Delhi Policy Group

Advancing India's Rise as a Leading Power

DPG POLICY BRIEF

India's Submarine Decision

Author

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Cover Photographs:

Launch of the Sixth Kalvari Class Submarine, Vaghsheer, at MDL Mumbai on April 20, 2020. Source: Indian Navy

The SSN INS Chakra at Sea. Source: Indian Navy

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by

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On April 26, 2022; a week before Prime Minister Narendra Modi became the first foreign leader to meet President Emmanuel Macron after his re-election, French media reports indicated that the Naval Group had pulled out of the Project 75 (India) (P75I) submarine building programme[1]. A report three days later cited the Naval Group India Country and Managing Director as saying, "the present RFP requires that the fuel cell AIP be sea proven, which is not the case because the French Navy does not use such a propulsion system"[2].

The story was picked up by India's media and selectively amplified, with the dominant narrative being about India's rigid and restrictive RFP conditions and the emergence of a single vendor situation adversely impacting a submarine capability plan that was already far behind schedule, thus causing a setback[3] to 'Make in India' initiatives[4]. But is this a valid narrative? Is the withdrawal of Naval Group (and Russia's Rosoboron export before it[5]) a setback, or just a step along the difficult and complex path to indigenous submarine building capability?

India's Submarine Building Plans and Execution

India began going down the indigenous submarine construction road in the late 1980s, with two boats of the HDW Type 209 India specific variant (Shalki and Shankul) being licence-built by Mazagon Docks Limited (MDL) and commissioned in 1992 and 1994 respectively. Two boats had earlier been constructed by HDW, following contracts for the project signed in December

[1] Naval Group is no longer in the competition for the next Indian submarines, https://www.meretmarine.com/fr/defense/naval-group-n-est-plus-dans-la-competition-pour-les-prochains-sous-marins-indiens

[2] French Defence Manufacturer, Naval group pulls out of India's Project 75 (what it means), https://www.ibtimes.co.in/french-defence-manufacturer-naval-group-pulls-out-indias-project-75-what-it-means-848005

[3] Why France's Naval Group Will Not Participate in India's P75I Submarine Programme, https://swarajyamag.com/context/why-frances-naval-group-will-not-participate-in-indias-p75i-submarine-programme

[4] French defence major opts out of Make in India Rs 43,000-crore submarine project, https://thefederal.com/news/french-defence-major-opts-out-of-make-in-india-%e2%82%b943000-crore-submarine-project/

[5] Russia says it will not bid for Indian Navy's new submarine plan, offers upgrade kilo class, https://economictimes.indiatimes.com/news/defence/russia-says-it-wont-bid-for-indian-navys-new-submarine-plan-offers-upgraded-kilo-class/articleshow/89551419.cms?from=mdr

1981. The objective then, as now, was to create an indigenous ecosystem that would enable India to design and build submarines as well as the systems and sub-assemblies required within the country, thus reducing dependence on external sources. There was an option to construct the fifth and sixth submarines of the class in India. However, an over five fold appreciation of the deutsche mark vis-à-vis the rupee between 1980 and 1992[6], coupled with an increase of the base price by Germany, resulted in the price of these boats escalating more than six times. Since the Kilo-class submarines were being acquired from Russia in parallel and the increased costs of HDW boats were far beyond what was budgeted, the German option was cancelled (the media narrative, stemming from HDW being blacklisted due to allegations of corruption, has been that the last two boats were cancelled due to the political storm arising out of unsubstantiated corruption charges)[7].

Another submarine induction plan designated Project 75 (P 75) was launched in 1992. The four HDW boats were based on 1970s technology, and there was need for submarines with better noise reduction features and tube-launched missiles (TLM). The HDW hull, facilities for construction of which had already been created by MDL, was considered best suited. AIP technology was still in its infancy and it was considered prudent to wait and watch its evolution. There were only two western sources for TLMs (the French Exocet and the US Harpoon). It was assessed that the Harpoon would not be offered to India. Consequently, the French firms Thomson CSF and DCN were engaged as consultants to get the French government to release Exocet TLMs and obtain material packages for the boats from HDW. The P75 project was approved by the Cabinet Committee on Political Affairs (CCPA) in January 1997[8]. As negotiations progressed, this evolved into a project for MDL to build Scorpene submarines in India[9].

