Organizational Framework and Strategic Capabilities of the Indian Navy: An Analysis

Harvinder Singh
Research Scholar,
Department of Defence & Strategic Studies,
Punjabi University, Patiala.
E-Mail:- sandhuu.harvinderr@gmail.com

ABSTRACT
This paper analyses the organizational framework and strategic capabilities of the Indian Navy within the evolving maritime security environment of the Indian Ocean Region (IOR). It examines the Navy's command structure, force composition, and modernization trajectory to assess its capacity to safeguard sea lines of communication, project power, and maintain strategic deterrence. Particular emphasis is placed on the submarine force, including the development of a sea-based nuclear deterrent through the Arihant-class SSBNs, as well as the limitations of India's nuclear-powered and conventional submarine capabilities.
The study further evaluates the role of surface combatants, naval aviation, and littoral warfare platforms in enhancing operational flexibility and regional influence. While notable progress has been achieved in indigenous shipbuilding and capability development, persistent challenges related to force adequacy, technological dependence, and procurement delays continue to constrain effectiveness. The paper concludes that sustained investment, industrial coherence, and strategic prioritization are essential for the Indian Navy to fulfill its role as a credible deterrent and a net security provider in the Indo-Pacific region.

INTRODUCTION

The Indian Navy constitutes the maritime arm of the Indian Armed Forces and is entrusted with the responsibility of safeguarding India's maritime frontiers and securing its interests in the Indian Ocean Region (IOR). In addition to defending territorial waters, the Navy plays a critical role in protecting India's sea lines of communication (SLOCs), which are vital for international trade and energy security. In terms of personnel strength and fleet size, the Indian Navy rank among the world's leading naval forces. The Naval Headquarters is located in New Delhi and oversees three principal operational commands—Western, Eastern, and Southern—along with the tri-services Andaman and Nicobar Command.[1]

India possesses a coastline stretching approximately 7,516 kilometers, encompassing a vast Exclusive Economic Zone (EEZ). Within this maritime domain, the Indian Navy ensures the security of commercial shipping and offshore assets. Beyond its military role, the Navy also supports civil authorities during humanitarian assistance and disaster relief (HADR) operations, particularly during natural calamities such as cyclones, floods, and tsunamis.[2]

WESTERN NAVAL COMMAND: INDIA'S PRINCIPAL MARITIME STRIKE ARM

The Western Naval Command (WNC), headquartered in Mumbai, is widely regarded as the Indian Navy's primary offensive and combat-ready command. Owing to its geographical location and strategic orientation, the WNC bears the principal responsibility for safeguarding India's western maritime approaches, particularly the Arabian Sea, which hosts critical sea lanes of communication (SLOCs) and energy supply routes. The command's operational focus is

[1] Ministry of Defence, Government of India. *Annual Report 2019–20*. Government of India, 2020, pp. 3–6.
[2] Indian Navy. *Indian Maritime Doctrine (INBR 8)*. Naval Headquarters, 2015, pp. 21–25.

shaped by proximity to Pakistan and the Gulf region, making it central to India's warfighting posture in the maritime domain.[3]

To fulfil these responsibilities, the Western Naval Command is equipped with extensive infrastructure, including submarine pens, aircraft carrier berthing facilities, forward operating bases, and major naval dockyards, notably the Mazagon Dock Shipbuilders Limited (MDL). These facilities enable rapid force mobilisation, sustainment of carrier battle groups, and deployment of submarines and surface combatants. In the event of hostilities, the WNC is expected to play a decisive role in ensuring sea control, maritime denial, and protection of India's commercial shipping and offshore assets.[4]

EASTERN NAVAL COMMAND: SECURING THE BAY OF BENGAL AND EASTERN SEABOARD

The Eastern Naval Command (ENC), headquartered in Visakhapatnam, functions as a major operational command responsible for the defence of India's eastern coastline and maritime interests in the Bay of Bengal. Its core mandate includes the protection of ports, harbours, offshore oil and gas installations, island territories, and other critical maritime infrastructure within India's Exclusive Economic Zone (EEZ).[5]

Beyond territorial defence, the ENC plays a crucial role in monitoring maritime developments in the eastern Indian Ocean, including increased naval activity by extra-regional powers and non-traditional security threats such as piracy, trafficking, and illegal fishing. The command's operational reach has expanded in recent years in response to growing Chinese naval presence and strategic competition in the Indo-Pacific, making it a key pillar of India's eastern maritime strategy.[6]

