

The 'Scorpene' class submarine is popular in the region, with Malaysia, India, Australia and Indonesia operating/awaiting/considering different variants of Naval Group's submarine. (Photo: Florian Wöhrl)



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Choke Points

Anti-Submarine Warfare in the Indian Ocean

This article is the first installment of a two part series discussing ASW strategies and capabilities in the Indian Ocean.

Around the Strait of Malacca, India, Indonesia, Malaysia and Singapore are worried about Chinese submarines increasingly transiting through Indian Ocean waters. The US and Australia are also looking with concerns at Chinese activities in the region, including building ties with the Maldives, perceiving it as another exercise to assert its power in the region. Meanwhile, China is also building ties with Pakistan, India's archenemy, through the expected sale of a submarine. On the other side, in the Gulf of Aden, Saudi Arabia, the United Arab Emirates (UAE) and Egypt are waging a proxy war in Yemen against Iran, Turkey and Qatar. This has led to a proliferation of naval bases in Djibouti and an increase in surface vessels in littoral waters, turning the Strait of Hormuz into a choke point.

No. These are not the notes for the script of the next 'House of Cards'-type series taking place in the Indian Ocean. This is merely a broad-strokes summary of the main dynamics playing out in the area, reflecting the complexity of geopolitical interests at stake. It is through this prism that one must look at anti-submarine warfare in the Indian Ocean to understand who is involved, how and with what means. The development of anti-submarine warfare in the Indian Ocean is a story told through choke points.

Choke Point – Strait of Malacca

The first key choke point around the Indian Ocean is the Strait of Malacca. According to Gurpeet S. Khurana, Captain in the Indian Navy (IN) and Executive Director of the National Maritime Foundation (NMF): "The key development leading to the enhanced submarine deployments in the Indian Ocean is China," where the country has been putting a stronger emphasis on sub-surface strategies in the Indian Ocean.

Reports on the number of Chinese submarine sightings in the Indian Ocean vary, but local sources indicate that Indian naval officials have spotted at least seven deployments of People's Liberation Army Navy (PLAN) submarines in the region since 2013. These deployments are believed to be part of China's strategy to secure the Sea Lanes Of Communication (SLOC) it uses for import-export purposes; they aim, according to regional experts such as Abhijit Singh, Senior Fellow and head of the Maritime Security Initiative at the Observer Research Foundation (ORF) in New Delhi, at training PLAN crews to master shallow water operations in the Indian Ocean as well as to collect hydrological and bathymetric data to gather a better understanding of those waters. Chinese presence in the Indian Ocean can therefore be partly explained by the country's increasing dependence on international trade in order to meet key resource needs and access export markets. Captain Khurana confirms: "It flows from the imperative of Beijing

to mitigate its major strategic vulnerability in terms of its seaborne hydrocarbon exports transiting the Indian Ocean."

China is hardly the only country increasingly relying on Indian Ocean SLOCs for its economic growth. As indicated in a report published in 2010 by The Hague Centre for Strategic Studies, 'The Maritime Future of the Indian Ocean - Putting the G Back in to Great Politics': "The safety of the Indian Ocean's SLOCs is of vital importance for the growth of the emerging economies in South and East Asia, as well as the world economy at large. The strategically located choke points are extremely vulnerable to disruptive attacks both from state and non-state actors, including pirates and terrorists."

In this context, as increasing Chinese activities attest, submarines' role as deterrent is now also becoming a key part of the protection of vital SLOCs. However, this incremental submarine traffic in the Indian Ocean may also easily be construed as having more than just a protective role.

As noted in the Hague Centre for Strategic Studies report: "Historically embedded mistrust between China and India is encouraging mutual suspicion regarding each other's maritime intentions, particularly given the tendency of both countries to think in terms of rights and responsibilities within their own naval backyards." While in the past these 'naval backyards' were primarily the South China Sea (SCS) and the Indian Ocean, respectively, with the PLAN's new submarines, which are capable of going father for longer

periods of time, and China's progressive build-up of naval bases in the area, this balance of power is increasingly threatened. As such, the US, India's ally, is also looking at these dynamics with concern and continues to maintain a forward presence in the region. As noted by Matthew Caris, Senior Associate at Avascent in Washington DC: "The US is operating more closely with the Indian Navy and in the last administration there was a major political focus on the region." Nothing indicates that this has changed with the new administration, according to Caris, although one may note more inertia in this regard at the moment.

