

The Role of Andaman and Nicobar Islands to Enhancing India's Maritime Security Surveillance Architecture

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Abstract

The Andaman and Nicobar islands are the Linchpin of India's Maritime security architecture. Functioning as an unsinkable aircraft carrier, they integrate commanding Geography, Tri services synergies, collaborative diplomacy and advanced surveillance. To fully realise their potential and responsibly manage ecological, diplomatic and strategic trade offs- India must sustain technical investment, deepen regional partnerships and uphold its Maritime stewardship in the Indo-Pacific.

The possession of Andaman and Nicobars gives to India strategic bases, which if fully utilised in coordination with air power, can convert the Bay of Bengal into a secure area. This situation was measured in 1945 by KM Pannikar in his book India and the Indian Ocean. In modern times technological advancement made the whole Maritime security concept changed, so by making these islands as stronger assets India could strengthen their strong presence into the Indian ocean as well as it could make a strong presence into the Indo- Pacific region. So the Andaman and Nicobar islands are the strategic Maritime assets for India serving a crucial outpost for surveillance, power projection and securing in the Indo Pacific.

Recent technological and infrastructural advancements like surveillance and monitoring system, Naval and Air infrastructure upgrades, unmanned and advanced surveillance assets, coastal security and patrol enhancement, digital governance and management system, strategic and international collaboration have significantly enhanced their role in maritime security.

This paper measures the technological advancements in the Andaman and Nicobar islands have transformed them into a robust hub for India's Maritime security, providing advanced surveillance rapid response and strategic deterrence capabilities in the Indo Pacific region. The ANI is full of marine resources to boost the blue economy of India and it also like outpost for mainland to provide security from external threats.

Keywords: MDA, IFC-IOR, HADR, SLOCs, ANC, EEZ

INTRODUCTION-

India's Andaman and Nicobar islands are not just beautiful tourist spots. They are also India's 'eyes and ears' in the Indian ocean region. The Andaman and Nicobar Islands can play a major role in India's growth, outreach and progress. The Andaman and Nicobar Islands are strategically located about 700 nautical miles southeast of the Indian mainland in the Bay of Bengal, close to key maritime chokepoints.

They lie near the Malacca Strait—an essential global shipping lane connecting the Indian Ocean with the Pacific Ocean—less than a day’s voyage from Port Blair, the capital. These islands straddle vital sea lines of communication, including the Six Degree and Ten Degree Channels, providing India with significant oversight over maritime traffic in the Indo-Pacific region. Their proximity to Southeast Asian countries such as Myanmar (about 18 nautical miles from the northern tip), Indonesia (about 90 nautical miles from the southern tip), and Thailand extends India’s security perimeter eastwards. They add over 300,000 sq km to India’s Exclusive Economic Zone with potential undersea resources.

The Andaman and Nicobar Islands (ANI) occupy a uniquely strategic position in the Indian Ocean Region (IOR), significantly enhancing India’s maritime security architecture. Geographically, this archipelago stretches over 800 km from north to south and consists of more than 570 islands, islets, and rocks, out of which only about 38 are inhabited. These islands are situated at the juncture of the Bay of Bengal and the Andaman Sea, offering India a commanding presence over major sea lines of communication (SLOCs).

The Andaman and Nicobar Islands are an archipelago situated in the southeastern Bay of Bengal, approximately 1,300km southeast of the Indian mainland and much closer to Southeast Asian nations like Indonesia, Thailand, and Myanmar. These islands stretch over 750km north to south, and their strategic position allows India to monitor the vital Sea Lines of Communication, especially near the Malacca Strait—one of the world’s busiest maritime chokepoints. Their location projects India’s maritime presence deep into the Indian Ocean, enhancing surveillance, securing trade routes, and providing a crucial forward base for defense operations in the region

The development of ANI is imperative due to the emergence of south east Asia as a major economic and trade destination, resulting in increasing trade and China's growing power. The islands not only enhance India's strategic frontiers, but also by virtue of their location are proverbial bridge to South Asia. Development of great Nicobar Islands close to Malacca strait would provide India with an advantageous position and surveillance over this critical area. Its dominance of SLOCs and potential as a forward base for strategic forces could say for the development in the region. Andaman and Nicobar Islands are not just a geographical entity but a vital asset for India’s maritime security strategy, enabling enhanced surveillance, power projection, and regional cooperation in the Indo-Pacific.

