

India's Naval Modernization

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India has been modernizing its naval capabilities in recent years, building its own aircraft carrier, constructing new attack submarines, enhancing its maritime capabilities, and influence to become a major player in the Indian Ocean region (IOR).

As the Indo-Pacific strategic and economic importance increased, India, the largest country in South Asia, initiated efforts to strengthen its naval defense and enhance regional influence. Some of the significant activities by India included improving maritime domain awareness, maritime partnerships and joint exercises with the US, Japan, Australia, and France, and regional partnerships through port access and logistics agreements.

India's naval fleet and strategy

India's naval fleet now includes two aircraft carriers, 10 destroyers, 12 frigates, and 20 corvette ships. India is increasingly positioning itself in the region as a 'net security provider' (a term first suggested by former U.S. Secretary of Defense Robert Gates in 2009) to emerge as a key regional and security player.¹ To address new challenges and strengthen its capabilities, India is focused on naval modernization efforts to improve the country's maritime security, expand regional influence, and to better respond to potential threats.

Some of the major initiatives and developments in India's naval modernization include:

- Development of indigenous vessels, systems, and weapons
- Acquisition of new ships and submarines
- Construction of new naval bases and facilities
- Strengthening cooperation with other countries through joint exercises, training programs, and defense cooperation agreements.

INS Vikrant - India's first home-built aircraft carrier

In recent years, New Delhi is bolstering its domestic defense industry since Prime Minister Modi aligned the vision of the country's development and security with self-reliance. One of the notable examples of this strategy was the commissioning of India's first indigenously aircraft carrier ship, INS (Indian Naval Ship) Vikrant, in September 2022.² Prime Minister Modi said

1. Anit Mukherjee, India as a net security provider: Concept and Impediments, RSIS, August 2014. https://www.rsis.edu.sg/wp-content/uploads/2014/09/PB_140903_India-Net-Security.pdf

2. IRIA, India commissions its first indigenously built aircraft carrier after 17 years of construction, IRIA News, September 03, 2022. <https://www.ir-ia.com/news/india-commissions-its-first-indigenously-built-aircraft-carrier-after-17-years-of-construction>

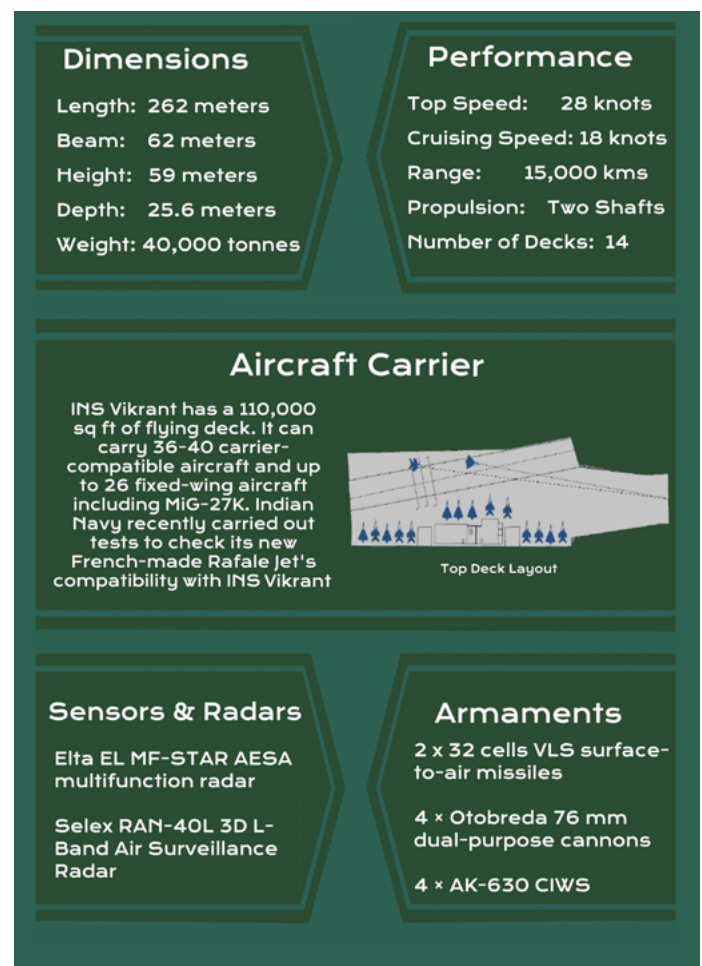


Indian Navy's MIG-29K aircraft on the flight deck of the indigenous aircraft carrier Vikrant. (Image Credit: PTI/via ET)

INS Vikrant is a modern and technologically advanced aircraft carrier, with a length of about 262 meters and a displacement of 43,000 metric tons. “The carrier is equipped with the latest equipment and systems” and is designed with a “very high degree of automation for machinery operations, ship navigation and survivability”.³ It has the capacity for over 1,600 crew on board. The warship can carry 30 aircraft. The aircraft carrier’s estimated cost was around \$2.5 billion.

India now has two aircraft carriers. INS Vikramaditya, the country’s older aircraft carrier, was built in the Soviet Union in 1987. It served with the Soviet navy under the name Admiral Gorshkov, and later India purchased it in 2004 for \$2.35 billion.