In July 1999, the Cabinet Committee on Security (CCS) approved a well-conceived three stage plan for indigenous submarine construction over the 2000–2030 period. The first phase, which subsumed P75, was intended to regain the expertise required for the 'float' and 'move' elements of submarine construction while developing an indigenous ecosystem for these elements. In the second phase {to be completed by 2012 and named Project 75 (India) (P75I)}, a second production line was to be set up in collaboration with another foreign collaborator, involving higher levels of indigenisation. In the third and

[6] Reserve Bank of India Exchange Rate Datat, https://www.rbi.org.in/scripts/PublicationsView.aspx?id=15268
[7] See V Adm GM Hiranandani, "Transition to Guardianship: The Indian Navy" 1991-2000, P 148.
[8] Ibid, P 149.
[9] Ibid

final phase, it was intended that 12 submarines would be designed and built indigenously, based on expertise gained from the first two phases.

Launch of the Sixth Kalvari Class Submarine, Vaghsheer, at MDL Mumbai on April 20, 2020.
Source: Indian Navy

Contracts for P75 were concluded in 2005[10], resulting in the construction of six Kalvari (Scorpene) class submarines by Mazagaon Docks Limited (MDL) in partnership with France's Naval Group (formerly DCN). By then, the intention was that P75 boats would be fitted with Air Independent Propulsion (AIP) systems and TLM. However, the French collaborator did not have the type of AIP India wanted. The decision was made to go ahead, with the boats to be retrofitted later with a DRDO-developed AIP system during their medium refit. The building phase of the plan is drawing to a close, with the sixth and last boat having been launched on April 20, 2022[11]. MDL has reported that about 40% of the content of this submarine is indigenous[12]. Naval Group remains

[10]V Adm Anup Singh, "Blue Waters Ahoy: The Indian Navy 2001-2010", P 53-54
[11]Launch of Sixth Scorpene Submarine 'Vaghsheer' at Mazagon Dock Limited (MDL), Mumbai, https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1818422
[12] 40% Indian-make sub unveiled, vessels set to get green friendly, https://timesofindia.indiatimes.com/city/mumbai/40-indian-make-sub-unveiled-vessels-set-to-get-green-friendly/articleshow/90869600.cms

committed to integration of the DRDO AIP system, as and when it becomes available, into these submarines at a later stage.

Commencement of P75I, which was to run almost concurrently with P75 has, however, been delayed[13] by well over a decade. Expressions of Interest (EOI) for this phase were invited only in August 2019[14]. After evaluation of the submissions of foreign vendors and potential Indian shipyards, Requests for Proposal (RFP) for the construction of six submarines were issued on July 20, 2021[15]. Reports indicate that five foreign vendors and two Indian shipyards were short-listed. The vendors were Spain's Navantia, the French Naval Group, Russia's Rosoboronexport, Germany's ThyssenKrupp, and South Korea's Daewoo Shipbuilding & Marine Engineering (DSME), while the shipyards were MDL and L&T. Only the last two foreign vendors possess proven AIP technology, one of the conditions specified in the RFP. The obvious inference is that the response of the first three was premised on the hope that the fuel-cell based AIP requirement was negotiable. Their withdrawal is thus nothing more than an acknowledgement that it is not.

The third phase of the plan (Project 76) remains on the distant horizon. Launching it in the absence of experience gained from P75I would be premature. But as Project 75 draws to a close, India has two submarine construction projects on the drawing board. The first is P75I, for conventional fuel cell based AIP-equipped conventional attack submarines (SSKs). The second is P75A, for six nuclear attack submarines (SSNs). The questions that arises is, does India need both?

