

## Essay

# Submarines Gain Precedence in Bay of Bengal Naval Order of Battle

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Over fifty navies across the world operate conventional submarines but only a handful possess nuclear propelled platforms. The conventional submarine serve a number of purposes such as deterrence, anti-access, force multiplier, and in some cases, these are for enhancing prestige. It is thus not surprising that submarines are the platform of choice among middle and smaller power navies and many countries across the globe are either acquiring or building to develop undersea offensive and defensive capability. The current global market for submarines is valued at US\$22.4 billion and this is expected to grow to a value of US\$31.3 billion by 2029 which corresponds to a CAGR of 3.40 per cent.<sup>1</sup>

The conventional diesel-electric (SS) variety can operate undetected and unobserved and provide credible conventional capability against enemy surface forces. The SSKs (attack submarines) carry both torpedoes and missiles and offer the best-submerged offensive capability against a major force as also against targets on land.

Modern conventional submarines are lethal with a combination of anti-ship missiles, land-attack cruise missiles and the traditional warfare suite of advanced and wake-homing torpedoes which contributes to credible conventional deterrence against the enemy and extra regional naval forces. Further, Air Independent Propulsion (AIP) systems offer greater endurance and stealth to submarines. This enhances the ability of a smaller navy to challenge a superior naval force.

Nuclear propelled submarines (SSN and SSBN) are strategic platforms and feature endurance, credibility and provide assured retaliatory nuclear strikes by launching nuclear tipped missiles. United States, Russia, France, the United Kingdom, People's Republic of China and India possess nuclear propelled submarines, though India has not yet loaded nuclear missiles on such platforms.

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In the Bay of Bengal, other than India which has operated submarines for over four decades, Bangladesh, Myanmar and Thailand are new comers. This essay explains the rationale for naval build in Bay of Bengal region and submarines in particular. It also highlights the submarine inventory in the region and the essay argues for cooperative measures to support submarine rescue operations.

### **Rationale for Naval Build-up**

There are at least eight reasons for the importance of navies in the overall order of battle (ORBAT) of Bay of Bengal militaries. First, the demands of geography and long coastlines necessitate the Bay of Bengal littoral countries to invest in naval forces and protect sovereignty and safeguard national interests. A second reason for the naval forces is the memory of colonial domination that came from the sea. As a result, the navies are widely regarded as effective forces for prevent intervention from the sea route. The third reason is the necessity to exercise jurisdiction and control over national sea spaces (Continental Shelf, Exclusive Economic Zone, Contiguous and Territorial Waters) under the 1982 Law of the Sea Convention. Bangladesh, India and Myanmar have resolved their maritime boundary disputes and Thailand has no maritime boundary disputes with its neighbours in the Bay of Bengal.

The fourth reason is the trends in defence transformation among countries of the Bay of Bengal region. The thrust is to provide the naval forces high mobility, offensive capability and reconnaissance and surveillance support. The impact of digital transformation has resulted in net centric warfare capabilities acquired by few of the regional navies. The fifth rationale for naval upgrading is the regional security dynamics that have a strong maritime focus. Also, the modernisation of the Indian Navy has been a significant driver and rationale for regional naval growth. The sixth reason is the necessity of capability building that would provide for increased interoperability between the navies of the region and the extra-regional naval forces engaged in the region under cooperative strategies. The seventh imperative for the naval modernization arises from the necessity to engage in constabulary roles and missions to respond to asymmetric and low intensity threats and challenges posed by violent non-state actors. Last but not the least, the eighth reason for the growth of the navies in the Bay of Bengal is the understanding that the naval forces are important instruments for securing political advantages and diplomacy.