SOUTHERN NAVAL COMMAND: TRAINING AND FORCE DEVELOPMENT HUB

The Southern Naval Command (SNC), headquartered in Kochi, serves as the Indian Navy's principal training command. Unlike the Western and Eastern Commands, its primary role is not combat operations but the professional education, skill development, and operational training of naval personnel across all branches of the service.[7]

The command hosts a wide network of premier training institutions, naval air stations, and ship repair facilities that support the Navy's long-term force development objectives. In addition to training, the SNC has been associated with the testing and evaluation of indigenous weapon systems, including the naval variant of the Trishul surface-to-air missile, reflecting India's emphasis on indigenisation and self-reliance in defence technology.[8]

ANDAMAN AND NICOBAR COMMAND: INDIA'S FORWARD MARITIME OUTPOST

The Andaman and Nicobar Command (ANC), headquartered at Port Blair, represents a unique and strategically significant element of India's defence architecture. It is India's only tri-services unified command, integrating assets and personnel from the Army, Navy, and Air Force under a single operational framework. The Andaman and Nicobar archipelago stretches over 750 kilometres and is located approximately 1,200 kilometres from the Indian mainland, placing it in close proximity to Southeast Asia and key maritime chokepoints.[9]

The primary operational role of the ANC is to monitor, deter, and counter military and non-traditional security threats in the Bay of Bengal and adjoining waters, including piracy, terrorism, and illegal maritime activities. Its strategic

[3] Till, Geoffrey. *Seapower: A Guide for the Twenty-First Century*. 4th ed., Routledge, 2018, pp. 305–307.
[4] Ministry of Defence, Government of India. *Ensuring Secure Seas: Indian Maritime Security Strategy*, 2015, pp. 47–49.
[5] Brewster, David. *India's Ocean: The Story of India's Bid for Regional Leadership*. Routledge, 2014, pp. 121–123.
[6] Pant, Harsh V., and Yogesh Joshi. *The US Pivot and Indian Foreign Policy*. Palgrave Macmillan, 2016, pp. 132–134.
[7] Singh, Abhijit. *Maritime Security in the Indian Ocean*. National Maritime Foundation, 2016, pp. 91–93.
[8] Ministry of Defence, Government of India. *Annual Report 2019–20*. Government of India, pp. 54–56.
[9] Mohan, C. Raja. *Samudra Manthan: Sino-Indian Rivalry in the Indo-Pacific*. Oxford UP, 2012, pp. 186–188.

location allows India to maintain surveillance over critical sea lanes connecting the Indian Ocean with the Malacca Strait, one of the world's busiest maritime passages.[10]

The ANC also functions as a strategic counterbalance to expanding China–Myanmar maritime cooperation. Indian security assessments have highlighted concerns over potential Chinese surveillance facilities in Myanmar's Coco Islands and the development of Chinese logistical infrastructure near the Irrawaddy River delta, which could enhance China's naval reach into the eastern Indian Ocean. In response, India has undertaken a substantial build-up of joint military capabilities under the ANC, focusing on maritime domain awareness, intelligence gathering, and rapid response capabilities to deter external interference and preserve regional stability.[11]

SUBMARINE FORCE AND STRATEGIC DETERRENCE

The submarine arm constitutes the cornerstone of the Indian Navy's strategic deterrence posture, providing survivability, second-strike capability, and operational flexibility. At present, India operates a submarine fleet of approximately sixteen vessels, comprising one nuclear-powered ballistic missile submarine (SSBN), INS *Arihant*; one nuclear-powered attack submarine (SSN), INS *Chakra*; and fourteen conventional diesel-electric submarines (SSKs). The induction of INS *Arihant* in 2009 marked a decisive step in operationalizing India's sea-based nuclear deterrent and completing the nuclear triad.[12]

India's SSBN capability is currently armed with the K-15 *Sagarika* submarine-launched ballistic missile (SLBM), with an operational range of about 750 kilometres. Simultaneously, longer-range SLBMs such as the K-4 (approximately 3,500 kilometres) and the K-5 (around 5,000 kilometres) remain under various stages of testing and development.[13] These developments underscore the Indian Navy's expanding role in reinforcing credible minimum deterrence by enhancing survivability and retaliatory reach in the maritime domain.