The Changed Geostrategic Environment

Much has been made of the 1999 Submarine Construction Plan and the impact on it of the pullout by firms who have responded to the RFP. The reality, however, is that the passage of time and the changed geostrategic context have rendered the original plan obsolete.

India's threat perception in the 1990s was oriented towards Pakistan. Deterring China was a concern, as brought out in PM Vajpayee's letter to President

[13]Whither Project 75(I) .... And India's Submarine Capability, https://www.spsnavalforces.com/story/?id=352

[14]Request for Expression of Interest (REoI) for short listing of Indian Strategic Partners for construction of six conventional submarines Project 75(I) under the strategic partnership model, https://www.indiannavy.nic.in/sites/default/files/tender_document/REoI%20Indian%20Strategic%20Partners%20P-75%28I%29%20.pdf

[15]MoD issues RFP for construction of six P-75(I) submarines for Indian Navy, https://pib.gov.in/PressReleasePage.aspx?PRID=1737191

Clinton after Pokhran-II[16]. However, the strategy adopted was directed towards placating and not provoking China. The thrust was thus normalising relations with the northern neighbour through increased economic engagement, while deterring adventurism through the nuclear option.

The Indian Ocean at that time was still a strategic backwater. India had not yet articulated an integrated oceanic vision – it was to do so with SAGAR only in March 2015[17]. The PLA (Navy) comprised vintage ships, with a coastal defence focus. The expansion of China's shipbuilding capacity through collaboration with Japanese and South Korean partners, which would in turn result in a massive naval expansion, was still over a decade away. The Belt and Road Initiative, along with the network of dual use Indian Ocean ports, had not been conceived of[18]. It was only after 2008 that China started churning out Type 039 submarines, Type 052D destroyers and Type 054A frigates in large numbers. China began its assertions in the South China Sea with the seizure of Scarborough Shoal in 2012, the same year that President Hu Jintao called for the country to become a maritime power at the 18th Party Congress[19]. China's changed strategic approach towards the seas became clear only when it released its new Military Strategy White Paper on May 27, 2015[20]. Its actions did not, therefore, impinge on the 1999 plan.

The Pakistan Navy, on the other hand, lacked any surface capability to speak of. Its focus was inducting the Khalid (Agosta-90) class SSKs. India's operational objective was countering them, preferably when they left their base, or in predictable deployment areas; finding ways to attack Pakistan's SLOCs that ran along the shallow Makran coast; and defending our own SLOCs. The third task necessitated surface ships and aircraft, the first two were better undertaken by SSKs: they are smaller and quieter than SSNs, and thus more suited to operations in shallow and confined waters. They can, moreover, bottom off the adversary coast (come to a complete stop and rest in complete silence on the sea bed, unlike SSNs, which cannot do this due to the risk of sediment fouling cooling water intakes). SSNs moreover need to always run cooling pumps or other reactor machinery and pump out hot water used for secondary cooling of the reactor, entailing both sound and infra-red signatures

[16]Nuclear Anxiety: India's Letter to Clinton on the Nuclear Testing, https://www.nytimes.com/1998/05/13/world/nuclear-anxiety-indian-s-letter-to-clinton-on-the-nuclear-testing.html
[17] Text of the PM's Remarks on the Commissioning of Coast Ship Barracuda, 12 March 2015, http://www.pib.gov.in/newsite/erelcontent.aspx?relid=116881
[18] It would be announced by President Xi Jinping only in 2013.
[19] Full text of Hu Jintao's report at 18th Party Congress, November 27, 2012, https://www.mfa.gov.cn/ce/ceus/eng/zt/18th_CPC_National_Congress_Eng/t992917.htm
[20] China's Military Strategy (full text), http://english.www.gov.cn/archive/white_paper/2015/05/27/content_281475115610833.htm

that could give away their position. Added to this was a near complete absence of indigenous submarine design knowledge. It is, therefore, no surprise that India's 1999 submarine vision resulted in a plan to build SSKs[21]. Not that India was oblivious to SSNs – the first INS Chakra was obtained on lease from the USSR in 1988 – 1991.

