






China's undersea expansion and shadows over India's nuclear deterrence

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INDIAN NAVY SUBMARINE PROGRAM: STATUS, GAPS, & STRATEGIC IMPACT		
DOMAIN	STATUS & TECHNICAL GAPS	STRATEGIC IMPACT
 CONVENTIONAL FLEET (SSK)	 Force Atrophy: Down to roughly 16 older hulls.  Aging Assets: Composed of aging Russian Kilo-class (Sindhughosh) and German Type 209 (Shishumar) boats requiring life-extension refits.  Modernisation Gaps: Six newer French-designed Kalvari-class (Scorpene) boats lack indigenous AIP plugs, shortening underwater endurance.	 The Indian Navy is unable to maintain continuous, multi-station attack submarine patrols across the Western and Eastern naval commands simultaneously.
 PROJECT 751 & PROJECT 77 (SSN)	 Project 751 Delays: The 70,000-crore rupee project to build six AIP-equipped conventional submarines has faced decades of procedural resets, finally seeing 40,000 crore cleared for its first phase at the end of 2024 .  Project 77 Stagnation: The vital Project 77 to construct six indigenous nuclear-powered attack submarines (SSNs) remains delayed in design and funding phases.	 India lacks high-speed, long-endurance hunter-killer nuclear submarines to actively shadow Chinese assets entering the Indian Ocean.

Indian Navy Submarine Program

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The strategic architecture of what until yesterday was being called the Indo-Pacific is being rewritten not only on the surface of its highly contested sea-lanes, but hundreds of meters beneath them. For decades, maritime discourse surrounding the Sino-Indian rivalry focused primarily on China's "String of Pearls" strategy—a network of commercial ports from Gwadar to Chittagong capable of hosting the People's Liberation Army Navy (PLAN). Today, that paradigm has shifted to an acutely dangerous domain: the rapid, highly industrialised expansion of China's nuclear and conventional submarine program. As Beijing successfully narrows the qualitative gap with Western navies and achieves an unprecedented quantitative advantage, the traditional undersea equilibrium in the Indian Ocean Region (IOR) is dissolving. This expansion fundamentally alters the nature of nuclear contestation between China and India, threatening the survivability of New Delhi's

nascent sea-based nuclear deterrent. Amid bureaucratic delays and structural gaps, India's ability to respond effectively remains stuck in an anxious race against time.

SCALE AND SOPHISTICATION OF BEIJING'S UNDERSEA ARMADA

The transformation of the PLAN Submarine Force is defined by two simultaneous breakthroughs: massive, industrialized manufacturing capacity and rapid technological maturity. The epicentre of this development is the expanded Bohai Shipyard in Huludao, which boasts a specialized, covered construction facility featuring three parallel assembly lines. This infrastructure allows China to assemble up to six nuclear hulls simultaneously—a manufacturing throughput that outpaces the combined production capacities of the United States and the United Kingdom.

By mid-2026, China's active nuclear submarine fleet has grown to approximately 32 hulls, surpassing Russia to become the world's second-largest nuclear undersea force.

FORCE PROJECTION (ESTIMATED ACTIVE FLEET COUNT, 2026)

China: 32 Nuclear Hulls

India: 2 Nuclear Hulls (SSBNs)

Historically, Western analysts dismissed Chinese nuclear submarines as “noisy” and easily trackable. However, recent developments demonstrate that the qualitative gap is closing rapidly.

- **The Type 095 (Sui-class) SSN:** In early 2026, open-source satellite imagery and synthetic-aperture radar confirmed the launch of China's first third-generation Type 095 nuclear-powered attack submarine from the Bohai yard. The Type 095 incorporates Western-style hydrodynamic refinements, an advanced nuclear reactor, an X-tail rudder arrangement for superior littoral manoeuvring, and a pump-jet propulsor. Combined with advanced floating-raft vibration isolation and anechoic tiling, the Type 095's acoustic signature approaches that of modern Western attack submarines.
- **The Type 096 SSBN:** Sharing the hull lineage of the Type 095, China's next-generation Type 096 ballistic missile submarine is nearing operational deployment. Expected to carry up to 24 of the new JL-4 submarine-launched ballistic missiles (SLBMs), the Type 096 will give Beijing an assured, highly quiet second-strike capability that can target the continental United States and regional adversaries from the safety of well-defended bastions like the South China Sea.
- **Conventional Modernization:** Alongside its nuclear surge, China continues to churn out advanced Type 039A/B/C/D Yuan-class conventional submarines equipped with Stirling-cycle Air-Independent Propulsion (AIP). These exceptionally quiet diesel-electric boats are uniquely optimised for ambush operations and anti-submarine warfare (ASW) in the shallow choke points of the Malacca Strait and the northern Indian Ocean.

The proliferation of quiet PLAN hulls breaks the geographic isolation that historically characterized the Sino-Indian nuclear balance. India's strategic deterrence posture is built upon a policy of No First Use (NFU), necessitating a highly survivable triad to guarantee a devastating second-strike capability. The crown jewel of this posture is the sea-based leg: the nuclear-powered ballistic missile submarine (SSBN). However, China's undersea expansion destabilizes this posture across three distinct strategic vectors.

