



### IS NEW DELHI PREPARED FOR A NUCLEAR SUBMARINE-CROWDED INDIAN OCEAN?

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The strategic importance of the Indian Ocean has turned its waters into a growing area of competition between the People's Republic of China (PRC) and India. The strategic value of the Indian Ocean is only going to heighten as the PRC's global clout casts a shadow over India's rapid economic rise in Asian geopolitics. This has created an intense structural stress on their

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bilateral relationship, which has spawned fierce strategic competition between India and the PRC in the Indian Ocean. The preferred means for both nations "to exert influence in the ocean" has been by way of "deep-water port development in littoral states and military patrols".<sup>1</sup> While chances of a potential military conflict between Beijing and New Delhi remains distant in the Indian Ocean, the overlapping influence of both will create a new reality. The Peoples Liberation Army Navy (PLAN) will assert for strategic space, even as the Indian Navy will protect its own. Apart from the number of infrastructure projects launched by the two nations, strategic competition between them has also manifested in their military exercises in the Indian Ocean. In addition, Beijing's usual rhetoric has put great stress on the stability of the region.

#### **'Crowding in' of Indian Ocean: India bothered?**

For New Delhi, PRC's growing influence in the Indian Ocean could have direct implications for the erosion of New Delhi's strategic primacy in its own backyard. PRC's preferred choice of coercive influence, in a bid to carve a strategic space for itself in the Indian Ocean and littorals, is through the deployment of PLAN submarines. There has been a dramatic rise in PLAN submarine visits in the region since 2013, including nuclear

submarines. To demonstrate its naval capability and strategic intent in India's near-seas, PLAN has rapidly increased its undersea presence in the Arabian Sea and the Bay of Bengal.

Another development that will lead to 'crowding' in the Indian Ocean is the announcement of the AUKUS — a new security pact between the United States, the United Kingdom, and Australia — that involves the transfer of nuclear submarine technology to Australia. It has created apprehension in the minds of Indian observers about too many nuclear-powered submarines (SSNs) prowling underneath the Eastern Indian Ocean.<sup>2</sup> The Indian Navy presently dominates the space. However, AUKUS raises the possibility of Australia deploying "nuclear submarines in the Eastern Indian Ocean well before India" positioning its own indigenously built SSNs.<sup>3</sup>

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### India's Submarine Building

India's 30-year-old submarine building plan that ends in 2030 mandates the commissioning of 18 conventional submarines (SSK) and six SSNs for effective deterrence against the PRC and Pakistan.<sup>4</sup> Originally, the plan was to build 24 SSKs. However, in May 2020, the Indian Navy sought government approval for an amendment to the 30-year plan to replace six SSKs with SSNs in the context of changing strategic scenarios in the Indo-Pacific.

After PLAN deployed submarines in the Indian ocean for the first time in 2013, it became apparent that the submarine plan should outgrow its original goals. This feeling was best expressed by then defence minister Manohar Parrikar. In 2016, he said that the submarine plan should continue till 2050 and that India should look to build more than 24 such vessels.<sup>5</sup> Therefore, the question that begets: 'Is the Indian Navy building enough submarines at a pace corresponding to its needs?'

Currently, the Indian Navy's submarine force level is comprised of 14 platforms, far lower than the ideal figure of 24. Table 1 gives a broad overview of the total submarine strength of the Indian Navy. *Sindhughosh* subs (Kilo-class), the mainstay of the Indian Navy's submarine fleet, are fast approaching the end of their service life. There is an increasing likelihood of the Indian Navy struggling to replace these ageing submarines on time as their replacement programme, Project-75 (P-75), has undergone a long gestation period. The project that was signed in 2005 for the contract of six Scorpene-class submarines was supposed to be delivered by the platforms between 2012 and 2016.<sup>6</sup> Yet, the first submarine of that class, INS *Kalveri*, was commissioned only in 2017! Two more boats—the INS *Khanderi* and INS *Karanj*—have been inducted in 2020, while the fourth and fifth ones, called *Vela* and *Vagshir*, are undergoing sea trials.