Choke Points – Around the Arabian Sea

Looking West of India, the Gulf of Aden and the Strait of Hormuz have also become choke points for the region. Indeed, much like the Strait of Malacca, the Straits of Hormuz and Bal-el-Mandeb are key points of passage for ships transporting the energy resources vital to the fast growing economies of Asia and Southeast Asia; and, similarly, they are regularly prone to terrorist and maritime piracy attacks, even though the Combined Maritime Task Force 151, set up in 2009 as a multinational naval task force to combat piracy, has succeeded in decreasing such risks.

However, in addition to their strategic importance for the transportation of resources, these two Straits have also become choke points as a result of the conflict that has been plaguing Yemen since 2015. Following a failed political transition in the wake of the 'Arab Spring' in 2011, between longtime president Ali Abdullah Saleh and his deputy Abdrabbuh Mansour Hadi, the Houthi movement, which

has been fighting a series of rebellions to champion Yemen's Zaidi Shia Muslim minority, launched a new offensive to take control of their Northern heartland of Saada province and, in 2015, took over Sanaa. Sunni Arab regional powers have looked alarmingly at the rise of the Houthi movement, which they believe to be backed by Iran, the regional Shia power. As such, in 2015, Saudi Arabia formed a coalition with another eight Arab states, including the United Arab Emirates, aimed at restoring Hadi's government; the coalition has received logistical and intelligence support from the US, the UK and France.

Consequently, allies efforts to increase their presence in the region through the establishment of naval bases around the Gulf of Aden (mostly Djibouti), combined with coalition forces' attempts to block rebel supply routes from Iran in the Arabian Sea, have resulted into a conflict that is spilling over into the maritime domain. The Straits of Hormuz and Bal-el-Mandeb are right at the centre of all the resulting naval traffic, and although one might argue that the presence of submarines in this region of the Indian Ocean is currently limited, the trends in submarine built-up, albeit less significant than on the Eastern waters of the Ocean, are indicating that this may not be the case for much longer, according to Mr Caris.


ASW – Sub-Surface Response

"Submarines are still a very powerful threat in terms of sea denial, especially for extended SLOCs," indicates Mr. Caris. This is particularly the case for countries that do not have the financial means to develop a multilayered ASW capability like India, China and, to some extent, Singapore.

The expansion of the PLAN is of particular concerns for nations bordering the Indian Ocean or along the Strait of Malacca. Starting with the expansion of the PLAN South Sea Fleet in the early 2000s as well as the regular introduction of nuclear-powered submarines, such as the Type 093 'Shang' class, and the nuclear-powered ballistic missile submarines, such as the Type 095 'Jin' class, in its fleet, the PLAN is now equipped to carry out long missions well outside its usual territorial sphere of influence. "This is triggering an arms race in the Indian Ocean with many of the regional countries enhancing their own capabilities for undersea warfare, including submarines as well as anti-submarine warfare," adds Captain Gurpeet.

The country most concerned with China's expansion in the region, as noted earlier, is India. According to Mr Caris: "India needs to deal with all the threats present in Indian waters, ranging from Chinese submarines in transit, to littoral submarine threats from Pakistan, which means that it is the most full spectrum ASW navy in the region." The sub-surface level of these ASW capabilities includes an ongoing order for six 'Scorpene' class submarines from Naval Group, known in India as the 'Kalvari' class, and which will be armed with MBDA SM-39 anti-ship missiles. The first of class, INS *Kalvari*, was commissioned in December 2017, and Naval Group told Naval Forces that the Indian Navy (IN) should receive the last one by 2027/28. The IN has also launched Project 75i (P75i), which aims at acquiring another six submarines. Current contenders include French firm Naval Group, Russia's Rosoboronexport Rubin Design Bureau, Germany's TKMS and Sweden's Saab.

Located along the Strait of Malacca, Indonesia also finds itself at the heart of the fight to protect SLOCs and monitor Chinese activity. As such, in its 2024 Defence Strategic Plan, the Indonesian government indicated that the Indonesian Navy (*Tentara Nasional Indonesia – Angkatan Laut - TNI-AL*) would be equipped with ten new submarines by 2024 to complement the two 'Cakra' class submarines built by German Howaldts-werke-Deutsche Werft and commissioned in 1981. In December 2011, The TNI-AL signed a contract with Daewoo Shipbuilding and Marine Engineering (DSME) for the construction and delivery of three Type-209 'Nagapasa' class diesel-electric attack submarines (SSK). The first one was delivered in August 2017, while the last is scheduled for delivery

A large submarine, the INS Kalvari, is being moved by a massive yellow gantry crane at a dock. The submarine is decorated with Indian national flags and garlands. A large group of people in uniform and civilian attire are gathered on the dock, watching the event. The scene is set outdoors with a clear sky.

