projects and scarcity of funds, but Iran took this extreme step after confirming a colossal 25-year \$400 billion strategic partnership with China.

Even critics are not happy on India's acceptance of the US-Taliban peace

deal in Doha. Though India made it clear right in the beginning that it is in favour of "Afghan led, Afghan owned and Afghan controlled" peace process, but accepted the deal, which clearly was against Indian interests.

Through this deal, Taliban promised not to attack America and its allies. India is now left out of 'Non-attacking Zone' because India is not an ally of America, but only a strategic partner.

In Jul. 2021, the US formed a quadrilateral diplomatic platform along with Uzbekistan, Afghanistan, and Pakistan, with the objective of increasing regional connectivity. USA came up with this platform to counter the Chinese BRI.

But in the changed situation, China will be the new regional leader and remaining all three partners will not take any risk to be a partner of America, at least in this region.

### India's Immediate Priority in the Transitional Phase

India has done well in the first phase, by carrying out its evacuation process from Afghanistan. It has rescued most of its nationals from Kabul in the initial few days and now it is trying to rescue persecuted Hindu and Sikhs from Kabul along with its own citizens.



New Delhi has started an online service to apply for Indian citizenship and on day one, more than 1,000 people have applied for Indian citizenship. India had vacated its Herat and Jalalabad missions in Apr. 2020 due







to COVID-19 pandemic. Indian consulates in Mazar and Kandahar were closed in Jul. 2021 and only Kabul office was functional.

India needs to address the safety issues of those Afghans and other na-

tionals, who were working with India on different developmental projects in Afghanistan.

India should create international public opinion for the safety of foreign nationals, minority groups, and even

the local citizens in Afghanistan, by using its position as a non-permanent member of the UN Security Council.

India needs to make the best use of its membership to Taliban Sanctions Committee of the UNSC to bring out the plight of common people, during these turbulent times under Taliban in Afghanistan.

India has no other way to stretch its diplomatic outreach to counter the Pakistani aggression after the rise of Taliban before it turns to Kashmir to destabilise the situation. It is evident from the history that Kabul under Taliban contributed to the rise of militancy in Kashmir.

India has very high hopes from Central Asia, and it has showed its desires through the Connect Central Asia Policy. Expecting too much from a region without a geographical proximity becomes very tough and in such a situation role of Afghanistan and Iran becomes very important.

But, if India could not succeed when Iran was trusting India blindly and Afghanistan was having a democratically elected India-inclined government, it will be close to impossible to achieve the objectives of Connect Central Asia Policy when Iran has opted to enter a long time, high investment pact with China and Taliban leads the government in Afghanistan.

Since 2020, New Delhi is having tough times at Line of Actual Control with China, and it has a long history of bitter trials at Line of Control with Pakistan. Having a hostile leadership in Kabul is going to add sleepless nights for the Indian foreign policy makers and leave them with very few strategic options.

The biggest worry for India is now terrorist groups like Lashkar-e-Taiba and Jaish-e-Mohammad, having their training camps on Pakistan-Afghanistan border. Not only these terrorist groups, but Pakistan Army and its Inter-Service Intelligence will have an advantage in Afghanistan.

Islamic groups will try their best to use this opportunity for Islamic radicalisation around Indian borders. Last





## NEIGHBOURHOOD WATCH

time, when the USSR quit Afghanistan, the world saw the rise of Islamic militant groups in Afghanistan and those groups created problems for the entire region and operated trans-regional terrorist activities.

### Remaining Indian Options

India has always favoured a democratically elected government in Afghanistan and till now India has not shown any signs to recognise the Taliban regime directly or indirectly.

Even in case India wants to coordinate with Taliban, the other regional powers have left very less scope for India in Kabul. Rather, they don't want Indian footprints in Kabul in any form.

New Delhi can continue its support to Afghan National Defence and Security Force (ANDSF). Taliban is aware of this Indian option, and one of their spokesmen warned India about it.

The best option is to wait for some time and let the dust settle down, before taking any concrete step. No doubt, this will decrease India's status in the region, but Pakistan and China are working hard to leave India without options.

This was visible during the 'Regional Talks' in Doha, where India was invited by Qatar and Indian delegation felt neglected. Even India has not been invited for Troika-Plus talks, which was led by Russia and included US, China, and Pakistan.

At the same time, Moscow has not given the weightage to New Delhi, surely because of latter's closeness to Washington. Russia feels that India can play as an American proxy in the Kabul.

India needs to maintain a stand of strategic autonomy and should immediately explore to engage with Russia and try to recapture the trust of Iran. These are the only options that India has.

Problem for India is that almost all other stakeholders are very receptive towards Taliban, including the US. The US administration has given legitimacy to the Taliban by inviting it to the talks.

In the next few months, India must pay the price for its proximity with the



US. Americans have lost a front in Kabul, but not the war. It has a very big global alliance base and India can still rope in the US and its allies, especially in the Indo-Pacific to counter China.