In a nutshell, India has managed to commission only three conventional SSKs since the

plan began in 1999-2000. The rest of the Kalveri class is now expected to be deployed by 2030, almost a decade and a half later than its scheduled deadline.<sup>7</sup> Therefore, although India feels the need to outgrow the 30-year plan, the three-decade-old programme itself has not produced the expected results!

**Table 1: India's Submarine Assets**

Class	Type	Boats	Origin	Displacement in Tonnes	Commissioning / Status
<b>Nuclear Submarines</b>					
Chakra	SSN	INS Chakra	Russia	8,140	Sent back to Russia for re-fitting after 10-year lease expired in 2021.
Arihant	SSBN	INS Arihant		6,000	
<b>Conventional Submarines</b>					
Shishumar class	SSK (Type209S)	Shishumar Shankush Shalki Shankul	Germany India	1,850	INS Shishumar and Shankush are undergoing a mid-life upgrade to be completed in 2021.
Kalveri class	SSK	Kalveri Khanderi Karanj	France India	1,870	Kalveri, Khanderi and Karanj were commissioned in December 2017, September 2019 and March 2021, respectively.
Sindhughosh class		Sindughosh Sindhydhvaj Sindhuratha Sindhukesari Sinduvijay Sindhuratna	Soviet Union Russia	3,000	Sindhukesari, Sindhuraj, Sindhuratna, Sindhughosh are undergoing a major refit and life certification programme.

Source: Kartik Bommakanti (Ed.), ORF Special Report No. 162.<sup>8</sup>

On the other hand, in June 2021, the defence ministry approved a follow-on project to the P-75, with the goal of indigenously constructing submarines with modern weapons and sensors and an air-independent propulsion system (AIP).<sup>9</sup> Called the P-75(I), the project will construct six SSKs at an estimated cost of INR 43,000 crores.<sup>10</sup> However, experts note that the delivery of those platforms cannot be expected until the middle of the next decade.<sup>11</sup>

As it stands now, the Indian Navy, therefore, will be left with just six new SSKs by the end of this decade, while the rest becomes obsolete.<sup>12</sup> Although its conventional underwater capability is shrinking, Indian SSKs, for now, are well suited to operate in the relatively shallow waters of Sunda.<sup>13</sup> However, the depth of the Lombok strait puts SSKs at a disadvantage. The Indian Navy is currently operating without any SSNs after India returned INS Chakra-2, an Akula-class attack boat leased from Russia, ten months before the expiry of the lease agreement. The focus has now shifted to six SSNs after the then Admiral Karambir Singh took the case for amending the 30-year plan to Prime Minister Narendra Modi and stressed the need for the 6,000-ton SSNs.<sup>14</sup> The Cabinet Committee on Security (CCS) has approved the project in March 2021; however, no foreign original equipment manufacturer has been identified yet for building the

SSNs.<sup>15</sup> More importantly, it is unlikely that even one of these submarines will be commissioned before the next decade.

### Why SSNs?

Conventional attack submarines (SSKs) rely on diesel-electric propulsion systems, which depend on regular refuelling for the diesel generator. Regular refuelling limits its range. Thus, the endurance of SSKs is low as they cannot remain submerged for a prolonged period of time, exposing their detectability. Although the recent introduction of air-independent propulsion systems (AIP) has improved the undersea endurance of SSKs, but according to Jihoon Yu and Erick French, AIP-armed advanced SSKs must also re-emerge at least once every few weeks for recharging.<sup>16</sup>