As India looks to counter growing Chinese influence and developments in the region, it has also planned a third aircraft carrier, 65,000 tonne INS Vishal, with superior power projection capabilities. Girish Luthra, retired vice admiral and India’s former commander-in-chief of the Western Naval Command, said that India must accelerate its naval capability development, including the acquisition of a third aircraft carrier, as a key regional player “to strengthen stability, security, and safety in the Indo-Pacific” and to respond to “security challenges posed by the widening footprint of the PLA Navy, the potential of China-Pakistan collusion”. He emphasized that a third locally-built aircraft carrier is “very much needed and fits well with the role that India should play in the region, as well as for our security requirements.”⁴



3. ABB, VM, Savvy, Prime Minister Shri Narendra Modi commissions India's first indigenous aircraft carrier INS Vikrant in Kochi, Press Information Bureau Government of India Ministry of Defence, September 02, 2022. <https://www.pib.gov.in/Pressrelease-share.aspx?PRID=1856230>

4. Shashank Mattoo, India must acquire its third aircraft carrier, says retired vice admiral, Mint, September 07, 2022. <https://www.livemint.com/news/india/india-must-acquire-its-third-aircraft-carrier-says-retired-vice-admiral-11662541368636.html>

Some other major projects for naval modernization:

- Project-75 to build six Scorpene class conventional attack submarines. India launches its sixth and final Scorpene submarine in April 2022. Designed and developed by French naval shipbuilder Naval Group, the submarines were built at the state-owned Mazagon dockyard in Mumbai under a transfer of technology partnership.⁵

- Indian Navy has also built four stealth guided-missile destroyers under its Project 15B. The fourth stealth destroyer under this program was launched in May 2022.⁶ The ships are equipped with state-of-the-art weapons and sensors, including a vertically launched

missile system for long-distance engagement of shore, sea-based, and air targets. The P15B destroyers have been designed by the Indian Directorate of Naval Design. It features “improved survivability, seakeeping, stealth, and ship maneuverability” and can carry and operate two multi-role helicopters.⁷

- India is also building stealth frigates under Project 17A and the third frigate of this project was launched in September 2022. This indigenously designed stealth frigate will be equipped with advanced weapons. The Nilgiri-class frigates will be fitted with a 127mm main gun, two 30 mm AK-630M anti-aircraft artillery systems, two torpedo tubes, and launchers for eight BrahMos surface-to-surface supersonic cruise missiles, and 32 Barak-8 surface-to-air missiles.⁸

Nuclear-powered submarines

India is the sixth country to have nuclear-powered submarines with ballistic missile launch capabilities alongside the United States, United Kingdom, Russia, France, and China.

The successful test of a ballistic missile fired from its first indigenous nuclear-powered submarine, INS Arihant, on October 14, 2022, validated India’s second strike nuclear capability.



Indian Navy's Visakhapatnam-class indigenous P15B stealth guided missile destroyer. (Image Credit: Wikimedia Commons)

5. Press Release, Launching of the Vagsheer, the sixth Indian Kalvari-class submarine with Scorpene® design, entirely made in India, Naval Group, April 20, 2022. <https://www.naval-group.com/en/launching-vagsheer-sixth-indian-kalvari-class-submarine-scorpener-design-entirely-made-india>

6. Indian Navy Press Release, Second Project 15B Destroyer Delivered to the Indian Navy, Naval News, November 24, 2022. <https://www.navalnews.com/naval-news/2022/11/second-project-15b-destroyer-delivered-to-the-indian-navy>

7. Indian Navy, Mormugao-Second Ship of Project 15B Launched at Mazagon Docks Mumbai, Indian Ministry of Defence, February 26, 2019. <https://www.indiannavy.nic.in/content/mormugao-second-ship-project-15b-launched-mazagon-docks-mumbai>

8. Naval Technology, Nilgiri-Class (Project 17A) Frigates, Naval-technology.com, December 17, 2020. <https://www.naval-technology.com/projects/nilgiri-class-project-17a-frigates>

The submarine-launched ballistic missile (SLBM) is “significant to prove crew competency and validate” its ballistic October 14, 2022, validated India’s second strike nuclear capability. The submarine-launched ballistic missile (SLBM) is “significant to prove crew competency and validate” its ballistic missile submarines (SSBN) program which is “a key element of India’s nuclear deterrence capability,” according to the Indian Ministry of Defense.⁹

The ballistic missile test from its submarine, named the Arihant (Destroyer of Enemies), hit the target area in the Bay of Bengal with “very high accuracy”, allowing the Indian Navy to assess and verify various technological and operational capabilities of the system.

The Indian Navy currently has 15 diesel-electric submarines, one nuclear-powered general-purpose attack submarine, leased from Russia, and one ballistic missile submarine. In 2019, New Delhi signed a \$3 billion contract for the lease of another Akula-class nuclear submarine (SSN) from Russia for 10 years. India is also pursuing an ambitious plan to build six nuclear-powered submarines as an effective deterrent against China and Pakistan. India has also recently constructed two submarine bases.

India, which has historically imported submarines from France, Russia, and Germany, has now focused efforts to develop more vessels indigenously to have its own infrastructure and technology as well as to boost the local defense industry. India is rigorously upgrading its naval capabilities, prioritizing submarines powered by nuclear reactors that have abundant power, and can operate for extended periods of time with unlimited range.



Indian Navy’s INS Vikrant aircraft carrier during sea trials. (Image Credit: Cochin Shipyard)

9. ABB/Savvy, INS Arihant carries out successful launch of Submarine Launched Ballistic Missile, Press Information Bureau Government of India Ministry of Defence, October 14, 2022. <https://pib.gov.in/PressReleasePage.aspx?PRID=1867778>



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