Moreover, this is a time for America to strengthen its partner, as Taliban's growth can escalate the problem of international terrorism. Taliban, an ISI proxy, is going to feed the global terror network and there are number of terror outfits, which are devoured by both ISI and Taliban.

No wonder, if we see Afghanistan becoming a haven for terrorists, it will be a serious threat for humans. Taliban upsurge will provide an opportunity to the terrorist groups to strengthen

their support base, recruit and developing a global terror network.

Just like the western liberal world, India has one more hope from Amrullah Saleh, who declared himself the 'Legitimate Caretaker President' of Afghanistan. He is holding tight his Panjshir territories, a landscape which Taliban could never claim.

But, even Saleh has very dim chances, as all the old allies -- Moscow, Washington, Tehran, and New Delhi -- have said nothing confirmatory yet. Vladimir Putin, during his Germany visit, indirectly showed his solidarity with the Taliban.

In the meantime, Russian foreign minister said that Taliban is not con-





trolling the entire Afghanistan territory and gave an indication to other old allies of Northern Alliance. But Northern Alliance could not hold its fortress long without external support.

India needs to bring the real facts of Kabul invasion of 'Pakistan-Taliban' out to the global spotlight. A group of media in the West called it, 'Pakistan's Afghan invasion in the guise of Taliban'. Taliban is not only Pakistan's creation but is also trained by them to be deadly. Pakistan still controls the Taliban, which is being directed by Pakistan's army and ISI.

Media reports claimed army vehicles along with military equipment, moving back into Pakistan from Af-

ghanistan, mission completed, on Aug. 15. Pakistan has mastery in double crossing.

In 2011, when American army raided Osama bin Laden's residence in Pakistan, one of America's stealth helicopters crashed. Before leaving Pakistani territory, the US Army soldiers destroyed the crashed chopper. But its tail remained intact, and ISI immediately invited the Chinese expert to examine the wreckage of the stealth helicopter.

Pakistan cannot run away from charges of foul play, which it had played against the democratically elected Afghan government. A single helicopter attracted a lot of media re-

ports, but now one can imagine the seriousness of the situation, when Taliban has in its possession the entire US weaponry, vehicles, night vision devices, even helicopters and much more.

### **Global Concerns of Taliban Soar**

After taking control of Kabul, Taliban spokesman said the group will not permit opium farming. But it is difficult to believe this claim, as a major chunk of Taliban's income comes from the drug industry.

Almost 90 per cent of world's heroin is produced in the Taliban controlled areas. According to reports, Taliban is controlling the drug producing factories. It now has even the state machinery to back its operations. A bigger geographical landscape will help Taliban to increase the drug production and its supply to all the corners of the world. The world community must keep a vigil and come up with strict anti-drug trafficking policies in the future.

Indian leadership has a real test on its hands now, as Taliban cannot be taken lightly, especially when it is backed by China and Pakistan. India cannot trust Taliban's commitment that it will not allow anybody to use its land for terrorist activities.

India has created a wider goodwill for itself in Afghanistan. Indian infrastructure projects fulfilled basic needs of Afghan people. India needs to push hard for a decisive role in the region and should use its contacts and leadership to expand its diplomatic base in and around Afghanistan and the Indo-Pacific region.

New Delhi needs to work on its new allies, should not allow smaller neighbours joining Chinese camp, and try to regain the trust of old friends like Russia and Iran. India needs to prioritise its own strategic and diplomatic needs vis-à-vis the South Asian region and the Indo-Pacific region.

*(The writer is Head and Associate Professor of the Department of Political Science at the Central University of Himachal Pradesh)*



# India navy seeks domestic shipyards for four landing platform docks

**By N. C. Bipindra**

**New Delhi:** After a failed seven-year attempt at procuring four Landing Platform Docks (LPDs), India has begun a new acquisition process expected to be worth over \$3 billion for these amphibious warfare naval warships under the latest procurement rules.

The Ministry of Defence issued the Request for Information (RFI) to procure four LPDs for the Indian Navy from registered Indian shipyards, such as the state-run Mazagon Dock and Shipbuilders Limited, Garden Reach Shipbuilders and Engineers Limited, and Cochin Shipyard Limited, and the private sector Larsen & Toubro Shipbuilding. The shipyards have to reply to the RFI by Oct. 20.

The bidders are expected to obtain a technology transfer and design from a foreign vendor from nations like Russia, France, Spain, and Germany, but will have to strictly adhere to the Indigenous Content requirements, as per the latest procurement procedures.

“The Landing Platform Dock (LPDs) shall be capable to transport and land ashore a combined arms force and to sustain their operations ashore,” the RFI documents issued on Aug. 24 said, revealing the intended use of the warships.

“Inherent to this capability would be a capacity to embark and sustain a body of troops at sea for prolonged durations, to embark, stow onboard and discharge at the objective the full range of the combat cargo required for undertaking and sustaining the operations ashore and to enable operation of multiple means of ship to shore movement of troops and cargo,” it said.

