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Admiral Dinesh Kumar Tripathi, Chief of the Naval Staff has the vision of a strong and capable Navy for realising the dream of becoming a developed nation 'Viksit Bharat' by 2047

Marking Indian Navy Day, Admiral Dinesh Kumar Tripathi, Chief of the Naval Staff, speaks to Jayant Baranwal, Editor-in-Chief, *SP's Naval Forces*, outlining his vision for keeping the Indian Navy future-ready, agile, and fully capable of responding across the entire spectrum of evolving maritime challenges

# Indian Navy Charts a Future-Ready Course Amid Evolving Maritime Challenges

*SP's Naval Forces* (SP's): China's latest and reportedly the most capable aircraft carrier has used its new electromagnetic catapult to successfully launch three types of aircraft, according to Chinese state media. Request your comments on the same.

Chief of the Naval Staff (CNS): Indian Navy (IN) continues to monitor global developments closely and remains focused on strengthening its own naval capabilities, with a clear commitment to indigeni-

sation and technological innovation. Indian Navy is extremely confident of its current combat capabilities to deter any misadventure against Indian national maritime interests across the region. At the same time, enhancement of own capabilities is a constant endeavour and the Indian Navy is fully committed to maintaining combat edge in the IOR. Our priority is the protection of national interests and contributing to regional stability through strategic partnerships and multilateral engagements.

SP's: What is the timeline being pursued for the P-75(I) Submarine programme and if you can give us little update on the same?

CNS: The ongoing case of P-75(I) for construction of state-of-the-art submarines, equipped with Air Independent Propulsion, is being pursued under the Strategic Partnership Model with complete Transfer of Technology. It is being endeavoured to conclude the contract in early 2026. Considering the timelines involved, it is





On the occasion of Indian Navy Day, SP's *Naval Forces* salutes all Indian Navy personnel for their bravery, dedication, and selfless service to the Nation!

The lead story of this issue features an in-depth interview with Admiral D.K. Tripathi, Chief of the Naval Staff, who outlines the Indian Navy's

evolving strategic outlook, combat preparedness and modernisation priorities. Admiral Tripathi notes that the Navy remains closely attuned to global naval developments, including China's advances in aircraft carrier technologies, while expressing full confidence in its ability to deter threats to India's maritime interests. Indigenisation and technological innovation, he emphasises, are central to sustaining a decisive combat edge across the Indian Ocean Region (IOR). Protecting national interests remains the Navy's primary mission, alongside contributing to regional stability through strategic partnerships and multilateral engagement.

On capability development, Admiral Tripathi details progress on the P-75(I) submarine programme, being pursued under the Strategic Partnership Model with complete Transfer of Technology. The Navy is working

towards concluding the contract by early 2026, with the induction of the first Air Independent Propulsion-equipped submarine expected in 2033, followed by annual inductions until project completion in 2038. He describes the programme as a critical step in strengthening India's underwater warfare capability while advancing long-term self-reliance.

Reflecting on lessons from the Russia-Ukraine conflict, the CNS observes that the war has dispelled the notion of short, decisive conflicts and highlighted the need for a resilient civil-military industrial base to sustain prolonged operations. He draws attention to the increasing impact of long-range precision weapons, drones, loitering munitions and uncrewed surface vessels, noting that strategic depth no longer guarantees sanctuary. These insights are shaping the Navy's operational approach, driving greater emphasis on

air and missile defence, cost-effective uncrewed solutions, refined concepts of operations, and strengthened logistics and training frameworks.

Looking ahead, Admiral Tripathi states that uncrewed and autonomous systems will increasingly complement crewed platforms through manned-unmanned teaming, enhancing persistence, access to contested areas and targeting accuracy. He also explains how the Navy balances deterrence missions with humanitarian, anti-piracy and evacuation operations through multi-mission platforms, force optimisation, personnel rotation and close coordination with national agencies and friendly foreign navies.

On naval diplomacy, he underscores the importance of multilateral exercises, information-sharing mechanisms and initiatives such as IOS Sagar, AIKEYME and IFC-IOR, along with

India's forthcoming leadership roles in IONS and Combined Maritime Forces, reinforcing India's position as a trusted maritime partner committed to collective security and stability in the IOR.

This issue also includes highlights of the Navy Day 2025 operational demonstration, which showcased frontline ships, submarines, aircraft, and special forces, underlining the Navy's combat readiness, technological maturity, and transition from a buyer's navy to a builder's navy.

All this and much, much more! Wishing all discerning readers happy reading!

JAYANT BARANWAL  
Publisher & Editor-in-Chief

expected that the first submarine under P-75(I) will be inducted in 2033 and one submarine will be inducted every year thereafter. The Project is envisaged to be completed by 2038.