1. **The peril of “undersea blindness” in the IOR:** The regular deployment of Chinese Type 093B and the newly minted Type 095 attack submarines into the Indian Ocean fundamentally complicates the deployment of India's SSBNs. Indian ballistic missile submarines, such as the INS Arihant and INS Arighat, must egress from their home ports on India's eastern seaboard—specifically the Shipbuilding Centre (SBC) in Visakhapatnam and the deep-water base at INS Varsha—into the Bay of Bengal. If the Bay of Bengal is routinely patrolled by quiet, long-endurance Chinese hunter-killer attack submarines (SSNs), India's SSBNs can no longer slip into deep waters undetected. The threat of being tracked or “trailed” from the moment of port-egress compromises the core requirement of an SSBN: complete ambiguity of location.
2. **The asymmetry of the sea-based triad:** There is a profound structural asymmetry between the two nations' sea-based [nuclear arms](#). India's Arihant-class submarines carry the K-15 missile (with a modest range of 750 km) or the K-4 missile (with a range of 3,500 km). Given the geography of the Asian landmass, an Indian SSBN must navigate to the northernmost reaches of the Bay of Bengal simply to bring major Chinese [political](#) and economic centres into launch range. Conversely, China's current Type 094 and future Type 096 SSBNs, armed with long-range JL-2 and JL-3/JL-4 missiles, can strike any square inch of Indian territory from secure bastions within the South China Sea, without ever entering the Indian Ocean.
3. **The proxy undersea front:** Beijing is actively exporting this undersea advantage to encircle India. Through a multi-billion-dollar defence agreement, China is supplying Pakistan with eight Hangor-class conventional submarines (variants of the Type 039A/B Yuan-class equipped with AIP). The arrival of these platforms, coupled with the construction of Chinese-engineered submarine support infrastructure at Gwadar and Ormara, forces the Indian Navy to divide its anti-submarine assets across a dual-front maritime threat, effectively stretching New Delhi's operational capacity to its limits.

IS INDIA RESPONDING EFFECTIVELY?

India's defence establishment is acutely aware of this shifting balance, yet its response has been a paradoxical mix of elite, localized indigenous successes and systemic, bureaucratic inertia.

In strategic terms, China is building a submarine force that can support both nuclear deterrence and conventional coercion, while also expanding its operational reach well beyond its immediate littoral. That makes its submarines a force multiplier for a blue-water [navy](#) and an instrument of political pressure in peacetime, not merely a wartime weapon.

India's response is directionally correct because it recognizes that sea-based nuclear deterrence and anti-submarine warfare are inseparable. But India is still in a transitional phase: it has improved capability, yet its force levels, industrial pace, and procurement timelines remain behind the scale of the challenge. The key test ahead is whether India can convert the current burst of activity into a sustained undersea posture—one that combines more SSBNs, a credible SSN future, and a genuinely dense ASW network across the Indian Ocean.

THE SUCCESSES: INDIGENOUS NUCLEAR CONSOLIDATION AND AERIAL ASW

Where India has found success, it has done so by insulating its strategic programs from standard procurement cycles. The Advanced Technology Vessel (ATV) project has successfully delivered India's first two indigenous SSBNs (INS Arihant and INS Arighat), with two larger follow-on boats slated to solidify the strategic fleet by 2027. Looking further ahead, early fabrication work has commenced on the next-generation S5-class of SSBNs—massive 13,500-ton vessels capable of carrying 12 long-range intercontinental ballistic missiles.

In terms of active defence, India's most effective tool against Chinese underwater intrusion is its fleet of Boeing P-8I Neptune maritime patrol aircraft. Armed with magnetic anomaly detectors, sonobuoys, and Lightweight Torpedoes, these aircraft operate out of INS Rajali and the Andaman and Nicobar Islands, maintaining a highly effective airborne surveillance net over the primary entry choke points of the Indian Ocean, such as the Malacca, Sunda, and Lombok Straits.

THE DEFICITS: THE CONVENTIONAL ATROPHY AND BUREAUCRATIC DRIFTING

Despite these strategic successes, India's broader underwater combat capability is suffering from structural atrophy. The critical gaps in India's response can be analysed across two main categories—domain status & technical gaps and strategic impact (Check Table 1, sourced from public information).

The critical vulnerability lies in this conventional shortfall. While India has built an impressive airborne surveillance capability with its P-8I fleet, aircraft can only detect and deter; they cannot maintain a permanent, covert physical presence under the waves. Without a robust fleet of attack submarines (both SSNs and AIP-equipped SSKs), India lacks the defensive screening required to protect its carrier strike groups and safeguard its strategic SSBNs as they move into deep waters.

CONFRONTING THE UNDERSEA REALITY

The undersea balance in the Indo-Pacific has passed the point of theoretical speculation. China's dual-track mastery of high-volume [naval](#) shipbuilding and cutting-edge acoustic silencing—epitomized by the rapid deployment of the Type 095 and Type 096 classes—has altered the parameters of strategic deterrence.

India is not entirely defenceless. Its strategic nuclear enclave has proven it can build operational SSBNs, and its naval air wing maintains an impressive watch over the IOR's surface entry points. Yet, an effective response cannot be mounted on strategic weapons alone. Until New Delhi overcomes the systemic, bureaucratic roadblocks that have crippled its conventional submarine modernization, it will continue to face an uncomfortable reality: the waters of the Indian Ocean are turning increasingly transparent to Beijing, while remaining dangerously opaque to New Delhi.

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