SUBMARINE ARM OF THE INDIAN NAVY

India's nuclear-powered attack submarine capability has thus far been limited, centered on INS *Chakra*, a Russian Akula-class submarine leased for a ten-year period at an estimated cost of USD 1 billion and commissioned into service in 2012 under the Eastern Naval Command. Equipped with four 533 mm and four 650 mm torpedo tubes, the platform is capable of deploying a range of torpedoes and SS-N-27 *Sizzler* anti-ship cruise missiles, significantly enhancing India's underwater combat potential.[14]

At the time of its induction, senior naval leadership emphasized that the submarine would substantially improve operational flexibility in blue-water missions and enhance the Navy's ability to counter both regional and extra-regional adversaries.[15] Subsequent negotiations between India and Russia sought to extend the lease period until 2027.

In March 2019, India further reinforced its SSN ambitions by signing a USD 3 billion agreement with Russia for the lease of an Akula-I class submarine, to be commissioned as INS *Chakra III*. Expected to be delivered by 2025 for a ten-year lease, the platform is intended to strengthen India's deterrence posture against expanding naval deployments by extra-regional powers in the Indian Ocean Region (IOR).[16]

[10] Brewster, David, pp. 128–130.
[11] Fravel, M. Taylor. *Strong Borders, Secure Nation*. Princeton UP, 2008, pp. 268–271.
[12] Pant, Harsh V. *Indian Foreign Policy*. Oxford UP, 2016, pp. 142–144.
[13] Rajagopalan, Rajeswari Pillai. *Nuclear Security in India*. Oxford UP, 2018, pp. 221–223.
[14] Brewster, David., pp. 98–99.
[15] Till, Geoffrey., pp. 308–309.
[16] Scott, David. "India's Undersea Deterrence." *Asian Security*, vol. 15, no. 2, 2019, pp. 163–165.

CONVENTIONAL SUBMARINE FLEET (SSKs)

The Indian Navy currently maintains fourteen diesel-electric submarines (SSKs), comprising four Shishumar-class (Type 209/1500) submarines of German origin, nine Sindhughosh-class (Kilo-class) submarines acquired from Russia, and one Kalvari-class (Scorpene) submarine of French design. This force level remains significantly below the Navy's assessed requirement of twenty-four conventional submarines, which are deemed essential for maintaining superiority over Pakistan and deterring expanding Chinese naval activity in the IOR.[17]

As part of its modernization drive, India launched the third of six Scorpene-class submarines, INS Karanj, at the Mumbai naval dockyard in January 2018. Displacing approximately 1,565 tones, the submarine was commissioned into active service in 2019, marking incremental progress in indigenous submarine construction under Project 75.[18]

The Sindhughosh-class submarines are undergoing mid-life upgrades, including modifications to their torpedo tubes to enable the launch of 3M-54E1 Klub-S land-attack cruise missiles (LACMs). Similarly, the Navy's aging Type 209 submarines are being retrofitted with Harpoon Block II anti-ship cruise missiles, enhancing their strike capability.[19] In addition India plans to procure up to six midget submarines to support the MARCOS Special Forces unit, thereby expanding its capacity for covert operations along hostile coastlines, particularly in the Arabian Sea.[20]

GUIDED MISSILE DESTROYERS

The Indian Navy operates fourteen guided-missile destroyers across multiple classes, including the Rajput, Delhi, and Kolkata classes. Among these, the indigenously constructed Delhi-class destroyers represent a major milestone in India's naval shipbuilding capability. Designed with assistance from Russia's Severnoye Design Bureau and constructed at Mazagon Dock Limited (MDL), these 6,700-tonne vessels form the backbone of the Navy's surface strike force. Commissioned between 1997 and 2001, they significantly enhance India's long-range maritime strike and air-defence capabilities.[21]

These destroyers are armed with Kh-35E Uran anti-ship missiles, Shtil (SA-N-7) surface-to-air missile systems, and the Israeli Barak point air defence system. The platforms also feature dual helicopter hangars capable of operating Dhruv ALH and Chetak helicopters, enabling extended anti-surface and anti-submarine operations.[22]