**SP's:** The recent conflict in Ukraine has provided new insights into maritime warfare, including the use of unmanned systems and long-range precision weapons. What lessons has the Indian Navy drawn from the Russia-Ukraine conflict, particularly in the context of naval combat and maritime logistics?

**CNS:** The most important lesson that the ongoing Russia-Ukraine conflict has brought out, is that it has debunked the myth of short and swift wars. It has clearly established the need for and importance of a robust and resilient civil-military industrial complex to sustain long duration conflicts. The persistent use of drones and missiles indicates that sustainability hinges on cost-effective, scalable production, and innovation to counter resource-intensive attrition strategy.

Another important lesson has been that of the advent of long-range precision vectors, delivered at stand-off ranges from own territory. This highlights that strategic depth no longer provides sanctuary and one must have effective Air Defence/Anti-Missile Defence (AD/AMD) capabilities to counter these persistent threats.

The innovative employment of uncrewed systems and constant iteration of their design, lethality and tactics around its employment is another important lesson to be drawn. The prolonged conflict has also witnessed the integrated use of wire guided First Person View (FPV) drones and Loitering Munitions (LMs) and their effective degradation of Counter-UAS systems. Similarly,

**“Our priority is the protection of national interests and contributing to regional stability through strategic partnerships and multilateral engagements”**

larly, a swarm of Uncrewed Surface Vessels (USVs) can aim to overwhelm a warship's defences and ship-borne counter-drone systems need focussed attention.

Based on these lessons, the Indian Navy is continually refining its operational outlook and enhancing combat efficiency. Focussed efforts are underway to induct niche technologies, low-cost, high-impact, uncrewed solutions, and refining our CONOPS. Simultaneously, emphasis is also being laid on crew training, development of support infrastructure, and logistical

frameworks to sustain prolonged high tempo operations. These measures collectively ensure that the Indian Navy remains future-ready, agile, and capable of responding across the entire spectrum of maritime challenges.

**SP's:** Unmanned platforms—both underwater and surface—are transforming the way modern navies operate. What roles do you foresee for these systems in the Indian Navy's doctrine, and how are you planning to integrate them operationally?

**“It is expected that the first submarine under P-75(I) will be inducted in 2033 and one submarine will be inducted every year thereafter. The Project is envisaged to be completed by 2038.”**

**CNS:** Uncrewed/autonomous systems have tremendous potential to strengthen Indian Navy's operations across the surface, sub-surface and air domains. These systems, backed by a robust network - reliable and resilient in nature - are envisioned to complement crewed platforms through Manned-Unmanned Teaming (MUM-T).

As regards to their role, the Indian Navy has been employing uncrewed aerial systems for maritime surveillance missions for about two decades now, towards building Maritime Domain Awareness in our areas of interest. Looking forward, the uncrewed assets would serve to enhance current IN operational capabilities by enabling access to contested areas for unfettered operation by crewed platforms, increase persistence whilst on task, as also increase targeting accuracy through embedded Artificial Intelligence tools, Machine Learning algorithms and Data analytics.

**SP's:** With the Navy being increasingly deployed for both deterrence and humanitarian operations—from anti-piracy patrols to evacuations—how do you balance, these diverse operational demands without overstretching assets or personnel?

**CNS:** The Indian Navy balances its deterrent responsibilities and humanitarian commitments through a combination of operational flexibility, force optimisation, personnel welfare, and continued training. Our platforms are designed for multi-mission deployments, allowing seamless transition from combat duties to missions, such as anti-piracy, Search and Rescue (SAR), Humanitarian Assistance and Disaster Relief (HADR), Anti-Narcotics Operations (ANO), Non-Combatant Evacuations (NEO), etc.

PHOTOGRAPHS: SECNAV / X, PIB



**Naval Diplomacy through bilateral and multilateral engagements:**  
(Top) Admiral Dinesh Tripathi meeting US Secretary of the Navy John C. Phelan during his recent visit to the US;  
(Above) Inauguration of Africa India Key Maritime Engagement (AIKEYME) 2025.

port calls at Dar-es-Salaam, Nacala, Port Louis, Port Victoria and Male. Additionally, the ship also undertook joint surveillance of EEZs of Tanzania, Mozambique, Mauritius and Seychelles.

