

The Commissioning of INS Arighat: Strengthening India's Naval Prowess and Nuclear Deterrence

India's defense capabilities reached a new milestone with the commissioning of its second nuclear-powered ballistic missile submarine (SSBN), INS Arighat, on August 29, 2024. The event, led by Defence Minister Rajnath Singh in Visakhapatnam, marks a significant enhancement in India's maritime strength and solidifies its nuclear deterrence strategy. With this commissioning, India now boasts two operational SSBNs, ensuring robust second-strike capabilities and an expanded nuclear triad. This article delves into the significance of the INS Arighat, its strategic importance, and what it means for India's naval future.



[Source: SiliconIndia]

A Milestone in India's Defense Evolution

1. The Growing Importance of SSBNs

The commissioning of INS Arighat represents a vital evolution in India's defense architecture, especially in the maritime domain. Nuclear-powered ballistic missile submarines (SSBNs) like INS Arighat are central to maintaining a credible nuclear deterrence. With its ability to remain submerged for prolonged periods and equipped with submarine-launched ballistic missiles (SLBMs), the SSBN ensures that India possesses a second-strike capability—an essential factor in the country's nuclear doctrine.

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2. SSBNs and the Nuclear Triad

India's nuclear strategy is based on a credible minimum deterrence posture with a no-first-use policy. To bolster this strategy, the nuclear triad—comprising land-based ballistic missiles, air-launched nuclear weapons, and sea-based SLBMs—provides comprehensive retaliatory capabilities. The INS Arighat's commissioning strengthens this triad, making it harder for adversaries to neutralize India's nuclear forces in a first-strike scenario.

The Development of INS Arighat: Building on the Arihant Class

1. From INS Arihant to INS Arighat

INS Arighat is a part of the Arihant class of submarines, developed under the highly secretive Advanced Technology Vessel (ATV) program. The first vessel in the series, INS Arihant, was launched in 2009 and commissioned in 2016. INS Arighat, although visually similar to INS Arihant, boasts several technological advancements and enhancements, reflecting India's growing expertise in submarine design and nuclear propulsion technology.

2. Technological Advancements in INS Arighat

Compared to its predecessor, INS Arighat is designed with a higher degree of stealth and improved navigation and communication systems. Its K-15 SLBM system, which has a range of 750 km, provides formidable strike capabilities. Future upgrades could potentially equip the submarine with K-4 missiles, extending its range to over 3,000 km. INS Arighat is also expected to carry a larger payload, making it a critical asset in India's maritime strategic arsenal.

Strategic Significance of INS Arighat's Commissioning



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[Source: Hindustan Times]

1. Enhancing India's Second-Strike Capability

The primary role of an SSBN is to ensure that even if an adversary launches a debilitating first strike, a country can retaliate with devastating force. INS Arighat significantly enhances India's second-strike capability. By remaining submerged and undetected for extended periods, it ensures that India's nuclear deterrent is secure from a surprise attack. With two operational SSBNs, India can now maintain a continuous at-sea deterrence (CASD), rotating between patrols to keep at least one SSBN always on duty.

2. The Indo-Pacific Context

INS Arighat's operational deployment is expected to focus heavily on the Indo-Pacific region, where geopolitical tensions are on the rise, especially with the increasing assertiveness of China. India's enhanced maritime presence, combined with the strategic positioning of its SSBNs, serves as a deterrent not only against regional rivals but also against any broader international threats. The submarine's ability to operate undetected in these waters ensures that India maintains a strategic upper hand in this vital region.

Naval Expansion and Modernization: INS Arighat in Context

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1. A Step Toward a Stronger Navy

India's naval modernization efforts have gained significant momentum in recent years. INS Arighat's commissioning is part of a broader strategy to expand and modernize the Indian Navy's submarine fleet. In addition to SSBNs, the Indian Navy is also focused on building nuclear-powered attack submarines (SSNs) and conventional diesel-electric submarines. The development of larger, more advanced SSBNs with enhanced missile range is already underway.

2. Future Submarine Projects

India is planning to commission its third SSBN, INS Aridaman (S4), in the coming year. This submarine will carry more SLBMs and operate with greater stealth capabilities. Additionally, a fourth SSBN, codenamed S4*, is also under construction. With these developments, India is rapidly expanding its nuclear submarine fleet to address the growing maritime security challenges in the Indo-Pacific and beyond.

Collaboration with Indigenous and International Partners

1. Indigenous Development: The Role of DRDO

INS Arighat is a product of India's indigenous defense technology efforts, spearheaded by the Defence Research and Development Organisation (DRDO). The submarine's nuclear propulsion system, missile technology, and other critical components have been developed in collaboration with Indian shipyards and other defense firms. This project highlights India's growing self-reliance in the defense sector, a key objective of the "Atmanirbhar Bharat" (Self-Reliant India) initiative.

2. Collaborative Defense Partnerships

While INS Arighat is largely an indigenous effort, India has also benefited from strategic partnerships with countries like Russia, which has provided critical technical expertise and support in submarine technology. These partnerships have enabled India to build a strong submarine fleet, ensuring that it remains competitive with other major maritime powers.

Challenges and Opportunities Ahead

1. Technical and Operational Challenges

Despite the successful commissioning of INS Arighat, challenges remain. The operational deployment of an SSBN is complex, requiring coordination across multiple branches of the armed forces, including the Navy and Strategic Forces Command. Ensuring that the submarine remains undetected during its patrols and managing its nuclear reactors in a safe and secure manner are ongoing challenges that will require constant vigilance.

2. Global Strategic Implications

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INS Arighat's commissioning also carries significant global implications. As India enhances its nuclear deterrence capabilities, it will likely influence the strategic calculations of other regional powers, particularly China and Pakistan. The growing SSBN fleet also positions India as a more assertive player in international naval diplomacy, particularly in the Indo-Pacific region, where strategic competition is intensifying.

The Broader Impact on India's Defense Policy

1. Strengthening Deterrence Against Regional Adversaries

INS Arighat plays a key role in deterring potential aggression from regional adversaries. For Pakistan, India's SSBN fleet represents a substantial escalation in strategic deterrence, making it increasingly difficult to challenge India's nuclear posture. For China, which has its own growing fleet of SSBNs, India's ability to maintain continuous at-sea deterrence adds a new layer of complexity to the regional balance of power.

2. India's Emerging Naval Doctrine

INS Arighat's commissioning signals a shift in India's naval doctrine, emphasizing the need for a blue-water navy capable of projecting power far beyond its shores. As India expands its naval capabilities, including aircraft carriers, destroyers, and nuclear submarines, it is positioning itself as a major maritime power in the Indo-Pacific. This aligns with India's broader strategic objectives, including protecting vital sea lanes, securing its maritime interests, and countering the growing influence of rival powers in the region.

The commissioning of INS Arighat marks a pivotal moment in India's defense history. As the second nuclear-powered ballistic missile submarine in India's fleet, INS Arighat enhances the nation's nuclear deterrence capabilities, strengthens its maritime security, and underscores its commitment to building a world-class navy. In the coming years, as India continues to expand its SSBN fleet and modernize its naval forces, it will play an increasingly central role in shaping the security dynamics of the Indo-Pacific region and beyond.