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SSNs, on the other hand, are powered by nuclear reactors built onboard. Submarines' propellers powered by enriched uranium give the SSNs and SSBNs virtually unlimited range and endurance underwater.<sup>17</sup> Except for the replenishment of crews, there is virtually no limitation on the range and endurance of an SSN. Nuclear submarines can prowl faster due to the greater power-generating capability of nuclear reactors. Nuclear reactors also support larger submarines, which means SSNs can carry more extensive weaponry and sensors. These characteristics provide deadly teeth to SSNs to sink other subs, "especially high-value enemy missile submarines".<sup>18</sup>

### India's search for SSNs continues

It has always been a priority for India to acquire deep technology for SSNs. Reports indicate that the Indian Navy's indigenous SSN programme is still in the design phase.<sup>19</sup> If India is to wait for its indigenous nuclear submarine to reach the phase of commissioning, it will have to confront Chinese aircraft carriers and SSNs patrols in the Indian Ocean without its own SSN. Aware of the situational urgency, India has, therefore, signed a new agreement in March 2019 to get another SSN on lease from Russia. The Bratsk, an Akula-class nuclear-powered attack submarine christened as Chakra-3, is currently being "refitted in a Russian shipyard as per Indian specifications and requirements".<sup>20</sup>

It must be noted that India had also planned to develop a fleet of nuclear attack submarines with help from the US. However, the growing defence cooperation between India and the US has not extended to the realm of nuclear submarine technology. According to reports, the Indian Navy's indigenous SSN programme "require(s) a nuclear reactor more powerful than the one installed in the Arihant-class SSBN".<sup>21</sup> Once the Quad took off, Indian strategic thinkers were quite hopeful of American assistance in providing the Indian Navy with nuclear submarine propulsion technology.<sup>22</sup> So far, the Americans have extended no such helping hand. In fact, post-AUKUS deal, Washington

clarified that the deal with Australia was a “one-off”, which effectively put a lid on Indian expectations for now!

After AUKUS, reports were rife about Delhi considering French assistance with nuclear submarine propulsion technology. There was much talk about French Defence Minister Florence Parly offering the Barracuda-class SSN with a ‘Make in India’ element during her visit to India on December 17 and 18, 2021.<sup>23</sup> The Barracudas are known for their durability to stay submerged for long durations.

It also has a “powerful land attack capability with the 1,000-km-range Scalp Naval cruise missile”.<sup>24</sup> However, no announcement of an offer of technology transfer followed on the heels of the Defence Minister’s visit.

### **India’s ASW capabilities**

Of late, India’s record of strengthening its anti-submarine warfare (ASW) capabilities has been a mixed bag. To boost its maritime reconnaissance and ASW capabilities, the Indian Navy has so far inducted eleven P-8I aircraft from the US-based Boeing. It is scheduled to receive two more P-81 units under the contract even as New Delhi has okayed another proposal by the Indian Navy to procure six more P-8I maritime patrol aircraft for \$2.42 billion in 2021.<sup>25</sup> The central government had also approved a proposal to procure 30 multi-mission armed Predator drones from the US for the three services at an estimated cost of over \$3 billion.<sup>26</sup> However, latest reports have confirmed that India has put the Predator deal on hold to give impetus to indigenous development and manufacturing. Drones are necessary to significantly boost India’s maritime reconnaissance and ASW capabilities. Their long-endurance and high-altitude surveillance makes them potent hunter-killers. The Indian navy has also approved an “unmanned road map” to develop unmanned technologies and platforms with regard to underwater domain awareness (UDA).<sup>27</sup> Apart from gathering information, Unmanned Underwater Vehicles (UUV) can lay mines and sweep the seas around them for enemy submarines.<sup>28</sup>

However, the shortage of multirole ASW helicopters on frontline warships has exposed critical gaps in the Indian Navy’s anti-submarine warfare (ASW) assets to credibly track nuclear-powered submarines as well as conventional submarines. In July 2021, the Indian Navy received two MH-60R helicopters from the US under a contract to deliver a total of 24 units.<sup>29</sup> Until the rest arrives, which in any case will take some time, the Indian Navy’s anti-submarine corvettes will be limited in their ability to hunt submarines in the Indian Ocean Region.