Further, a large-scale multilateral maritime exercise with East African countries, titled 'Africa India Key Maritime Engagement' aka 'AIKEYME', which means 'Unity'

in Sanskrit, was conducted this year, as an initiative to enhance interoperability with the navies/ maritime agencies of Africa towards tackling non-traditional maritime security threats. The maiden edition of the exercise was co-hosted by the Indian Navy and the Tanzania Peoples Defence Force (TPDF) and was conducted at Dar-es-Salaam, Tanzania. The exercise spanned

**“Indian Navy is continually refining its operational outlook and enhancing combat efficiency. Focussed efforts are underway to induct niche technologies, low-cost, high-impact, uncrewed solutions, and refining our CONOPS.”**





# Indian Navy’s Operational Demonstration of Maritime Strength Marks Navy Day 2025

President and Supreme Commander of the Armed Forces Droupadi Murmu graced the Navy Day 2025 celebrations as the Chief Guest, at Shangumugham Beach, Thiruvananthapuram



(Top Left) President Droupadi Murmu graced the Navy Day-2025 celebrations at Thiruvananthapuram, in Kerala; (All of the Rest) Glimpses of the operational demonstration by the Indian Navy during the Navy Day-2025 celebrations at Thiruvananthapuram, in Kerala on December 3, 2025.

■ SP’S SPECIAL CORRESPONDENT

THE INDIAN NAVY DISPLAYED its operational prowess and maritime capabilities through a spectacular ‘Operational Demonstration’ at Shangumugham beach, Thiruvananthapuram on December 3, 2025. The mega event brought alive the Navy’s formidable combat capabilities, technological excellence, and operational readiness, while reflecting the nation’s growing maritime strength and self-reliance. The President was hosted by Admiral Dinesh K. Tripathi, Chief of the Naval Staff. Upon arrival, a 150 men ceremonial Guard of Honour was presented to the Chief Guest.

Amongst various dignitaries, Governor of Kerala Rajendra Vishwanath Arlekar, and Chief Minister of Kerala Pinarayi Vijayan witnessed the event along with other senior Central and State Government officials, military dignitaries, and the local populace.

Speaking on the occasion, the President said that the Navy Day is a celebration of selfless service and supreme sacrifice made by naval personnel in defence of our motherland. She stated that people of India are grateful to the men and women of the Indian Navy for their service to the nation. She commended them for their professionalism, passion and patriotism.

The President said that the Indian Ocean Region is a highly strategic and critical maritime space. It is a conduit for global energy supplies and trade. As India is positioned at its centre, we bear a special responsibility. We are committed to the idea of the oceans remaining open, stable and rules-based. As per our vision of ‘Vasudhaiva Kutumbakam’, India’s approach is collaborative rather than competitive. Our country is promoting shared awareness, capacity building, and the peaceful use of the seas.

The President said that modernisation, as well as development and adaptation of new technologies, is crucial for the

combat readiness of any armed force. She was happy to note that the Indian Navy is demonstrating capability to design and build complex platforms in India itself. She expressed confidence that the Indian Navy will continue to develop indigenous technologies and contribute to achieving the goal of “Viksit Bharat”.

The Op Demo featured a thrilling display of coordinated manoeuvres by front-line platforms symbolising the Navy’s ability to deliver power and precision across the maritime spectrum. More than twenty Naval ships and submarines, including indigenous aircraft carrier INS Vikrant, along with a formidable array of air assets and elite Marine Commandos (MARCOS) presented a spectacular display of Naval strength and operational excellence.

Additionally, Hornpipe dance by the Sea Cadet Corps, cultural performance, and Continuity Drill by Naval personnel undertaking fast sequenced drills also enthralled the spectators. The event culminated with a Beating Retreat by Indian Naval band and

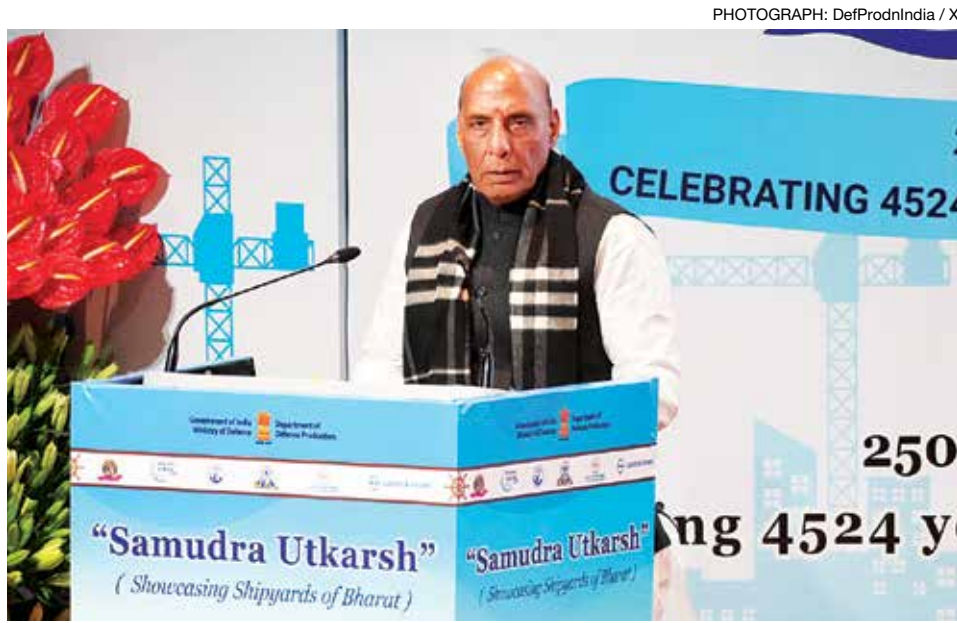
traditional sunset ceremony with illumination of Naval ships.