The SSN INS Chakra at Sea. Source: Indian Navy

India's geostrategic outlook stands completely changed following events at Galwan on June 15, 2020. Expectations of a return to the earlier paradigm of relations with China have dissipated. Expressing a widely held belief, India's Chief of Army Staff has been quoted as saying "China intends to keep the boundary issue alive" [22]. Speaking recently on what India could have done better in the past, External Affairs Minister Dr. S. Jaishankar acknowledged "We didn't give as much weight to hard security as we should have" [23]. Describing what we should be doing in the future, he said, "Most of all, in the next 25 years, it is about capability, capability, capability, in every possible domain and in every possible way – we should be utterly fixated on outcomes, we should be utterly practical on how we leverage the international environment – so a lot

[21] For a broader discussion of the submarine capability plan, see Lalit Kapur, 'Whither India's Submarines", https://www.delhipolicygroup.org/publication/policy-briefs/whither-indias-submarines.html#:~:text=India's%20Submarine%20Programme,two%20more%20are%20under%20construction.

[22]'China intends to keep the boundary issue alive,' says General Manoj Pande, https://www.hindustantimes.com/india-news/china-intends-to-keep-boundary-issue-alive-says-general-manoj-pande-101652110284228.html

[23]Dr. S. Jaishankar at the "Chasing the Monsoon: Life@75" session of the Raisina Dialogue, April 27, 2022.

of the conversation we have when we go abroad is about capability building"[24]. So which submarine better adds to India's capability, the SSN or the SSK? What should be the focus of a submarine construction plan adapted to today's geostrategic realities?

Operational Considerations

It is reasonable to assume that both a Chinese Carrier Battle Group (CBG) and SSNs will be continually deployed in the Indian Ocean within the decade. This could result in a situation akin to that involving USS Enterprise in 1971. If India is to "safeguard our mainland and islands and defend our interests"[25] in the Indian Ocean in the years ahead and acquire the capability to do so successfully, it must be able to deter and, if necessary, defeat any threats that may arise. Nor can lessons be drawn from the losses suffered by Russia in the Black Sea recently. The operating area of PLA (N) units will be the open ocean, not an enclosed sea, or coastal waters.

It is not the intention of this brief to suggest the approach towards countering Chinese deployment in the Indian Ocean. Suffice it to say that submarines will necessarily play a vital part. The task of shadowing adversary surface battle groups or SSNs can only be done by SSNs.

Furthermore, there is need for capability to take the offensive to the Chinese doorstep and not concede the initiative completely to the PLA (N). It is theoretically possible to deploy SSKs to the South China Sea. However, their lower range and endurance, transit speeds and geographical constraints (the necessity to travel on surface in the Malacca Straits, for example) and reduced time on station makes their use for such offensive tasks symbolic; they cannot be effective. SSNs will be needed for operational effectiveness.

It is in recognition of this reality that the submarine building plan has been modified to replace six SSKs under Project 76 with an equivalent number of SSNs[26], for which the production line at SBC Visakhapatnam will become available once construction of SSBNs is completed.

[24] Ibid.
[25] Text of PM's Remarks on the Commissioning of Coast Ship Barracuda, 12 March 2015, http://www.pib.gov.in/newsite/erelcontent.aspx?relid=116881
[26] Admiral Sunil Lanba (Retd), former Chief of the Naval Staff, in "Submarine – The Force Multiplier", https://www.spsnavalforces.com/story/?id=771&h=Submarine-The-Force-Multiplier

On the other hand, the requirements against Pakistan remain much the same as they were in the 1990s. SSKs remain better suited for operations in coastal waters and at choke points. India thus needs both SSKs and SSNs.

Propulsion Technology Aspects and Availability

Since the absence of AIP is the cause of both Naval Group and Rosoboronexport withdrawing from P75I, the question arises, why is AIP so important? And what is the impact of its absence?

