## Implications of Sea Based Deterrence for Pakistan

**By Majid Mahmood**

### Introduction

The nuclear forces of India and Pakistan are evolving and modernizing as the nuclear era nears two decades after their overt nuclearization in 1998. As the diversity and sophistication of nuclear forces increases in the two countries, both South Asian nuclear powers aim to introduce nuclear weapons at sea. India inducted its first nuclear powered ballistic missile submarine INS Arihant in October of 2016[1] under its ATV project, while Pakistan has successfully test-fired its first ever nuclear-capable submarine-launched cruise missile Babur-III recently[2]. This demonstration has confirmed earlier speculations by experts that Pakistan is set to field advanced conventional submarine for a nuclear role.

As regional nuclear powers move toward triads, however, it is worth examining whether sea-based nuclear weapons are indeed as stabilizing to adversarial dyads as is traditionally held. Cold War analyses of ballistic missile submarine dynamics addressed two large submarine forces, operating in maritime and geostrategic environments that differed from that of South Asia. For the United States, questions of bureaucratic and organizational change, the sustainability of acquisitions, and the advances in antisubmarine warfare capabilities also loomed large in its efforts to establish and maintain a credible assured second-strike delivery system.

The Indian Ocean presents a different geostrategic picture and therefore presents different operational and tactical problems

for the two navies and policymakers—with distinct strategic implications. Therefore, deterrence theories on sea based deterrence developed around the Cold War may not fully explain for the relatively small size South Asian submarine services, the asymmetry between India and China's fleets, and the vagaries of India's naval acquisition and development programs.

An operational sea-based deterrent could hypothetically provide India with a greater sense of existential security vis-à-vis China, but it is unlikely to cause India to abandon its pursuit of additional nuclear capabilities, suggesting that the introduction of an Indian SSBN does not offer the solution to India's perceived security threats from China.

An Indian sea-based deterrent does, however, exacerbate Pakistan's threat perception and it even poses substantial challenges for the Indian decision makers. These challenges are in the domain of nuclear command and control configuration for its nuclear powered submarines, technical requirements of associated systems and doctrinal conceptions. Furthermore, while an Indian SSBN fleet could provide stability at the strategic or nuclear level under certain conditions, it is also likely to generate conventional maritime arms race in the India-Pakistan dyad. The growth of conventional naval arsenals could have a potentially deleterious effect on crisis stability, particularly if they come into contact with naval strategic systems[3].

## Naval Environment in India-Pakistan Context

In August 2013, the reactor for INS Arihant, India's first indigenously built SSBN, went critical, marking a milestone in India's development of advanced undersea capabilities[4]. First launched in 2009 after several years of trials, Arihant is powered by an 83-megawatt nuclear reactor and is expected to carry 12 submarine-launched ballistic missiles (SLBMs), referred to as K-4[5]. India has indicated that it intends to build a five- or six-ship Arihant-class fleet that would provide a secure and assured second-strike capability[6]. Pakistan has also been pursuing the nuclear weaponization of its submarine force, even as it has been in discussions to acquire new air-independent propulsion (AIP) diesel submarines (SSPs) that represent a substantial improvement over its current fleet[7]. Chinese attack submarines have been seen patrolling in the Indian Ocean, which India has taken as an effort to "[undermine] the Indian Navy's [ability] 'to control highly-sensitive sea lines of communication[8].'"

The recent announcement that Pakistan is moving to finalize a contract for Chinese submarines, along with China's continued development of the port at Gwadar, suggests the China-Pakistan maritime relationship is deepening[9]. These developments have serious implications for regional stability. After a series of wars and countless border skirmishes over the last 60 years, the India-Pakistan conflict remains unresolved. Pakistan's disadvantage against India in its conventional military capabilities has endured, and the conventional gap between the rivals will only grow as India invests heavily in new, more advanced weapon systems. India has also developed what is popularly known as the Cold Start doctrine, which calls for a rapid but shallow incursion into Pakistani territory on several

fronts simultaneously. Cold Start is seen in India as a doctrine for limited war, rather than a total war which would certainly invite nuclear retaliation by Pakistan[10].

While the India-China relationship is less volatile but still considerably troubling; there are increasing signs of tensions as India closely aligns itself politically and militarily with US's rebalancing to Asia-Pacific policy. The initial signals from the new Trump administration does not indicate any reversal of the pivot policy even though a Trump-Xi meeting has taken place in early April and some clear picture on the pivot may now emerge as a result. However India – US alignment has a strong naval aspect as can be seen by increasing naval coordination and exercises between Indian, Japanese, Australian and US navies[11]. There is less concern about a surprise trigger event; but there remain outstanding territorial disputes, with occasional flare-ups of tensions such as the September 2014 standoff in Ladakh.