INS *Kalvari* at the Mazagon Dock Limited on the day of her undocking. (Photo: Indian Navy)



The RSN currently operates a fleet of four 'Challenger' class (in the photo) and two 'Archer' class submarines. TKMS will deliver two new submarines: Type 218SG. (Photo: MINDEF)

“The Iranian threat prospective is relatively minimal, with three ‘Kilo’ submarines, that are in questionable repair, as well as mid-gear submarines that would be more effective in the Persian Gulf and the Strait of Hormuz rather than the blue waters of the Indian Ocean,” said Mr Caris. Similarly, while there have been discussions about Saudi Arabia acquiring submarines, it is unlikely that these will be built or operating in the Indian Ocean any time soon, primarily due to the “fundamental problem of political reliability of enlisted personnel,” explains Mr Caris.

Chock-a-Block

“In the coming years, the geopolitical environment in the Indian Ocean is likely to become highly complex with reduced trust between countries that represent ‘haves’ and ‘have nots’ of submarines,” notes Captain Khurana. “In functional terms as well, the sub-surface maritime environment in the region is likely to deteriorate, possibly leading to adverse consequences such as unintentional naval encounters and issues of safety of crews resulting from problems of water-space management.”

As this first part on ASW capabilities and strategies in the Indian Ocean suggests, at presents the choke point most concerned with the issues highlighted by Captain Khurana is the Strait of Malacca, thereby affecting the Eastern and Central part of the Indian Ocean. Nevertheless, as we witness an increasing interest in submarine capabilities around the Western part of the Indian Ocean, albeit far more limited than in the East due to a wide range of factors, the build-up of naval bases on regional islands and along the coast in Oman, Djibouti and Somalia, is becoming enough of a concern to turn regional attention to the importance of ASW capabilities. As such, the next issue of Naval Forces will include part two of this article, which will not only debate surface and air assets capabilities for ASW in the region, but also the increase of naval bases in the region, which could easily result into more sub-surface traffic in the future.

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by 2021. Currently, the TNI-AL is considering different options for the next batch, including the Russian ‘Kilo’ class and Naval Group’s ‘Scorpene’ class.