Fig.1 ANI and mallacca strait



source - NMF, New Delhi

“The Gulf of Malacca is the mouth of crocodile, the peninsula of Malaya being the upper and jutting and the Sumatra being lower Jaw. The entry of the Gulf can be controlled by the Nicobar.”¹

Due to Strategically located at the crossroads of the Bay of Bengal and the Andaman Sea, the Andaman and Nicobar Islands (ANI) hold a vital position in India's maritime security framework. Situated near key international Sea Lines of Communication (SLOCs), such as the Malacca Strait, the archipelago has gained increased significance amid rising geo-strategic competition in the Indo-Pacific, particularly due to China's assertive maritime posture. Consequently, ANI has emerged as a pivotal asset in safeguarding India's maritime interests and enhancing its maritime surveillance and security architecture.

Strategic Security Significance of Andaman and Nicobar Islands-

The strategic positioning of the Andaman and Nicobar Islands (ANI) extends India's geographical reach into the eastern Indian Ocean, acting as a vital platform for projecting influence toward the East. This location is particularly valuable for conducting humanitarian aid, disaster relief operations, and out-of-area contingency (OOAC) missions². Over the years, ANI has played a central role in shaping regional security initiatives involving India and the littoral states of the Bay of Bengal. India has established formal bilateral mechanisms to conduct coordinated patrols (CORPAT) with Malaysia and Indonesia in the Andaman Sea and the Strait of Malacca. Additionally, India organizes the biennial multilateral naval exercise MILAN at Port Blair, promoting regional cooperation and maritime security.

The Andaman and Nicobar Island also represent the first line of Defence against conventional threats from the east and could be vital to India's implementation of anti-axis area denial Strategy against inimical elements that may attempt access to IOR getting hostilities. India's status as a regional power in IOR makes it incumbent upon the country to ensure a free and uninterrupted flow of global trade through the region. Conversely, in the event of any conflict with China these Islands provide a vantage point from which China straight and energy flow could be indicated.

Andaman Nicobar islands as India's key maritime surveillance hub in Indian Ocean Region-

The Andaman and Nicobar Islands (ANI) hold a unique and powerful position in India's maritime strategy. Located at the crossroads of major sea lanes in the eastern Indian Ocean, these islands serve as the country's forward operating base for monitoring maritime activity. More than just islands, they act as India's “eyes and ears” in the ocean. Due to their location near key choke points, especially the Malacca Strait, and their increasing military and surveillance capabilities, these islands have become an essential part of India's surveillance and security setup in the Indian Ocean Region (IOR).

Unsinkable Aircraft Carrier-

Because of their location and spread over the eastern Bay of Bengal, the Andaman and Nicobar Islands are often called India's “unsinkable aircraft carrier”. The Andaman and Nicobar Islands are called India's “unsinkable aircraft carrier” because they are a natural and permanent base in the Indian Ocean. Unlike real aircraft carriers that can be damaged or sunk during war, these islands are stable and cannot

¹ Panikkar ,KM , India and the Indian Ocean (London: George Allen and Unwin Ltd, 1945), p. 21.

² An out-of-area contingency (OOAC) mission refers to military operations conducted beyond a nation's borders. These missions can encompass a wide range of activities, including humanitarian assistance, disaster relief, protection of national interests, and supporting friendly nations.

be moved or destroyed. And always ready to defend India's interests in the sea. Due to special location near straits of Malacca through which nearly 40 % of global trade passes, one of the world's most busiest maritime trade sea routes. This gives India a strong position to watch and monitor shipping lanes. The archipelago provides ideal locations for airstrips, naval bases, radar stations, and missile installations. For example, from the islands, India can launch aircraft, drones, and naval vessels quickly to monitor or counter any suspicious activity in the region. In this way, the Andaman and Nicobar Islands act like a permanent, unsinkable warship stationed in the sea, giving India long-term military reach and dominance in the Indian Ocean Region. They also act as the first line of defense for India in its eastern maritime flank."