Looking ahead, both India and China are actively pursuing great power status through economic and military development and modernization. In order to continue their rapid growth both sides require secure access to oil. The volume of trade that passes through the Indian Ocean is staggering; roughly two-thirds of the world's petroleum products transit this space, along with 50% of the world's container traffic[12]. The need to protect and control this trade is a critical driver of naval expansion and modernization among regional actors. The combination of economic incentives, pervasive mistrust, US influence and unresolved historical disputes could lead to a conventional and nuclear arms race between India and China, in which the introduction of sea-based nuclear weapons may be a significant development[13].

The literature on deterrence generally holds that SSBNs stabilize deterrent relationships by providing an assured second-strike capability that dampens arms racing behavior and reduces first-use incentives[14]. By making nuclear assets harder to find, SSBNs ensure that even if an incoming counterforce first strike destroyed the land-based weapons, the sea-based arsenal would remain available for counter value retaliation. Once this assured second-strike capability is reached, there should be less incentive for an arms race. With this in mind, the introduction of nuclear weapons at sea could be read as a positive development, particularly between India and Pakistan. If Pakistan can achieve mutual vulnerability with India via sea based nuclear forces, both would be less inclined to pursue a larger land-based nuclear arsenal.

The emerging new public debate within India on potential revision of its nuclear No First Use Doctrine (NFU) indicates developments contrary to the theoretical assumption made above[15]. IF India is seriously contemplating a doctrinal change of preemptive disarming counter force strike with nuclear and conventional assets against Pakistani nuclear forces then it should theoretically be comprehensive and would include targeting Pakistani sea based deterrent assets. The preserving of mutual vulnerability thus is an essential Pakistani imperative in its drive towards establishing deterrence stability.

As long as the thinking that preemptive strike could destroy or significantly erode an enemy's nuclear force before the enemy could respond persists, such a first strike would remain an attractive option for military planners. Strategic stability could thus only be possible with an assured second-strike capability, which would guarantee that the first mover could not eliminate the threat of retaliation. The cost of failing to destroy the

adversary's nuclear arsenal through a counterforce first strike being too high, as the logic went; no rational actor would risk it. To achieve this second-strike capability, strategic assets either had to be hardened so they would be difficult to destroy or they had to be mobile and concealable so they would be difficult to find. Bombers offered mobility, of course, but getting them in the air before a first strike would require sufficient advanced warning of incoming missiles—a serious technological challenge at the time particularly in South Asian situation. More promising was the potential for nuclear-armed submarines: in the subsurface realm, technology favored the defender and hence the logic for both India and Pakistan to add nuclear weapons in the naval strategic milieu.

## Regional Implications

While India views its pursuit of a sea-based nuclear deterrent as supporting its NFU policy, it poses serious repercussions for relations with its regional rivals. India's SSBN force may have effects on China and on Pakistan, including potentially jeopardizing both arms race stability and crisis stability. While it is unlikely that Arihant will induce major changes in China's naval or nuclear policies, it is also unlikely to achieve any of India's strategic aims vis-à-vis China. With Pakistan, however, Arihant and her sisters may generate a new vector for crisis instability. Furthermore, India's SSBN acquisition has increased the pressure on Pakistan which wishes to acquire its own nuclear triad, as well as driving Pakistan's desire for additional conventional naval capabilities.

If Cold War-era deterrence theory holds true, we should expect India's SSBNs to prove stabilizing to its adversarial relationships with China and Pakistan, with two stipulations.

First, in order to avoid undermining the NFU pledge, the submarine-launched ballistic missiles (SLBMs) on board must be imprecise enough that they are appropriate only for a counter value strike and not for a counterforce strike. At this time, the K-4 and shorter-range K-15 may meet this criterion. Second, the SSBN delivery system must be credible and safe in order to provide the assured second strike. If the second strike cannot be assured, the logic of the triad unravels. If first-use incentives cease to exist, states should be less inclined to an arms race, as strategic stability would have been achieved and therefore there is no theoretical military utility to be gained by introducing additional nuclear weapons or systems.

The cold peace that endures between these nuclear-armed adversaries is fragile at best; where a serious crisis in the existing volatile situation could spark a war. Could an assured second strike stabilize the India–Pakistan dyad? It seems unlikely but should Pakistan acquire a triad in pursuit of parity with India, it is possible Pakistan would feel more secure about the survivability of its deterrent and thus its existential security. Given Pakistan's conventional weakness and its adoption of an asymmetric escalation strategy that relies on the threat of first use, it is more likely that Pakistan would simply add sea-based weapons to its arsenal while continuing its development of new delivery systems, both shorter- and longer-range missiles. Sea-based weapons do not resolve the credibility problem surrounding Pakistan's threat of early first use of nuclear weapons against Indian cross-border operations. In reality, mutual vulnerability already exists in South Asia.