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## What can help Indian Navy?

The need to strengthen its ASW capabilities has prompted the Indian Navy to look for greater naval engagement with like-minded partners. For example, India is working with Japan to set up communication links and a line of undersea sensors in the Eastern Indian Ocean.<sup>30</sup> Yet the formal approval for the installation of a submarine optical fibre cable is only given for connecting Chennai to Port Blair.<sup>31</sup> Such a limited scale of naval/military cooperation with Japan by India is keeping with New Delhi's historical uneasiness of partnering with foreign powers on strategic matters in its backyard.

India has shown apprehension in making QUAD a military partnership in the Indo-Pacific. While India's strategic elite appreciate the logic of expanding military engagement to a quadrilateral format involving Japan, Australia, and the US, the political establishment in New Delhi has been hesitant to participate in a military partnership in the Indian Ocean. This is largely because of the PRC's charge that such engagements are initiated to create an 'Asian NATO', a possibility that even the ASEAN countries resent. New Delhi's non-aligned 'inertia' still makes her sensitive to such 'criticism' (read rhetoric) despite the changing geopolitics of the continent. AUKUS and the recent Japan-Australia defence agreement show that like-minded partners will go ahead to meet the challenges of current geopolitics in the Indo-Pacific.

If India is to reduce its worries about the erosion of its pre-eminence in its backyard in the Indian Ocean, it must cultivate a global network of anti-hegemonic military partnerships to offset its ASW lacunae as well as diminishing power projection in the Indian Ocean.

### Notes:

<sup>1</sup> Eleanor Albert, "Competition in the Indian Ocean", *Council on Foreign Relations*, 19 May 2016. <https://www.cfr.org/backgrounder/competition-indian-ocean>. Accessed on February 11, 2022.

<sup>2</sup> Abhijit Singh, "India is not a bystander in the AUKUS saga", *The Hindu*, 25 September 2021. <https://www.thehindu.com/opinion/op-ed/india-is-not-a-bystander-in-the-aucus-saga/article62105443.ece>. Accessed on February 11, 2022.

<sup>3</sup> Ibid.

<sup>4</sup> Snehesh Alex Philip, "MoD clears Rs 43,000 cr project to build 6 submarines while INS Chakra heads back to Russia", *The Print*, 4 June 2021. <https://theprint.in/defence/mod-clears-rs-43000-cr-project-to-build-6-submarines-while-ins-chakra-heads-back-to-russia/671801/>. Accessed on February 11, 2022.

<sup>5</sup> Ibid.

<sup>6</sup> Kartik Bommakanti (Ed.), "Indian Military Platform Modernisation: Uncertainties, Challenges, and Progress," ORF Special Report No. 162, September 2021. <https://www.orfonline.org/research/indian-military-platform-modernisation/>. Accessed on March 8, 2022.

<sup>7</sup> Chiranjeevi Bhat, “What should be the submarine procurement policy of India to deter growing threats from China and Pakistan: A detailed analysis”, *OpIndia*, 28 October 2021. <https://www.opindia.com/2021/10/an-analysis-on-what-should-be-the-submarine-procurement-policy-of-india/>. Accessed on February 13, 2022.

<sup>8</sup> Kartik Bommakanti, n.6.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

<sup>11</sup> Snehesh Alex Philip, n.4.

<sup>12</sup> Chiranjeevi Bhat, n.7.

<sup>13</sup> H.I Sutton, “India’s Submarines Make Strategic Move To Dominate Indian Ocean”, *Forbes*, 20 June 2020. <https://www.forbes.com/sites/hisutton/2020/06/20/indias-submarines-make-strategic-move-to-dominate-in-indian-ocean/?sh=263b43e2604f>. Accessed on February 13, 2022.