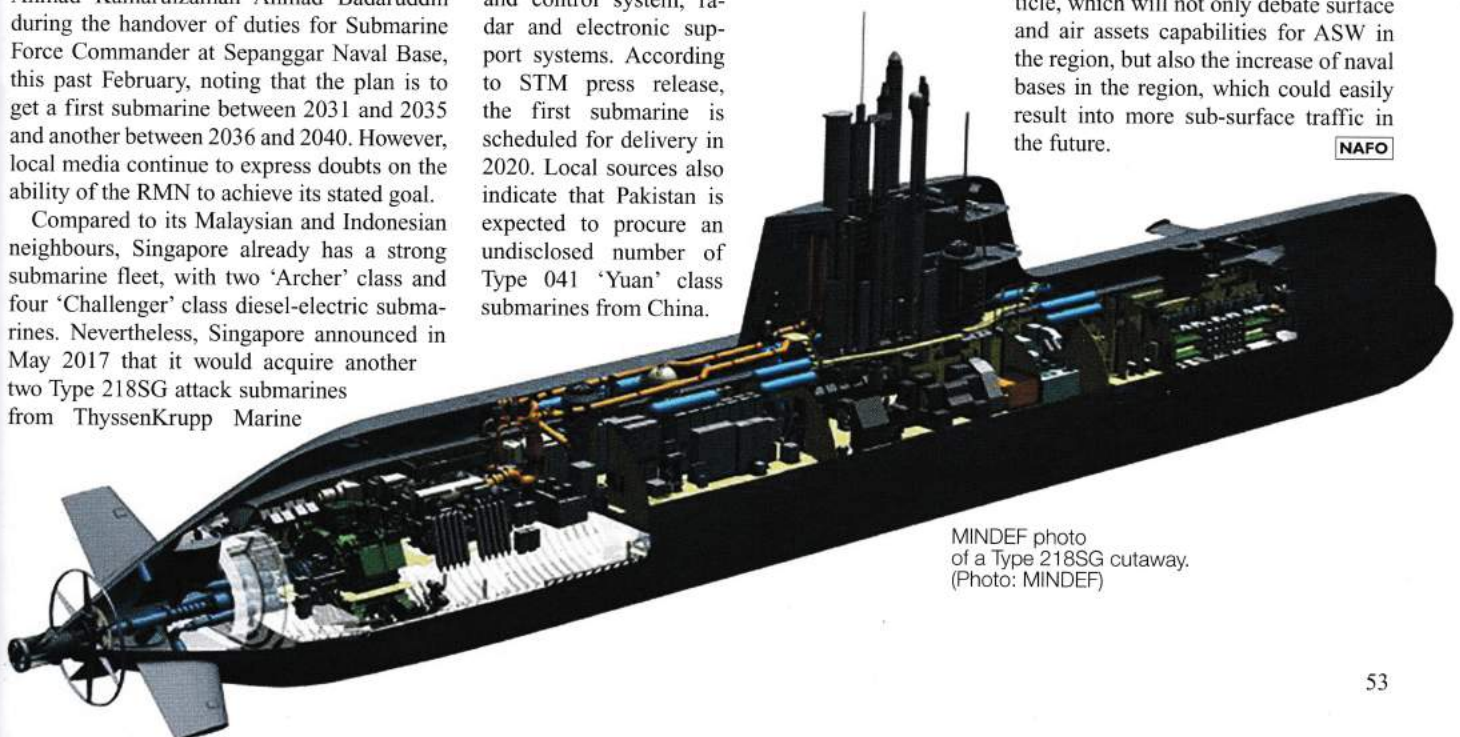
Although it shares its neighbours’ concerns, Malaysia’s ability to develop its submarine fleet has been hampered by constant reductions in its military budget. Indeed, according to World Bank data, the country’s military expenditure as a share of the gross national product (GDP) has been in sharp decrease since it peaked in 1981 (5.7 per cent of GDP), reaching an all-time low in 2016 with 1.4 per cent of GDP. As such, while the Royal Malaysian Navy (RMN) has been arguing the case for a strong submarine fleet, this has yet to materialise. Currently, the RMN operates a fleet of two ‘Perdana Menteri’ (‘Scorpene’) class diesel-electric submarines that were procured in 2002 and were delivered in 2009. Over the past decade, talks have been ongoing with the government to fund a project to acquire an additional two submarines, an ambition that was reiterated by RMN chief Admiral Tan Sri Ahmad Kamarulzaman Ahmad Badaruddin during the handover of duties for Submarine Force Commander at Sepanggar Naval Base, this past February, noting that the plan is to get a first submarine between 2031 and 2035 and another between 2036 and 2040. However, local media continue to express doubts on the ability of the RMN to achieve its stated goal.

Compared to its Malaysian and Indonesian neighbours, Singapore already has a strong submarine fleet, with two ‘Archer’ class and four ‘Challenger’ class diesel-electric submarines. Nevertheless, Singapore announced in May 2017 that it would acquire another two Type 218SG attack submarines from ThyssenKrupp Marine

Systems (TKMS). The two new ships are scheduled for delivery starting 2024, while the first two ships, currently at different stages of construction, are set to be delivered to the Singapore Navy in 2021 and 2022.

Australia is also boosting its submarine fleet with the six ‘Barracuda’ class submarines, based on the ‘Scorpene’ class, ordered from Naval Group in March 2016 under the programme SEA 1000. The first of class is scheduled for delivery by 2020, Naval Group told Naval Forces, while the second, third and fourth are currently at different stages of construction and the fifth has been ordered.

“Going West from India, ASW capabilities are much more limited,” continues Mr Caris, “as these countries do not have the same multi-layered, long-range and close-in approach.” Indeed, at the moment only Pakistan and Iran are operating submarines. Currently, Pakistan operates three ‘Agosta 90B’ and two ‘Agosta 70’ submarines, the former currently being upgraded by Turkish STM to include entirely new sonar suite, periscope systems, command and control system, radar and electronic support systems. According to STM press release, the first submarine is scheduled for delivery in 2020. Local sources also indicate that Pakistan is expected to procure an undisclosed number of Type 041 ‘Yuan’ class submarines from China.



MINDEF photo of a Type 218SG cutaway. (Photo: MINDEF)