In the above contexts, submarines are significant constituent of Bay of Bengal naval ORBAT. It has been noted that "A navy that can field a subsurface capability wields a powerful deterrent against any foe that might seek to deploy maritime forces against it."<sup>2</sup>

## Bangladesh

In 2006, during Bangladesh Prime Minister Begum Khaleda Zia's visit to Pakistan, it was agreed to refurbish and refit two old Pakistan Navy submarines and gift them to Bangladesh.<sup>3</sup> This news prompted India to send a delegation to Bangladesh with an offer of supply of ships and training for naval personnel. However, the Bangladesh Navy had an ambitious agenda to develop a three dimensional navy to thwart any pressures from India and Myanmar, with whom it had unresolved maritime boundary disputes.

In 2010, Prime Minister Sheikh Hasina announced that her country was planning to "equip the Navy with submarine with base facilities to build it as a deterrent force ...if the plan, which has been chalked out for modernisation of Navy, continues, Insha-Allah you will advance much to build a three-dimensional force by 2021,"<sup>4</sup> It approached China for two conventional diesel electric submarines fitted with torpedoes and mines and in 2016, two Ming class named submarines *BNS Nabajatra* and *BNS Joyjatra* were acquired at a cost of US \$203 million.<sup>5</sup> She defended her government decision to acquire submarines and informed the Parliament that "the decision of buying two submarines from China is related to the national interest of Bangladesh, and it won't create any negative reaction in the political arena in the outside world"; besides "the two submarines would play a special role in the "Blue Economy".<sup>6</sup>

In 2019, Bangladesh announced that it was building, with Chinese assistance, a submarine base at Pekua, off the coast of Kutubdia Island in southeastern Cox's Bazaar. A former Bangladeshi senior naval official defended that "we need something permanent for maintenance and berthing of the two submarines...as China is the country that supplied the submarines and they've the technological know-how and expertise to build the base."<sup>7</sup>

## India

Submarines are an important component of the Indian naval ORBAT. The force comprises both nuclear and conventional submarines. In 1988, India acquired a Charlie-class nuclear submarine on three-year lease from the Soviet Union and commissioned it as the *Chakra*. This move was significant for honing specialist skills for nuclear submarine operations as also a design laboratory for developing and testing indigenous nuclear submarine technology. This was followed by another 10-year lease agreement between Russia and India for an Akula-class nuclear-powered attack submarine (Project 971) and it was commissioned as *Chakra II* in April 2012.

Meanwhile, the indigenous nuclear submarine programme (launched in 2009) designated as an Advance Technology Vessels (ATV) matured into the *Arihant*-class of nuclear-powered ballistic missile submarines. The lead ship *Arihant* was commissioned in August 2016. It is equipped with 6x533 mm (21 inch) torpedoes and 12xK-15 *Sagarika* SLBM or 4xK-4.<sup>8</sup> Although the submarine is based on the *Akula*-class and Russian scientists provided assistance, there are some noteworthy contributions by the Indian military-technology complex. Bhabha Atomic Research Centre (BARC) miniaturized the reactor to fit into the hull of the nuclear submarine, the hull was built by L&T's Hazira shipbuilding facility, Tata Power SED (Strategic Engineering division) built the control systems for the submarine and the systems for the steam turbine integrated with the reactor was supplied by Walchandnagar Industries.<sup>9</sup>

The current inventory of conventional submarine force comprises a mix of Russian, German and French origin boats. Ten *Sindughosh*-class SSK submarines were acquired from Russia in the late 1980s and 1990s are the mainstay of the Indian Navy's conventional submarine arm. Some of these have been upgraded from time to time including the fitment of Klub land attack cruise missile. Similarly, the India Navy acquired four HDW type 209/1500 boats (two were built in India) diesel-electric attack submarines of German origin and are designated as the *Shishumar*-class.

The Indian Navy is now acquiring / commissioning the *Kalvari* class diesel-electric attack submarines under two projects i.e. P75 and P75-I. Six such submarines will be built and the lead submarine *INS Kalvari* was commissioned on 14 December 2017. In April 2019, it was announced that the Indian Navy would spend Rs 40,000 crore to build six new submarines under the 'Make in India' programme. The steel would be Indian, armed with tube-launched version of the Brahmos missile and indigenously developed heavy weight torpedo could be integrated to the submarines. The AIP system would also be Indian.