The Navy Day marks an important day in the annals of Indian history commemorating the Indian Navy’s defining role in ‘Operation Trident’ during the 1971 war. Over the decades, the Indian Navy has grown from strength to strength, and has stood firm and resilient, continuously evolving to meet the emerging challenges to the country’s maritime interests. Building on this legacy, under the guiding vision of Atmanirbhar Bharat, Indian Navy is moving towards rapid modernisation of force and has fully transformed from a Buyer’s Navy to a Builder’s Navy.

Op Demo 2025 underscored the Navy’s maritime excellence and its steadfast role as a reliable force that inspires confidence, builds partnerships, and upholds collective security in the oceans; a role that aligns with India’s commitment to a free, open and rule-based maritime order, anchored in the vision of MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions). ■

# Global Partners Urged to Tap India’s Shipbuilding Potential

Defence Minister Rajnath Singh urged global partners to collaborate with India’s growing shipbuilding industry to co-develop next-generation maritime capabilities.



Defence Minister Rajnath Singh speaking at the ‘Samudra Utkarsh’ seminar

■ MANISH KUMAR JHA

CALLING INDIA A “VIBRANT, capable and future-ready maritime power,” Defence Minister Rajnath Singh today urged global partners to collaborate with India’s growing shipbuilding industry to co-develop next-generation maritime capabilities.

Speaking at Samudra Utkarsh, a seminar organised by the Department of Defence Production, Ministry of Defence, to showcase the strength of Indian shipyards, the Defence Minister said such partnerships could create sustainable technologies, resilient supply chains, and a secure maritime future for the world.

Rajnath Singh emphasised that India’s shipbuilding ecosystem-powered by public sector shipyards, dynamic private companies, and thousands of MSMEs-has evolved into an integrated, end-to-end value chain capable of designing, constructing, outfitting, refitting, repairing and supporting vessels across their entire lifecycle. “India today builds not just ships, but trust. Not only platforms, but partnerships,” he said.

He noted that Indian shipyards are rapidly emerging as global players in the commercial and dual-use maritime sector as well. These include high-end passenger vessels, research ships, pollution-control vessels, coastal ferries, and even the world’s most advanced deep-sea mining support vessel, developed for ISRO and the National Institute of Ocean Technology.

The Defence Minister emphasised on the private sector for its expanding role, from building green-fuel and LNG vessels to manufacturing roll-on/roll-off ships and other high-efficiency platforms for domestic and international clients.

“Our shipyards are capable of delivering everything from aircraft carriers to advanced research vessels and energy-efficient commercial ships. This positions India strongly to become a global hub for shipbuilding, ship repair, and maritime innovation in the coming decade,” he said.

## Capability at Sea

Rajnath Singh underscored that every ship of the Indian Navy and Coast Guard currently under construction is being built in India. Policy reforms such as the Maritime India Vision 2030, Maritime Amrit Kaal Vision 2047, Defence Production & Export Promotion Policy, and Defence Procurement Manual 2025 have propelled this transformation, he said.

The Indian Navy today has 262 ongoing indigenous design and development projects, many in advanced stages. Some shipyards, are on track to achieve 100 per cent indigenous content within the decade, reducing dependence on global supply chains and ensuring uninterrupted production.

## Shipyards as Pillars of the Blue Economy

Positioning Indian shipyards as key drivers of the country’s emerging Blue Economy, Rajnath Singh said they are building vessels critical for marine research, environmental monitoring, fisheries management and maritime law enforcement across India’s vast coastline and Exclusive Economic Zone.

He highlighted the sector’s shift toward sustainable and climate-resilient practices, including green technologies, hybrid propulsion and digital shipyard systems.