The Andaman and Nicobar Command: A Tri-Service Backbone

The Andaman and Nicobar Islands became an important center for surveillance after the Andaman and Nicobar Command (ANC) was set up in 2001. It is the only place in India where the Army, Navy, and Air Force work together as one team, helping them coordinate better. The main office is in Port Blair, and it manages several key bases like Car Nicobar, Shibpur, and Campbell Bay, which help watch over the sea and allow fast military action when needed. The presence of naval surveillance aircraft, army missile units, and air force radar installations under one command gives India the unique advantage of joint force projection. The synergy created under the ANC not only enhances interoperability but also ensures that intelligence gathered through multiple channels—radars, satellites, sonar buoys, or patrol missions—is synthesized into a cohesive operational picture. This makes the ANI a responsive and dynamic platform capable of swiftly countering any threats to Indian maritime interests.

India's "Deep Ocean watch" surveillance system-

The Indian Navy is preparing to launch a high-tech underwater tracking system in key areas of the Indian Ocean Region (IOR). The main goal is to detect and monitor Chinese submarines and keep vital sea routes safe. This project, called "Deep Ocean Watch,"³ is being built with help from the Defence Research and Development Organization (DRDO). It will place advanced sensors in important locations like the Ninety East Ridge, the Bay of Bengal, and waters near the Andaman and Nicobar Islands. These zones are crucial because they are close to busy shipping lanes and have seen more submarine activity recently. Since 2020, China has been sending more submarines into the Indian Ocean, including both diesel-electric and nuclear-powered ones. For example, a Chinese research ship named 'Dong Fang Hong 3' spent a month studying the Ninety East Ridge. Indian officials believe it was collecting data to help Chinese submarines move more easily in that region. The Ninety East Ridge is a long underwater mountain range stretching from the Bay of Bengal to the Southern Ocean and is important for underwater movement. India's new sensor system will use technologies like seafloor sonar, sonar towed by ships and aircraft, Magnetic Anomaly Detectors (MAD)⁴, and ultra-sensitive devices called Superconducting Quantum Interference Devices (SQUIDS)⁵ that can detect weak electric signals from

³ The "Deep Ocean Mission" is a project by the Indian Ministry of Earth Sciences (MoES) focused on exploring and utilizing deep-sea resources sustainably.

⁴ Magnetic anomaly detection (MAD) is a technique used to detect submarines by identifying disturbances they create in the Earth's magnetic field. These disturbances, caused by the submarine's ferromagnetic material, are detectable even at a distance.

⁵ SQUIDS (Superconducting Quantum Interference Devices) are ultra-sensitive sensors used to detect minute magnetic fields emitted by submarines for underwater surveillance.

submarines. It will include passive sonar to listen for submarine noises and active sonar that sends signals and listens for echoes to find them in real time.

Airborne and Surface Surveillance from ANI-

India's P-8I Poseidon aircraft, based mainly at INS Rajali and occasionally operating from airfields in the Andaman and Nicobar Islands (ANI), are vital for maritime surveillance over the Bay of Bengal and the eastern Indian Ocean Region (IOR). These aircraft are equipped with advanced radar, Magnetic Anomaly Detectors (MAD), sonobuoys, and torpedoes, giving them the capability to detect, track, and engage submarines and vessels in real time.

Supporting this aerial surveillance, Indian Navy warships operating from strategic bases such as INS Baaz (Campbell Bay), the Naval Air Station at Port Blair, and Car Nicobar Airfield are fitted with sophisticated HUMSA-NG sonar and electronic warfare systems. Together, these assets enable India to maintain a strong underwater and surface monitoring presence in the region, enhancing maritime security and rapid response capabilities.