KOLKATA-CLASS STEALTH DESTROYERS

The Kolkata-class destroyers, developed under Project 15A, represent the Indian Navy's transition towards stealth and network-centric warfare. Constructed by MDL under the Make in India initiative, INS Kolkata was commissioned in 2014, followed by INS Kochi in 2015 and INS Chennai in 2016. These platforms demonstrate advanced anti-surface warfare (ASuW) capabilities and are equipped with BrahMos supersonic cruise missiles, Barak-8 surface-to-air missiles, and sophisticated combat management systems.[23]

Future variants under Project 15B are expected to integrate next-generation weaponry, including the Nirbhay land-attack cruise missile, BrahMos-II hypersonic missile, and extended-range surface-to-air missile systems, further strengthening India's maritime deterrence.[24]

[17] Pant, Harsh V. *The Indian Navy: Strengths, Capabilities, and Challenges*. Oxford UP, 2019, pp. 112–114.
[18] Jane's Fighting Ships 2019–2020, edited by Tim Ripley, IHS Markit, 2019, pp. 347–349.
[19] Erickson, Andrew S., and Lyle J. Goldstein. *Chinese Naval Strategy in the 21st Century*. Naval Institute Press, 2015, pp. 221–223.
[20] Mohan, C. Raja. *Samudra Manthan: Sino-Indian Rivalry in the Indo-Pacific*. Oxford UP, 2012, pp. 189–190.
[21] Singh, Abhijit. *Maritime Security in the Indian Ocean*. National Maritime Foundation, 2016, pp. 74–76.
[22] Ibid., pp. 77–79.
[23] Till, Geoffrey. *Seapower*, pp. 312–314.
[24] Pant, Harsh V., pp. 141–143.

FRIGATE FLEET AND INDIGENOUS SHIPBUILDING

The Indian Navy currently operates thirteen frigates, including Brahmaputra, Godavari, Talwar, and Kamorta-class vessels. The Brahmaputra-class frigates, built indigenously under Project 16A, share weapons systems similar to the Delhi-class destroyers and symbolize India's growing self-reliance in warship construction.[25]

The Talwar-class frigates, derived from the Russian Krivak III design, were acquired in two phases between 2003 and 2013. While earlier vessels were equipped with Klub-N missiles, later variants carry BrahMos cruise missiles, significantly enhancing strike reach. These frigates also feature advanced anti-submarine warfare systems, including RBU-6000 rocket launchers and 533 mm torpedo tubes.[26]

India has further expanded this segment through Project 17A, which envisages seven stealth-guided missile frigates equipped with Barak-8 MR-SAM systems and vertically launched BrahMos missiles. Construction responsibilities are shared between MDL and GRSE, underscoring India's evolving shipbuilding ecosystem.[27]

CORVETTE FLEET AND LITTORAL COMBAT CAPABILITIES

The Indian Navy presently operates twenty-two guided-missile and anti-submarine warfare (ASW) corvettes, forming a crucial component of its littoral combat and coastal defence posture. In order to modernize this segment, the Navy plans to induct seven next-generation guided missile corvettes at an estimated cost of USD 2 billion. These vessels are intended to replace the aging Veer-class (Russian-built Project 1241-RE missile boats) and Khukri-class corvettes, of which the Navy currently operates ten and four units respectively. In line with the Government of India's Make in India initiative, participation in the bidding process has been restricted exclusively to domestic shipyards, both public and private.[28]

The Navy's Request for Information (RFI) specifies that the new corvettes must possess greater operational range and endurance, and be capable of performing a wide spectrum of missions including anti-surface warfare, anti-submarine warfare, maritime interdiction, local naval defence, and Visit, Board, Search, and Seizure (VBSS) operations. Additionally, these platforms are expected to be equipped to counter hostile submarine threats and conduct offensive strike missions. Deliveries were initially envisaged from 2023 onwards.[29]

MINE COUNTERMEASURE VESSELS (MCMVS): CAPABILITY GAP AND SETBACKS

India's extensive coastline and dependence on maritime trade underscore the critical requirement for mine countermeasure vessels (MCMVs) capable of detecting and neutralizing underwater mines that threaten ports, offshore installations, and sea lines of communication. Recognizing this vulnerability, the Indian Navy had proposed the construction of twelve advanced MCMVs under a collaborative framework with Kangnam Shipyard of South Korea, as part of the Make in India initiative.[3]