## Myanmar

Interestingly, Myanmar Navy too has had an interest in acquiring submarines. Apparently, it had approached North Korea for a 110-ton Yugo class and 370-ton Sang-O class, but the plan was on hold due to technical difficulties and an ability to operate them.<sup>10</sup> Further, in 2013, few Myanmar naval personnel may have visited Pakistan for submarine training.<sup>11</sup> Apparently, in June 2013, Senior General Min Aung Hlaing, Myanmar's Commander in Chief had visited Russia and may have visited the naval dockyard in St Petersburg where submarines are constructed.<sup>12</sup>

The quest to acquire submarines has continued and Myanmar has now acquired a refurbished Kilo class submarine from India. Furthermore, Myanmar naval personnel “will train on the old sub with the Indian Navy’s help, and then buy a couple of new Kilos from Russia. With those boats, they will “guard their maritime interests.”<sup>13</sup> Earlier this year, India had supplied Advanced Light Torpedo (TAL) *Shyena* torpedoes under a \$US37.9 million export deal signed in 2017.<sup>14</sup>

## Thailand

Thailand has been debating to develop a submarine arm for its navy. It explored the second hand market in Israel, Italy and Netherlands. Interestingly, the Second Defence White Paper (The Defence of Thailand 1996) mentioned the need to acquire submarines. Since then, the Thai Navy has been pressing the government to acquire submarines.

The Thai requirement of submarines also gains salience from the fact that most of the major Southeast Asian navies have acquired submarines and the Thai navy chief has argued that “Submarines are the invisible force of deterrence. They constitute a covert naval strength as they are nowhere to be seen but are present everywhere... Although we don’t have tens of billions of baht to spend on submarines, the navy must be prepared for when we will have them in the near future,”<sup>15</sup> Thailand has been scouting for submarines from South Korea (Bogo Class) but in 2017, China and Thailand signed a US \$ 430 million contract for S26T (Thailand) Yuan class diesel-electric submarine.<sup>16</sup> In 2019, the keel for the first submarine was laid at China’s Wuchang Shipbuilding Yard and the vessel is expected to be delivered by 2023.

Mutual suspicions among some of the Bay of Bengal navies has, therefore, also led to submarine acquisition by Bangladesh, Myanmar and Thailand. For instance, there were sharp reactions from India after Bangladesh announced its submarine plans and the then Indian Navy chief had observed that “Given Bangladesh’s economic situation and the fact that it is surrounded on three sides by India, the acquisition of submarines is not only illogical but actually an act of provocation as far as India is concerned,”<sup>17</sup> Similarly, Thailand sees its neighbours such as Myanmar, Malaysia, Singapore and Indonesia that have submarines, as having an advantage in the regional balance of power. It was no surprise, that Vice Adm Prachachrat, the director-general of the Naval Acquisition Management Office, observed that Thailand is going to enhance its military effectiveness.<sup>18</sup>

## Submarine Search and Rescue Capability

As submarines proliferate in the Bay of Bengal region, it is fair to argue that these platform will be deployed to monitor each other’s activities. It is not implausible that they

encounter each other more frequently while shadowing or snooping. Mechanisms to promote safety and security of submarines in the region is therefore essential. The regional naval planners now need to designate submarine training areas at sea to prevent accidents and establishing 'Hot Lines' for submarine operations. They can come dangerously close to each other and in the context of Bay of Bengal, a regional Incident at Sea Agreement (INCSEA) merits attention.

Also, it is now important to develop mechanisms for submarine safety and rescue during crisis. The Indian Navy has significant submarine search and rescue capability; two Deep Submergence Rescue Vessel (DSRV) systems were acquired in 2018 and these are capable of undertaking rescue operations up to a depth of 650 meters and 14 personnel from the disabled submarine can be brought up at one time.

A regional approach to submarine rescue agreement can be good tool to reduce uncertainties. Greater interactions on ways to enhance maritime cooperation would be necessary as the regional navies acquire more capabilities and further modernize in the coming years.

## Endnotes

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