<sup>14</sup> Sandeep Unnithan, “India's nuclear sharks”, *India Today*, 26 April 2021. <https://www.indiatoday.in/magazine/defence/story/20210426-india-s-nuclear-sharks-1791817-2021-04-17>. Accessed on February 13, 2022.

<sup>15</sup> Manpreet Sethi, “AUKUS’ opportunities and risks for India”, Pacific Forum, January 2022. <https://pacforum.org/publication/pacnet-5-aucus-opportunities-and-risks-for-india>. Accessed on February 17, 2022.

<sup>16</sup> Jihoon Yu and Erick French, “The strategic consequences of a South Korean nuclear submarine-risks and rewards for the US-ROK alliance”. *Strategy21*, Winter 2017. p.120. <https://www.koreascience.or.kr/article/JAKO201710565091439.pdf>. Accessed on March 8, 2022.

<sup>17</sup> Ibid.

<sup>18</sup> Alex Gatopoulos, “Project Force: Who will win the underwater arms race?”, *Al Jazeera*, 20 April 2021. <https://www.aljazeera.com/features/2021/4/20/silent-killers-21-century-submarines>. Accessed on February 14, 2022.

<sup>19</sup> Vishal Thapar, “France Set To Offer Barracuda Nuclear Submarines To India”, *Business World*, 15 December 2022. <http://www.businessworld.in/article/France-Set-To-Offer-Barracuda-Nuclear-Submarines-To-India/15-12-2021-414965/>. Accessed on February 15, 2022.

<sup>20</sup> Arzan Tarapore, “Strength in numbers in the eastern Indian Ocean”, *The Interpreter*, 12 December 2019. <https://www.lowyinstitute.org/the-interpreter/strength-numbers-eastern-indian-ocean>. Accessed on January 27, 2022.

<sup>21</sup> Abhijit Singh, n.2.

<sup>22</sup> Ibid

<sup>23</sup> Vishal Thapar, n.19.

<sup>24</sup> Ibid.

<sup>25</sup> Garrett Reim, “India approved to buy six more P-8I maritime patrol aircraft for \$2.42bn”, *Flightglobal.com*, 1 May 2021. <https://www.flightglobal.com/fixed-wing/india-approved-to-buy-six-more-p-8i-maritime-patrol-aircraft-for-242bn/143562.article>. Accessed on February 15, 2022.

<sup>26</sup> PTI, “India set to seal \$3 billion Predator drone deal with U.S.”, *The Hindu*, 17 November 2021. <https://www.thehindu.com/news/national/india-set-to-seal-3-billion-predator-drone-deal-with-us/article37531475-ecce#:~:text=Photo%20Credit%3A%20Reuters-,The%20MQ%2D9B%20is%20an%20unmanned%20aerial%20vehicle%20armed%20with,official%20sources%20said%20on%20Tuesday>. Accessed on February 16, 2022.

<sup>27</sup> PBNS, “India gearing to develop use of Unmanned Underwater Vehicle (UUV)”, *News on Air*, 28 July 2021. <https://newsonair.com/2021/07/28/india-gearing-to-develop-use-of-unmanned-underwater-vehicle-uuv/>. Accessed on February 16, 2022.

<sup>28</sup> Alex Gatopoulos, n.18

<sup>29</sup> Manjeet Negi and Abhisek Bhalla, “Indian Navy receives first two 24 MH-60R helicopters from US”, *India Today*, 17 July 2021. <https://www.indiatoday.in/india/story/indian-navy-receives-first-two-mh-60r-helicopters-from-us-1829217-2021-07-17>. Accessed on February 16, 2022.

<sup>30</sup> Abhijit Singh, “Countering China’s submarine operations in South Asia”, Observer Research Foundation, 24 May 2017, <https://www.orfonline.org/research/countering-submarine-operations-PRC-south-asia/>. Accessed on February 16, 2022.

<sup>31</sup> Ibid.



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