Both India and Pakistan would be hard-pressed to eliminate their opponent's entire arsenal in a first strike; but their ISR and targeting capabilities are simply not up to the task and are still

maturing. Thus, both states already face the possibility of a countervalue second strike. Basing nuclear weapons at sea would contribute only marginally to the goal of arsenal survivability, especially if the submarines carrying them are noisy and easily detected. Furthermore, the deployment of Pakistani nuclear warheads aboard an Agosta submarine, the commonly mentioned configuration for a Pakistani sea-based deterrent, introduces the specter of inadvertent escalation. In a crisis, Indian ASW would not be able to tell conventionally-armed Agosta 90Bs from those carrying nuclear warheads, and could unintentionally strike a nuclear-armed boat.

Given the history of mistrust between the two adversaries, Pakistan may believe such an incident to be an intentional effort to degrade Pakistan's second-strike capabilities. Pakistan has also indicated its interest in better ASW, both via new attack submarines and additional air assets. In April 2015, Pakistan concluded negotiations begun in 2011 with China over the purchase of six air independent propulsion (AIP)-equipped Yuan-class submarines[16]. AIP technology helps mitigate one of the biggest weaknesses of SSKs, the need to surface frequently to access atmospheric oxygen, thus providing these submarines the ability to stay submerged for longer periods of time.

## Complicating Crisis Management and Strategic Stability – The Four Arguments

### Bureaucratic and Organizational Change:

The induction of nuclear powered submarines requires significant bureaucratic and organizational change in order to make the delivery systems safe and assured. Without these changes, an adversary may convince itself that the putative second strike capability is not credible or could be attrited. A

more credible and assured second strike can dampen strategic arms race incentives through mutual vulnerability, particularly when the missile ranges are long and the missiles reliable. It also stabilizes crises by mitigating first mover advantages and reducing use-or-lose pressures.

**Advancements in Anti-Submarine Warfare (ASW):**

SSBNs generate a concurrent demand for the ability to monitor and potentially defeat an adversary's antisubmarine warfare (ASW) capabilities—particularly a demand for quiet, nuclear-powered fast attack submarines (SSNs). As ASW capabilities grow qualitatively and quantitatively, the perceived need for additional strategic assets may also increase. During crises, an adversary's ASW assets may generate use-or-lose pressures on strategic systems. SSNs could also cause crises to break out as the result of accidents or incidents at sea.

**Operational Areas and Geostrategic Realities:**

The characteristics of operational areas matter, especially when missile ranges are limited. In South Asia, geostrategic realities make India's SSBNs more threatening to Pakistan than to China simply because of the distances involved. China is less likely to change its nuclear force structure in response to Indian advances, but may opt to deploy more passive and active ASW assets near chokepoints. Operational realities also affect crisis stability. By virtue of their constant mobility, SSBNs carry an unavoidable risk of accidental contact with an adversary during peacetime. The South Asia navies operate in much more congested waters than the Cold War navies did, with an attendant higher risk of accidents or incidents at sea. Congestion also makes ASW more difficult, and Pakistan in particular may fear a surprise attack from an Indian SSBN.

**Naval and Nuclear Doctrine and Strategy:**

Greater clarity about command and control would be stabilizing factors. Naval doctrine and strategy is also important; naval strategies that envision the early, preemptive use of ASW against strategic assets in a crisis are inherently threatening. The growth of India's SSBN fleet beyond a scant handful of boats could be read as a signal that India's commitment to No First Use is weakening, generating upward pressure on strategic arsenals. Beyond the impact of aggressive naval strategy, crisis stability could also be threatened if Pakistani C2 complicates.

## Conclusion

There are numerous pathways by which submarines could be used provocatively without necessarily triggering an open conflict. Currently, there is little dialogue between India and Pakistan or China about how each side perceives naval, particularly subsurface, actions and how these states might mitigate worst-case thinking that could cause crises at sea to spiral. As the quantity and quality of submarines in the IOR—particularly those capable of carrying nuclear weapons or of tracking and killing other submarines—increases, there is a slim but growing danger of accidental or inadvertent escalation in both dyads. While SSBNs may offer some added stability at the strategic or nuclear level, they may exacerbate conventional maritime arms races that could lead to crises with strategic effects.

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## End Notes

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