However, the ₹32,000 crore projects were subsequently scrapped by the government, dealing a significant setback to both the Navy's modernization plans and indigenous defence manufacturing ambitions. Protracted negotiations, disagreements over deviations from the original Request for Proposal (RFP), cost escalation, and unresolved issues related to Transfer of Technology (ToT) were key factors contributing to the project's cancellation. It is anticipated that a fresh Expression of Interest (EoI) may be issued to specialized foreign shipyards such as Kangnam (South Korea) and Intermarine (Italy), which possess expertise in constructing non-magnetic hull MCMVs equipped with high-definition sonars and acoustic and magnetic mine-sweeping systems.[4]

[25] Jane's Fighting Ships 2020–2021, pp. 365–368.
[26] Brewster, David, pp. 171–173.
[27] Ministry of Defence (India). *Annual Report 2022–23*, Government of India, pp. 92–94.
[28] Singh, Abhijit. *Maritime Security in the Indian Ocean*. National Maritime Foundation, 2016, pp. 88–90.
[29] Pant, Harsh V. *The Indian Navy: Strengths, Capabilities, and Challenges*. Oxford UP, 2019, pp. 154–156.

NAVAL AVIATION: PLATFORMS AND MODERNIZATION

The Indian Naval Air Arm comprises a diverse mix of Russian, British, French, and indigenous aircraft and helicopters, including the Advanced Light Helicopter (ALH) manufactured by Hindustan Aeronautics Limited (HAL). By regional standards, the fleet remains relatively modern and provides comprehensive air cover for carrier strike groups, surface fleets, and shore-based strike missions. Long-range maritime patrol aircraft operate from shore bases and offer persistent surveillance, while ship-borne helicopters provide anti-submarine warfare (ASW), search and rescue (SAR), early warning (EW), and anti-ship strike capabilities.[5]

In August 2018, the Indian government approved defence acquisitions worth approximately ₹4,600 crore, encompassing the procurement of multi-role helicopters (MRHs), naval utility helicopters (NUHs) under the Strategic Partnership (SP) model, and domestically produced artillery systems.[6]

MULTI-ROLE AND NAVAL UTILITY HELICOPTER ACQUISITION

To replace the Navy's aging Sea King 42/42A helicopters, India finalized a government-to-government agreement with the United States to procure twenty-four MH-60R Seahawk helicopters from Lockheed Martin–Sikorsky, at an estimated cost of ₹13,000 crore. These helicopters are expected to form the backbone of the Navy's future ASW, anti-surface warfare, and airborne early warning missions. Earlier attempts to acquire similar platforms in 2016 had failed to materialize.[7]

Simultaneously, the Defence Acquisition Council (DAC) approved a ₹21,738 crore project for the construction of 111 Naval Utility Helicopters (NUHs) under the Strategic Partnership model. Intended to replace the obsolete Chetak helicopters, the project seeks to promote indigenous manufacturing while facilitating access to advanced aerospace technologies. Further capital procurement approvals in March 2019 included modernization of naval aviation infrastructure along India's western seaboard.[8]

MARITIME CAPABILITY DEVELOPMENT AND INDIGENISATION PLANS

Under the Maritime Capability Perspective Plan (MCPP) 2022, the Indian Navy envisages the acquisition of a wide array of platforms, including cadet training ships, offshore patrol vessels (OPVs), landing platform docks (LPDs), Project 17A stealth frigates, Project 75(I) submarines, and Project 28A ASW corvettes, alongside GRP-hulled MCMVs and an additional aircraft carrier.[9]

These initiatives are guided by the Indian Naval Indigenisation Plan (2015–2027) and the Science and Technology Roadmap (2015–2035), which aim to synchronize national R&D efforts and leverage private-sector participation to enhance long-term maritime self-reliance.[10]

DEFENCE PROCUREMENT CHALLENGES AND STRATEGIC DIVERSIFICATION

Historically, India has depended heavily on Russia for naval platforms and weapon systems. However, inefficiencies within Russia's defence-industrial base and delays in equipment supply have adversely affected India's naval expansion timelines. Indigenous shipbuilding efforts have also encountered difficulties, with domestic shipyards frequently missing delivery deadlines. These challenges have prompted the Navy to diversify its procurement sources.[11]