**India’s shipbuilding ecosystem has evolved into an integrated, end-to-end value chain capable of designing, constructing, outfitting, refitting, repairing and supporting vessels across their entire lifecycle**

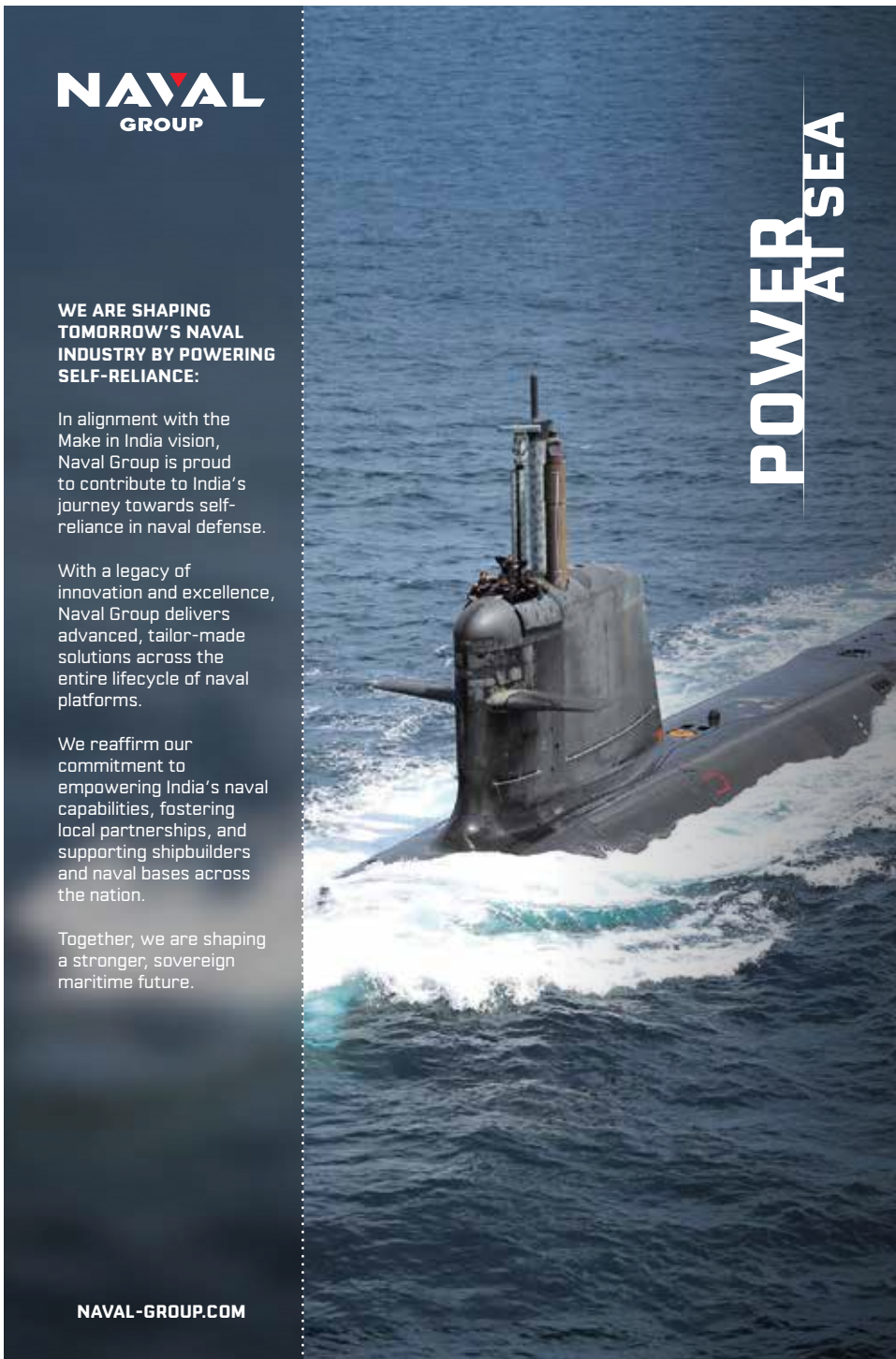
## Growing Demand from Global Clients

Defence Minister also pointed to the rising number of foreign ships visiting Indian shipyards for complex refits as a strong endorsement of India’s reliability, capability and cost-effectiveness. “We aim to become the preferred sustainment and repair hub for the entire Indo-Pacific region,” he said.

The seminar’s theme- “2500 BCE – 2025 CE: Celebrating 4,524 Years of Shipbuilding Excellence”-reflects India’s long maritime heritage. From the dockyards of ancient Lothal to modern shipyards in Mumbai, Goa, Visakhapatnam, Kolkata and Kochi, India’s maritime journey continues to evolve, he added.