LPDs will undertake Out of Area Contingencies (OOAC) through its inherent capability to transport and deploy forces ashore, ability to arrive quickly in area, and sustain operations at sea for prolonged durations.

LPDs will act as Command Centre for the Commander, Amphibious Task Force, Landing Force Commander and the Air Force Commander and also undertake Humanitarian Assistance and Disaster Relief missions.

Additionally, LPDs will also act as mother ship for unmanned capability and to support operation/ exploitation of all dimensions of futuristic unmanned vehicles/platforms/equipment. The LPDs will also provide medical facilities for treatment of battle casualties.

The anticipated delivery time lines for the first vessel is maximum of 60 months followed by delivery of one vessel every 12 months. Vendors are to





indicate their comments on the build period and timelines for delivery.

In Oct. 2020, the government had scrapped the 2013 tender issued for building the four LPDs at a private shipyard in India. However, the financial instability of the competing Reliance Naval Engineering Limited left only L&T Shipbuilding as the lone vendor in the tender, a situation that is not acceptable under the then prevailing procurement rules for the defence sector.

The specifications for the 2013 LPD tender were issued back in 2006. The long delay in the LPDs procurement process, the single vendor situation and the fast developing technology in LPD construction resulted in the navy recommending to the government to scrap the 2013 tender.

The Indian Navy currently operates one LPD, the INS Jalashwa, an Austin-class amphibious transport

dock procured from the United States in 2007.

According to the specifications for the LPDs mentioned in the latest RFI, the LPDs will have a maximum length of 200 meters, and its maximum draught will be 8 meters.

The ship will be powered by electric propulsion through shafts and propellers. They must be able to sustain a speed of 20 knots or above and should cruise at the speed of 14 to 16 knots. They should also be able to provide logistical support to the troops for 60 days.

The LPDs will be equipped with 32 Vertical Launch Short Range Surface to Air Missile (VLSRSAM) and 16 ship-launched anti-ship missiles. They will have 4 AK 630 CIWS guns with Electro-Optical Fire Control System, 6 heavy machine guns with stabilised gun control stations, 8 medium machine guns, and Directed Energy Weapons in lieu of AK 630s when developed.

For counter-measures, it will have four chaff launching systems. They will also incorporate 3 Long-Range Acoustic Devices. The vessels must have the endurance of 10,000 nautical miles at economical speed with 25 per cent reserve fuel, and should be able to stay in the waters for minimum 45 days in terms of machinery and fuel.

The LPDs will be crewed by 530 people including 60 officers and 470 sailors. They will also carry 900 troops. The vessels must have facilities for 20% women officers and 15 per cent women sailors.

The RFI states that the ship should have a 'through deck' design and should be capable of accommodating at least two Heavy Lift Helicopters, 12 Special Operations Helicopters and two Naval Shipborne Unmanned Aerial Systems (NSUAS).

They are required to allow simultaneous operations of at least 4 Special Operations helicopters. The vessel should have hangar capacity for 2 Special Ops Helicopters and two NSUASs, while the two Heavy Lift Helicopters will be parked on the flight deck.

As the LPDs will have a through

deck used to land only helicopters and there is no plan to dock vertical and/or short take-off and landing (VSTOL) aircraft, they will be actually Landing Helicopter Docks. As Indian Navy has retired its Sea Harriers, it currently does not operate any VSTOL aircraft, therefore the new LPDs will have only helicopters, not fixed-wing aircraft.

The Landing Platform Docks will be able to embark, stow and operate one chariot, two Special Operation Rigid Hull Inflatable Boats, two Special Purpose Crafts, and Autonomous Underwater Vehicles. They will have four LCMs (Landing craft mechanized), four LCVPs (Landing Craft, Vehicle and Personnel), and two LCACs (Landing Craft Air Cushion) or two L-CATs (Catamaran Landing Craft).

The well dock of the LPDs should be able to operate at speeds of upto five knots, and the Ballasting/ de-ballasting arrangements are to be suitable for launch and recovery operation in a short time up to Sea State Three.

The vessels should have one or more vehicle decks with a minimum area of 2000 m<sup>2</sup> for parking combat vehicles, which should be able to accommodate six Main Battle Tanks (MBT), 20 AAVs/BMP Class armoured vehicles and around 60 heavy trucks at the same time.

They will have a total cargo space of approximately 1000 m<sup>2</sup> and should be capable of warehouse stowage of around 400 standard marine pallets. The vessels are also required to have the facility to store 10 or more standard 20 feet containers, preferably on the flight deck without obstructing flight operations.

The RFI also details the other technical requirements, radar and aviation systems, attack and defence systems, facilities for the crew, medical facilities and other requirements for the LPDs.

According to the RFI, a Request for Proposal (RFP) will be issued to Shipyards who respond to the Request for Information, after verifying their credentials and capabilities to construct the LPDs.





## HUMAN TRAGEDY, SECURITY MALADY

India will have to bear the  
brunt of Taliban's support  
to global terror