The key difference between SSKs and SSNs is in propulsion – most other submarine technologies are used by both. AIP bridges, to an extent, the otherwise vast gap between the ability of SSKs and SSNs to maintain high speeds and sustain underwater for prolonged periods. To obtain an understanding of its importance, it is necessary to examine how propulsion technologies have developed in further detail.

A Shishumar-class Submarine of the Indian Navy Source: Indian Navy

The traditional means of propulsion underwater for SSKs (such as the Shishumar, Sindhughosh and Scorpene classes currently used by India) is electric, based on lead-acid storage batteries that need to be charged periodically by running diesel engines (which also propel the submarine on the ocean surface). Combustion of diesel consumes oxygen, which was traditionally drawn from the air, necessitating that the boat (or a snorkel) expose itself by breaching the water surface. But boats (or snorkels) on surface are more easily detected. The ratio of the period the boat is exposed to its total time

on patrol is called the indiscretion rate. This can be as much as 20% or more for SSKs, depending on the underwater speed they maintain. As the availability of air surveillance increases, high indiscretion rates could be the difference between success and failure in the mission.

Moreover, lead-acid batteries are fine for slow speeds. They lose charge rapidly at high underwater speeds (as would be necessary for evading an attack or providing underwater guard for or shadowing a surface group); submarine endurance then drops to minutes. SSKs are thus inherently incapable of escorting or shadowing surface groups, or tailing SSNs.

AIP is an advancement on the traditional lead-acid battery, in that it increases underwater endurance substantially. Three AIP technologies are in common use. The first is the French MESMA (Module d'Energie Sous-Marin Autonome), where heat generated by the combustion of ethanol and high-pressure oxygen is used to generate steam to run a conventional steam turbine (as in an SSN). This technology was used by DCNS (now Naval Group) in Pakistan's Khalid-class submarines. It is also on offer for the Scorpene class. In fact, the Naval Group website states: "... Naval Group's conventional submarine is incredibly stealthy and autonomous thanks to its third-generation Air-independent propulsion (AIP) system, which gives it 18 days of autonomy at sea"[27]. However, MESMA technology has not been widely accepted. Even the French Navy, which relies exclusively on nuclear-propelled boats, does not use it.

The second is the Stirling Cycle engine, which burns diesel and liquid oxygen to run an electrical generator for propulsion or battery charging. This is used by the Swedish shipbuilder Kockums in the Swedish Gotland-class and Västergotland-class boats, Singapore's Archer class and the first ten boats of Japan's Sōryū-class. China also uses Stirling engines on its Type 041 (Yuan class) submarines.

A third AIP technology is fuel cell based, wherein chemical energy from a fuel is combined with stored oxygen to generate electrical power. First developed by Siemens for HDW, 120 KW fuel cells have been used on the HDW Type 209 Mod, Type 212A and Type 214 submarine variants by Egypt, Germany, Greece, Israel, Portugal, Turkey, Singapore and South Korea, among others. Spain developed a fuel cell separately for its S-80 boats. India's Naval Materials Research Laboratory has developed a 270 KW phosphoric acid fuel cell in collaboration with Larsen and Toubro and Thermax. A land-based version of

[27] Submarines, Scorpene, https://www.naval-group.com/en/submarines#:~:text=The%20group%20designs%20and%20builds,or%20nuclear%20ballistic%20missile%20submarines.

this system was tested on March 8, 2021[28]. This AIP will eventually be retrofitted on the P75 boats. Reports yet to be officially confirmed indicate that the IN will provide a Sindhughosh class submarine to DRDO to be used as a test platform, enabling the proving of this and other underwater propulsion technologies (including Li-ion) at sea[29] for Project 76[30]. This, however, lies in the future.

The state of the art underwater propulsion system today is the Lithium-ion battery, which provides a higher power density, faster charging, lighter weight and the benefit of being virtually maintenance free. This technology is presently available only with Japan (on board the submarines Ōryū and Tōryū, commissioned in 2020 and 2021 respectively). It will also be used on the South Korean KSS III submarines presently being built.