Secretary (Defence Production) Sanjeev Kumar described India’s shipyards as “pillars of industrial strength and self-reliance,” having transformed over the last decade through digital tools, automation and best global practices. India, he said, now offers an ideal mix of capability, quality and geographic advantage for both defence and commercial shipping. ■

*Manish Kumar Jha is a Consulting & Contributing Editor for SP’s Aviation, SP’s Land Forces and SP’s Naval Forces and a security expert. He writes on national security, military technology, strategic affairs & policies.*





# Transforming Flight Operations

From Northern Runways to Naval Skies, Logic Air is pioneering Localizer Performance with Vertical Guidance (LPV) Solutions Across the Boeing 737 Platform

■ PRASHANTH RAJANNA

LONG BEFORE GNSS-BASED NAVIGATION became mainstream, Corporation Logic Air Inc., a Montreal-based Approved Maintenance Organization (AMO), embarked on a mission to empower northern and regional operators with advanced Localizer Performance with Vertical Guidance (LPV) capability — redefining access and safety standards for remote communities across Canada.

At that time, most northern airstrips were limited to non-precision approaches, often forcing pilots to divert due to poor visibility or the absence of ground-based navigation aids. Recognizing this challenge early on, Logic Air's avionics and certification team collaborated closely with aircraft operators and regulators to introduce LPV-enabled flight operations long before it became the global standard.

"It was a frugal and innovative engineering effort — what we often call Jugaad in India — born from necessity," recalls Prashanth Rajanna, Director - Strategy & Business Development at Logic Air. "There was no forward-fit or OEM-supported LPV solution for these aircraft. Our team convinced avionics suppliers like CMC Electronics to provide GPS systems and developed the interface units and integration pathways that could be certified under Transport Canada. That became a turning point for many operators in the North."

### Transforming Northern Operations

- Pioneered LPV integration on legacy aircraft serving northern routes, well before widespread adoption.
- Partnered with CMC Electronics and regulators to validate the first retrofit STC for LPV operations in Canada in 2011.



ILLUSTRATION: Logic Air

- Enabled reliable, all-weather access to remote communities where ILS procedures were not available.
  - Established the technical foundation for future GNSS and PBN programmes that underpin Canada's navigation infrastructure today.
- This milestone cemented Logic Air's reputation as a trailblazer in avionics innovation — bridging operational gaps through ingenuity, collaboration, and persistence. It showcased the company's enduring commitment to improving northern accessibility, flight safety, and environmental sustainability through precision-based navigation.

### Leveraging the B737 Platform – From Civil to Defence Applications

With more than 150 successful LPV STC implementations across the Boeing 737 Classic and NG fleets worldwide, Logic Air

has become a trusted integrator of precision-navigation upgrades.

Today, the company is extending this proven capability to the defence sector, exploring opportunities to support the Boeing P-8 Poseidon — the Indian Navy's long-range maritime patrol aircraft — which is built on the same B737 NG platform.

"By applying certified STC-based architectures and avionics integration expertise, we can help enhance mission precision, approach safety, and navigational resilience in complex maritime environments."

The Boeing P-8A Poseidon, derived from the commercial 737-800NG airframe, represents one of the most successful examples of a civil-to-military platform adaptation in modern aerospace. Although externally reinforced and mission-equipped for maritime patrol, reconnaissance, and anti-submarine warfare, the aircraft retains a remarkable degree of avionics and systems commonality

with its civil predecessor — a factor that has been central to its cost efficiency, certification maturity, and ease of fleet integration.

### Core Avionics Architecture

At the heart of both platforms lies the Next-Generation (NG) flight deck, built around the Honeywell-supplied integrated avionics suite. This architecture encompasses:

- Dual Flight Management Computers (FMCs) and dual GPS/IRS navigation systems providing robust redundancy
- A shared digital flight control system (DFCS) and autopilot/flight director logic, adapted in the P-8 for low-altitude maritime operations and mission profiles.
- The same ARINC 429/629 data bus framework, allowing seamless integration of mission-specific subsystems without altering the base flight deck logic.

This alignment opens avenues for collaboration with OEMs, system suppliers, and naval aviation authorities, particularly as India continues to strengthen its maritime reconnaissance and surveillance capabilities. Logic Air's proven retrofit methodologies and deep understanding of global certification processes position it as a credible partner for both civil and military modernisation programmes.

### Innovation Without Boundaries

From enabling safe landings on icy tundra runways to envisioning enhanced precision navigation for anti-submarine patrols over vast oceans, Logic Air continues to embody its core philosophy: *To Innovate where others hesitate, and to connect regions — and missions — where flight truly means lifeline.* ■

*The author is Director – Strategy & Business Development, Corporation Logic Air Inc., Montréal, Canada*

### SECOND S-80 CLASS SUBMARINE PREPARES FOR TESTING PHASE

The S-82 "Narciso Monturiol" submarine, the second of the S-80 class, is now afloat in Navantia's shipyard in Cartagena as it prepares for the final stages of its construction and commissioning, including harbour and sea trials.

The submarine sits in the water after a long and delicate manoeuvre, carried out over several hours using a floating dock and involving a series of essential tasks and checks to ensure the operation was conducted safely, both inside and outside the submarine.