A notable outcome has been closer defence collaboration with Israel, particularly in the field of naval air defence systems such as Barak-1 and Barak-8, resulting in Indian warships operating a complex mix of Russian, Israeli, and Western-origin systems. Concurrently, India's growing strategic convergence with the United States is reflected in acquisitions like the P-8I maritime patrol aircraft and potential cooperation in the design of India's future aircraft carriers.[12]

NAVAL DIPLOMACY, EXERCISES, AND REGIONAL SECURITY ENGAGEMENTS

The Indian Navy actively engages with foreign navies through bilateral and multilateral exercises, including PASSEX, occasional deployments, and institutionalized exercises such as Malabar, Varuna, INDRA, SIMBEX, AUSINDEX, and IBSAMAR. These engagements enhance interoperability and address both traditional and non-traditional maritime security challenges. Such cooperation aligns with Japan's "Diamond Concept", which envisages strategic coordination among India, Japan, Australia, and the United States to ensure stability in the Indo-Pacific.[13]

India also conducts Coordinated Patrols (CORPATs) with regional navies, notably Myanmar, Thailand, and Indonesia, aimed at curbing illegal activities and ensuring maritime safety. These efforts are complemented by multilateral initiatives such as the MILAN exercises, which bring together Indian Ocean littoral states to enhance regional maritime cooperation.[14]

INDIA'S MARITIME SECURITY CONCERNS AND REGIONAL LEADERSHIP

India's expanding economic interests and geopolitical stature necessitate a proactive role in shaping the security architecture of the Indian Ocean Region (IOR). While comprehensive regional security mechanisms remain elusive, institutions such as the Indian Ocean Naval Symposium (IONS) and the Indian Ocean Rim Association (IORA) provide valuable platforms for cooperation. India has emphasized strengthening linkages between these bodies to improve maritime security governance.[15]

Non-traditional threats—including piracy, maritime terrorism, trafficking, climate-induced migration, and resource depletion—are increasingly prominent in the IOR. Addressing these challenges requires cooperative frameworks grounded in India's vision of Security and Growth for All in the Region (SAGAR), which underscores inclusive and collaborative regional development.[16]

CONCLUSION

The analysis of the Indian Navy's force structure and capabilities underscores its evolving role as a central instrument of India's maritime strategy and strategic deterrence. Across the submarine, surface combatant, and littoral warfare domains, the Navy has made measurable progress in enhancing operational reach, survivability, and deterrent credibility in the Indian Ocean Region (IOR). In particular, the induction of nuclear-powered platforms and advanced missile systems reflects India's growing recognition of the maritime domain as a decisive arena for both conventional and nuclear deterrence.

The submarine force, especially the development of the SSBN fleet under the Arihant-class programme, represents a transformative shift in India's strategic posture by ensuring a survivable second-strike capability. While existing SSN and conventional submarine capabilities provide important operational depth, persistent shortfalls in force levels highlight the gap between doctrinal requirements and actual capacity. Delays in acquisition and modernization continue to constrain the Navy's ability to counter simultaneous threats from regional and extra-regional naval powers.

Similarly, the expansion of surface combatant capabilities through indigenously built destroyers, frigates, and corvettes demonstrates significant advances in domestic shipbuilding and weapons integration. Projects such as the Delhi-, Kolkata-, and Project 17A frigate classes reflect India's gradual transition toward stealth, network-centric warfare, and multi-role platforms. Nevertheless, reliance on foreign-origin propulsion systems, sensors, and select weapons continues to limit full-spectrum strategic autonomy.

At the operational level, the Navy's emphasis on multi-mission platforms and littoral combat capabilities enhances its capacity to address both traditional and non-traditional maritime threats, including sea denial, power projection, maritime security operations, and special forces deployment. However, sustaining these capabilities will require not

only numerical expansion but also greater coherence between naval strategy, industrial capacity, and long-term budgetary commitments.

In sum, the Indian Navy stands at a critical juncture. While substantial strides have been made toward strengthening maritime deterrence and indigenous capability, enduring challenges related to force adequacy, technological dependence, and implementation delays persist. Addressing these constraints will be essential if the Indian Navy is to effectively safeguard India's maritime interests, uphold stability in the IOR, and fulfill its emerging role as a net security provider in the wider Indo-Pacific region.