AIP technologies reduce a submarine's indiscretion rate substantially, but they do not eliminate it. Only nuclear power, where heat from a nuclear reactor drives a turbine to generate electricity, which in turn drives the boats propellers, does so. Nuclear technology entails high costs, but provides the benefit of virtually unlimited underwater endurance irrespective of speed, with the only limitation being crew fatigue. The USN has exclusively used nuclear technology for all its submarines since the Barbel class constructed in the 1950s, the last of which was decommissioned in 1990. The Royal Navy followed suit after the Upholder class, which saw service till 1992. France did the same after its Agosta class boats, which it used till 2001; it builds SSKs only for the export market now. Russia and China, however, continue to build both SSKs and SSNs, for their own use and for export.

Suitability of India's Plan 2000 - 2030

Around the time India inducted the fourth MDL/HDW built boat (INS Shankul), South Korea launched its own three-phase attack submarine-building plan 1994-2029, with almost identical objectives to India's 2000-2030 plan. The first boat under this plan was built by HDW in Germany; eight others were then built under licence by DSME and delivered from 1994-2001. South Korea also exported three boats of this class to Indonesia in 2017. In the second phase, nine boats equipped with fuel-cell AIP, based on the HDW Type 214 design, were built by DSME and Hyundai Heavy Industries from 2007 – 2020. In the

[28]Fuel Cell based Air Independent Propulsion (AIP) System Crosses Important Milestone of User Specific Tests, https://pib.gov.in/PressReleasePage.aspx?PRID=1703456&s=08
[29] DRDO to get Kilo class submarine from Indian Navy, https://www.psuconnect.in/news/drdo-to-get-kilo-class-submarine-from-indian-navy/32434
[30] DRDO to get submarine to test Electric Propulsion motor, Li-ion battery, and AIP, https://idrw.org/drdo-to-get-submarine-to-test-electric-propulsion-motor-li-ion-battery-and-aip%EF%BF%BC/

third phase, South Korea has commissioned the first of the indigenously designed and constructed Dosan Ahn Changho class in August 2021[31]. Nine boats of this class are to be built, and later versions will have Samsung Lithium-ion batteries. The South Korean plan was remarkably similar to India's 2000 – 2030 plan. The difference lies in the fact that it has already delivered 19 boats (as against only four by India's plan so far). Two separate production lines are functional (with Daewoo and Hyundai). It has successfully exported boats. It has also provided South Korea the acknowledged ability to design and build SSKs with the highest levels of advanced technology.

India's problem does not seem to lie with onerous conditions for transfer of technology – similar objectives and conditions delivered results for South Korea. Indonesia's Law # 16 of 2012 for defence industry imposes similar conditions on foreign vendors intending to supply strategic platforms (including submarines) to Indonesia. The problem appears to lie more with political and administrative (policy-related) factors, including the assurance of long term commitments to domestic industry and the absence of bureaucratic accountability. The cost of the support India has extended to the public sector in long-gestation defence projects is demonstrated inefficiency. But if the private sector is to be incentivised to invest in integration of complex platforms like submarines, it must be provided the same level of support as has been given by South Korea (or Japan), at least till it can become competitive and capture export markets. And the markets are available – an estimate indicates Asian countries will acquire over 100 attack submarines within this decade[32].

Accepting any proposal to build P75I submarines without AIP would be a retrograde step, addressing operational needs with old technology but not doing anything to advance India's indigenous design and construction capability. The resultant boat may be a minor upgrade to P75, but would still rely on lead acid batteries, resulting in a significant operational handicap. Nor can complete reliance be placed on the as yet unproven DRDO developed AIP system. There is thus need for induction of a proven fuel cell based AIP system. This requirement should not be dispensed with, notwithstanding media commentary.