From now on, harbour trials will verify all systems, with key safety milestones such as fuel loading, battery charging, and propulsion tests while moored. Once these trials are completed, sea trials (including navigation and diving tests) will begin, paving the way for delivery to the Spanish Navy.

### DELIVERY OF 'TARAGIRI', THE FOURTH INDIGENEOUS ADVANCED STEALTH FRIGATE



Taragiri (Yard 12653), the fourth ship of Nilgiri Class (Project 17A) and the third built by Mazagon Dock Shipbuilding Ltd (MDL), was delivered to the Indian Navy on November 28, 2025 at MDL, Mumbai. Project 17A frigates are versatile multi-mission platforms, designed to address current and future challenges in the maritime domain.

This state-of-the-art frigate reflects a quantum leap in naval design, stealth, firepower, automation and survivability, and is a symbol of Atmanirbharta in warship building.

Designed by the Warship Design Bureau (WDB) and overseen by the Warship Overseeing Team (Mumbai), P17A frigates reflect a generational leap in indigenous ship design, stealth, survivability, and combat capability.

### INS MAHE COMMISSIONED



The Indian Navy commissioned INS Mahe, the first of the indigenously designed and built Mahe-class Anti-Submarine Warfare Shallow Water Craft (ASW-SWC) on November 24, 2025.

Designed and constructed by Cochin Shipyard Limited, Kochi, INS Mahe is the lead ship of eight vessels in her class. The commissioning of INS Mahe adds significant punch to the Indian Navy's ASW capabilities, particularly in countering threats in the littorals. Fitted with advanced weapons, sensors, and communication systems enabling it to detect, track, and neutralise sub-surface threats with precision, the ship can sustain prolonged operations in shallow waters and features technologically advanced machinery and control systems.

### NEW GENERATION MAN-PORTABLE AUTONOMOUS UNDERWATER VEHICLES



A new generation of Man-portable Autonomous Underwater Vehicles (MP-AUVs) have been successfully developed by the Naval Science & Technological Laboratory (NSTL), Visakhapatnam of Defence Research and Development Organisation (DRDO) for mine countermeasure missions. The system comprises multiple AUVs equipped with Side Scan Sonar and Under Water cameras as primary payloads for real-time detection and clas-

### APPOINTMENT



#### Vice Admiral Sanjay Sadhu, Assumes Charge as CWP&A

Vice Admiral Sanjay Sadhu assumed charge as the Controller of Warship Production & Acquisition on November 28, 2025. During his illustrious career spanning more than 38 years, the Flag Officer has tenanted several key Operational, Staff, and Yard appointments.

The Flag Officer has the rare distinction of heading two major Dockyards on both the West and East Coasts and being the Chief Staff Officer (Technical) of both the Western and Eastern Naval Command. Prior to assuming charge as CWP&A, the Flag Officer served as the Programme Director, Advanced Technology Vessel Programme at New Delhi.

sification of Mine-Like Objects. The onboard deep learning based target recognition algorithms enable autonomous classification, significantly reducing operator workload and mission time. Additionally, a robust underwater acoustic communication has been integrated to facilitate inter-AUV data exchange during operations ensuring enhanced situational awareness.

### NAVANTIA AND THALES PARTNER TO MODERNISE THE ROYAL THAI NAVY FLEET

Navantia and Thales reinforced the partnership with an agreement underscoring both companies' commitment to supporting the RTN in the modernisation of its fleets.

Thales will provide an IFF system with an interrogator for medium and long-range surveillance and identification, as well as a transponder, to be integrated into radars and surveillance systems.

During 2025 Navantia was awarded two contracts for the modernisation of two Pattani-class OPVs and HTMS Chang LPD and this partnership with Thales reaffirms Navantia's commitment to delivering state-of-the-art solutions and supporting the strategic needs of the RTN. ■

# Nuclear Capability Must be at the Core

While India's naval nuclear deterrence is progressing, the delay over Akula's delivery is a matter of concern under the leased systems. For a regional power aiming to secure its maritime interests in the Indian Ocean Region, amidst growing Chinese naval assertiveness, that capability is not nice-to-have — it is essential.

■ MANISH KUMAR JHA

THE 2019 AGREEMENT BETWEEN India and Russia — a \$3 billion lease for a capable Akula-class SSN for ten years — signalled a conscious drive by India to upgrade its undersea warfare capability. The vessel, to join as INS Chakra-III, was originally scheduled for delivery by 2025.

But now that delivery has slipped to 2028. The delay owes to a complex mix of technical difficulties, supply-chain constraints worsened by the Russia-Ukraine war, and broader geopolitical uncertainty.

That postponement matters — and not just in calendar years. It prolongs a critical capability gap for the Indian Navy: since the earlier leased SSN (the previous INS Chakra II) returned to Russia in 2021, India has effectively been without a nuclear-powered attack submarine.