Multilateral Engagements and Data-Sharing Architecture-

The Andaman and Nicobar Islands (ANI) have become the nerve centre of India's maritime surveillance and defence efforts in the Indian Ocean Region (IOR). At the heart of India's Maritime Domain Awareness (MDA) strategy, ANI hosts an advanced network of radar stations and coastal monitoring systems. These systems are linked to the Information Fusion Centre–Indian Ocean Region (IFC-IOR) in Gurugram, which gathers data from Indian sensors, partner countries, and satellite sources to track suspicious ships, submarines, and research vessels. ANI's real-time data feeds are vital in keeping watch over Indian waters. India further boosts its surveillance through White Shipping Agreements, data-sharing pacts with over 40 nations, to monitor commercial shipping, making ANI a major hub for regional monitoring. International partnerships also play a major role. India conducts joint patrols with nations like Indonesia, Thailand, Myanmar, and Australia, using ANI as a launch point. It seeks to link its surveillance systems with the U.S.-Japan-led "Fish Hook"⁶ undersea defence network that tracks submarine movements Japan to Southeast Asia. India aims to extend this network westward through the Bay of Bengal and the wider Indian Ocean. Through the Indo-Pacific Maritime Domain Awareness Initiative (IPMDA), India also receives real-time data from allies like the U.S., Japan, and Australia, further strengthening its ability to detect and respond to maritime threats in the region.

Infrastructure development and upgrading for better surveillance-

India is undertaking substantial military infrastructure enhancements in the Andaman and Nicobar Islands, focusing on modernizing airfields, expanding jetties, upgrading logistics and storage facilities, and improving troop accommodations, alongside significantly strengthening surveillance systems and communications networks. These upgrades enable the deployment of larger and more numerous military assets, such as warships, aircraft—including P-8I maritime patrol planes and fighter jets—missile batteries, and additional troops. Work includes extending airstrips at key naval air stations to accommodate bigger aircraft, enlarging jetties for larger vessels, and improving vital road links between the islands' northern and southern regions to handle heavier traffic flow. On one of the northern islands,

⁶ Fish Hook is a U.S.-Japan undersea surveillance network that tracks Chinese submarines in the Indo-Pacific using sensors from Japan to Southeast Asia.

plans are moving forward to boost surveillance systems further and establish a permanent habitat for Indian force .

The National Remote Sensing Centre (NRSC) has been tasked with enhancing satellite surveillance and data analysis for 55 inhabited islands in the Andaman and Nicobar group and Lakshadweep to improve monitoring and security. These developments come in response to the region's growing strategic importance, particularly for monitoring shipping traffic through the critical Strait of Malacca, a key maritime route for global trade and energy supplies, and also as a security response to increasing Chinese activity and for better surveillance systems.

Conclusion-

The Andaman and Nicobar Islands (ANI) hold a crucial position in bolstering India's maritime security and surveillance framework, primarily due to their advantageous location at the intersection of the Bay of Bengal and the Andaman Sea, close to key international Sea Lines of Communication (SLOCs) such as the Malacca Strait. As India positions itself as a leading security provider in the Indo-Pacific region, ANI acts as a frontline maritime hub, ensuring an active presence in a geopolitically sensitive zone.

The islands have become a strategic centerpiece for enhancing India's maritime domain awareness (MDA), facilitating timely threat detection, intelligence collection, and continuous tracking of maritime activity in the region. The development of integrated surveillance infrastructure — including radar stations, coastal monitoring systems, and multi-agency coordination centers — has greatly improved India's capability to detect and counter threats such as piracy, trafficking, illegal fishing, and adversarial military actions.

Additionally, the islands foster operational synergy among the Indian Army, Navy, and Air Force through the unified Andaman and Nicobar Command, which enhances maritime coordination and enables swift military responses. Their strategic value also extends to humanitarian aid, disaster response, and operations beyond national borders, reinforcing India's regional preparedness and influence.

With China's growing naval assertiveness and intensifying competition in the Indo-Pacific, enhancing the surveillance and defense capabilities of ANI is not only a strategic necessity but a cornerstone of India's maritime security doctrine. To fully capitalize on the strategic utility of these islands, sustained efforts in infrastructure development, connectivity, military modernization, and regional partnerships are vital.

In essence, the Andaman and Nicobar Islands represent far more than a remote territory — they are a strategic asset and a force multiplier, essential for protecting India's maritime interests and projecting its power across the Indo-Pacific.

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