Thus, the Naval Group's dropping out of the P75I programme should not be a cause for concern. Reports indicate that ThyssenKrupp has reconsidered its decision to withdraw from the project if changes are made to the tender

[31]ROK Navy Commissions her first KSS III Submarine, https://www.navalnews.com/naval-news/2021/08/rok-navy-commissions-her-first-kss-iii-submarine/
[32] John Schaus, Lauren Dickey and Andrew Metrick in "Asia's Looming Subsurface Challenge, https://warontherocks.com/2016/08/asias-looming-subsurface-challenge/

requirements[33]. The project is still at the proposal stage, and actual contract conditions are a matter of negotiation. Moreover, there is always the possibility of a government-to-government agreement, as was done for the Rafale aircraft acquisition and other projects, bypassing the tortuous DPP mandated process. The submarine indigenisation programme is not in danger, but it needs important decisions, particularly at the political level.

There is also the risk of submarines becoming vulnerable as oceans become transparent in the years ahead. Detection technology can be expected to advance rapidly now that great power competition is back. Quantum technology offers potential solutions. But this prospect is equally applicable to SSKs and SSNs. It should not handicap a present decision.

There is also the emergence of new technology, which will result in some operational submarine tasks shifting to unmanned underwater vehicle (UUVs) in the years ahead. The inescapable conclusion is that the plan formulated in 1999 can no longer guide future force planning and merits revision. This is probably already under consideration, but remains outside the knowledge of the strategic community.

SSN or AIP Equipped SSK?

In September 2021, Australia abandoned the long-running Shortfin Barracuda SSK programme and took a decision to go in for SSNs, under AUKUS. The primary determinant for this decision was operational effectiveness. There can be little doubt that SSNs will be more effective for Australia, particularly since it faces no potential challenger within 2500 – 3000 Km of its coast (the optimal range for SSK operations). It is, moreover, part of the US alliance system.

The operational environment for India, however, is different. India does have a proximate adversary to its West, where AIP equipped SSKs will undoubtedly be more effective. At the same time, the nation needs SSNs, both for defensive tasks and in order to seize the initiative if required. A balance will have to be struck. If, however, if the political decision is that only one type is affordable, it may be possible to cover the threat from the west using a combination of seabed arrays, greater aerial surveillance, better ISR and faster weapon delivery. Thus, if forced to choose between the SSK and the SSN, the nation would do better to opt for SSNs.

[33]Russia says it will not bid for Indian Navy's new submarine plan, offers upgraded kilo class, https://economictimes.indiatimes.com/news/defence/russia-says-it-wont-bid-for-indian-navys-new-submarine-plan-offers-upgraded-kilo-class/articleshow/89551419.cms?from=mdr

Conclusion

A balance has to be struck between two objectives. The first, one that India has been working on for over two decades, is the development of indigenous submarine construction capability. This will necessarily be a time-consuming process, necessitating development of the requisite technological and industrial base. The second is the maintenance of desired force levels. In the event that the threat is judged to be immediate, this can be dealt with by exploring leasing options, or acquisition under the G-to-G route, bypassing cumbersome acquisition procedures. Till then, indigenous capability development must continue to be prioritised.

Thus, setting up a production line for outmoded P75I submarines without AIP would be a retrograde a decision. India would do better not to take cognisance of shrill media narratives pointing to delays in a two decade old plan that has long been overtaken by geopolitical developments.

There is also need to critically re-examine India's future submarine needs, taking into account the changed geopolitical environment and the advent of UUVs. Ideally, this should include articulation of a revised submarine construction plan. The plan has no doubt been revised, but absence of much-needed transparency has meant that both the domestic strategic community and media are not aware of it. A future revision should also involve a decision on whether India should build both SSNs and SSKs, or join the West in putting all its weight behind SSNs while building UUVs to take on some shallow water tasks. The priority must be developing the capability to deter the bigger challenge - Chinese adventurism in the Indian Ocean. Only SSNs offer that capability.

Finally, there is need for a relook at the management structures involved with decisions regarding capability acquisition. Execution of plans, however, well-conceived, is a function of not just the industry, but also the policy apparatus. The stark difference between execution of submarine capability acquisition plans of South Korea and India that has been highlighted speaks for itself. Reforms will be necessary in both policymaking and execution if the "capability, capability, capability" mantra expounded by EAM Dr. S. Jaishankar is to come to fruition.

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