This hiatus comes at a time when undersea capabilities are rapidly becoming central to power projection, maritime do-



INS CHAKRA (File image)

main awareness, and strategic deterrence in the Indo-Pacific.

### Why INS Chakra-III matters

Despite the delay, INS Chakra-III remains

PHOTOGRAPH: Indian Navy

a strategically solid acquisition — arguably more relevant than ever in the current maritime environment. The modernised Akula design promises significant capabilities: stealth, deep-diving endurance, high sustained speeds, and armament flexibility (torpedoes, heavyweight weapons, and, reportedly, long-range cruise missiles such as the 3M14K "Kalibr" with up to 1,500-2,000 km reach).

In practical terms, this gives India an underwater platform that can — if needed — operate far from coastal waters, conduct long-range strike missions, undertake intelligence and surveillance, and provide a credible deterrent floating under the oceans.

For a regional power aiming to secure its maritime interests in the Indian Ocean Region (IOR) amidst growing Chinese naval assertiveness, that capability is not nice-to-have — it is essential.

Furthermore, Chakra-III serves as an important interim bridge. While India builds its own next-generation SSNs un-

der Project 77 (scheduled to deliver the first indigenous SSN by 2036-37), a leased Akula helps maintain operational familiarity, sustain crew readiness, and ensure continuity of nuclear-submarine-level deterrence.

### Risks, trade-offs, and the limits of a lease-based approach

Yet, the Chakra-III path is not without complications or risks. The delays illustrate exactly why relying on foreign-built, refurbished and leased platforms can be unpredictable. As pointed out by analysts close to the negotiations, the long timeline — carved out to refurbish, modernise, and integrate Indian systems (like sonar, communication, tactical control) — includes many moving parts.

Moreover, while a leased SSN fills a short-term gap, it does not substitute for long-term strategic autonomy. The 10-year lease might give the Navy some time, but it also imposes inevitable limitations — in maintenance flexibility, lifecycle management, upgrades, and future-proofing. Once the lease ends, unless renewed or replaced, the capability vanishes. This underlines the importance of India's push for its own SSNs under Project 77 — a plan that must succeed if India's undersea ambitions are to be sustainable.

Finally, in the current geopolitical backdrop — supply-chain disruptions, sanctions, and global contestation — such deals may be subject to delays, renego-

tiation, or external interference, making them vulnerable. Strategic planners must factor that risk.

### China's naval progress

According to a recent fact-sheet, PLAN currently has six SSBNs (ballistic-missile submarines) and six SSNs (attack submarines), along with a much larger force of conventional diesel/electric + AIP submarines.

Older data show that over the years, China steadily expanded its nuclear submarine fleet. For instance, by 2020 they had about six SSBNs and 7 SSNs; some projections suggest this could grow to ~8 SSBNs and ~13 SSNs by 2030.

Each Type 094 carries submarine-launched ballistic missiles (SLBMs). Early versions used the JL-2 SLBM, which had intercontinental range; more recent boats are believed to be capable of using improved missiles such as JL-3 SLBM, extending reach and adding to sea-based nuclear deterrence.

China is already working on a next-generation SSBN: the Type 096 (Tang-class). This new class is expected to feature improved stealth, sensors and weapons, potentially marking a qualitative jump in China's sea-based nuclear capability.

The backbone of China's SSN fleet is the Type 093 (Shang-class). According to recent data, PLAN operates a total of about 6 SSNs from this class (including variants Type 093, 093A, and possibly newer 093B).

The newer Shang-class submarines of-

fer better stealth (quieter), more advanced sensors, and more capable weapons (torpedoes, anti-ship missiles) — making them a credible platform for sea-control, anti-ship or anti-submarine operations, and possibly land-attack with conventional cruise missiles.

The presence of a credible SSBN fleet (Type 094, and future Type 096) gives China a sea-based nuclear deterrent — vital for second-strike capability, survivability of its nuclear deterrent, and strategic depth. This makes China's nuclear posture more survivable and less vulnerable to pre-emptive strikes on land-based assets.

An expanding SSN fleet enhances China's ability to project power undersea — conducting submarine patrols, imposing sea-denial, threatening surface ships and other submarines, gathering intelligence, and potentially projecting deterrence beyond coastal waters.

For regional powers (India, Pacific-rim states, US & allies), China's growing nuclear-submarine capability adds complexity: underwater tracking, anti-submarine warfare (ASW), maritime surveillance will become more challenging — raising the bar for detection and counter-submarine operations.

Given China's shipbuilding capacity (some shipyards reportedly capable of producing multiple nuclear submarines per year), the long-term trajectory points toward a larger, more advanced and stealthier nuclear-submarine fleet. ■

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