

Dr Alix Valenti

# Caught Off-Base

## Anti-Submarine Warfare in the Indian Ocean



Saudi Arabia acquired four Multi-Mission Surface Combatants that should be supported by a Sikorsky's MH-60R 'Romeo' multi-role helicopter. (Photo: Lockheed Martin)



This is the second part of a two-part article, discussing ASW strategies and capabilities in the Indian Ocean.

On 26 October 2006, USS *Kitty Hawk*, part of the US Navy's (USN) Pacific Fleet, was participating in a naval exercise near the island of Okinawa, when a Chinese 'Song' class submarine surfaced within five miles of the aircraft carrier. The fact that USS *Kitty Hawk* was surrounded by a dozen ships in protective formation, including a submarine and an anti-submarine warfare (ASW) helicopter, and that it was impossible to know how long the Chinese submarine had been following the formation unnoticed, raised a number of serious concerns as to US preparedness for ASW. It was a stark reminder of the strategic and operational importance of ASW.

As discussed in the first part of this two part series on ASW in the Indian Ocean, the number of submarines patrolling the region is increasing; this, in turn, is driving a race to procure sub-surface, surface and air assets in order to, where financial and human resources allow, ensure a multi layered ASW capability. While the first part ('Choke Points - Anti-Submarine Warfare in the Indian Ocean', Naval Forces Issue II/2018) discussed submarine procurement around the Indian Ocean through the prism of regional choke points, this second part looks at surface and air assets procurement in the region through the lens of regional bases.

### Covering Bases

Commonly derived from baseball vocabulary, "covering bases" means "to ensure safety, to be prepared for every contingency." One would be hard pressed to find a more appropriate expression to describe what is

currently going on in the Indian Ocean. As Matthew Caris, Senior Associate at Avascent in Washington DC, told Naval Forces: "China is now entering the Indian Ocean in a much more significant way because of its base in Djibouti, its investment in the Pakistani Gwadar Port, and possibly other bases."

As noted by Dr David Brewster, Senior Analyst with the National Security College at the Australian National University, in his article for *The Diplomat*, 'Welcome to the New Indian Ocean' published last February: "A network of bases will help maximise China's options in responding to contingencies affecting its interests, including support for anti-piracy operations, non-combatant evacuations, protection of Chinese nationals and property, and potentially, interventions into the Indian Ocean littoral states or other regional countries." Indeed, long excluded from the region due to its geographic position, however also heavily dependent on regional resources and trade, China sees the building of bases in the Indian Ocean as a strategic move to allow more of its assets to transit and station in the region.

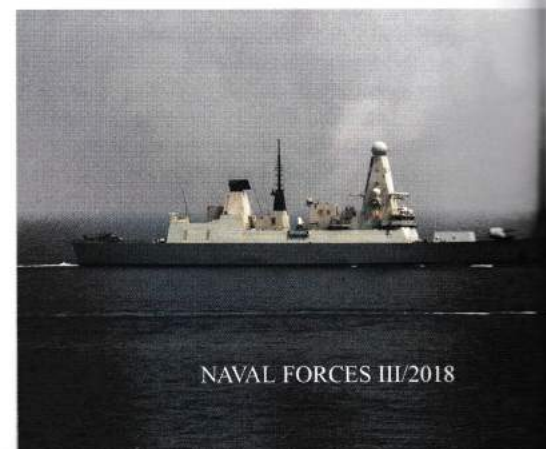
As such, China opened a base in Djibouti in 2017 and will soon be opening another one in the Pakistani port of Gwadar. These two bases will effectively guarantee it access to two of the three main choke points in the Indian Ocean: respectively the Gulf of Aden and the Strait of Hormuz (the third choke point being the Strait of Malacca). Dr Brewster's article also indicated that it is likely that China will open other bases in East Africa and in the central/eastern Indian Ocean. Looking at the current situation in the Maldives, it is certainly looking like a strong possibility.

In December 2017, China and the Maldives signed a Free Trade Agreement (FTA) as well as a Memorandum of Understanding (MoU) that brings the Maldives into the Maritime Silk

Road, part of China's ambitious Belt and Road Initiative (BRI). The FTA with China is the first one the Maldives sign with any country, and both the FTA and the MoU are raising concerns in the region, especially India which used to have strong ties with the Maldives, that China is slowly making a move to secure an economic position of power in an island country marked by its strategic proximity to international sea lanes that see two-thirds of the world's oil and half of its container shipment pass. Perhaps just as importantly, in August 2017, Maldives allowed three Chinese warships to dock in Male: *Changchun*, a guided missile destroyer; the *Jinzhou*, a guided missile frigate; and, the *Chaohu*, a replenishment ship.

This increased presence, according to Mr Caris, drives responses from all countries that have a stake in the Indian Ocean, its resources and its Sea Lines Of Communication (SLOC). For some countries, part of the response is building regional bases as well.

This is predominantly the case for India, which has been building forward operating bases or staging facilities in its Andaman and Nicobar islands, as well as in the islands states such as Seychelles and Mauritius. Moreover, during French President Emmanuel Macron's visit to the country in March, India finalised a defence logistics agreement with France that will allow it to access French military bases in



the Indian Ocean (Reunion Island) and the Horn of Africa (Djibouti). At the end of 2017 India also signed an agreement with Singapore allowing India to dock its platforms in Singapore ports for longer periods and use its facilities. Finally, in February this year India entered into an agreement with Oman that will grant India access to the port of Duqm for logistics and support; Duqm is already a key regional logistics and support base for the Royal Navy and the USN. Altogether, these deals draw a map of India's strategy to counter Chinese expansion in the region, ensuring that Indian Navy (IN) ships can also access choke points and be better positioned to monitor SLOCs.

However, the current tensions between China and India are not the only drivers of increased military attention to the region; the conflict that has been raging in Yemen since 2015 is widely seen as a proxy war between Iran, which is seen to support the Houthi rebel movement in Yemen, and a coalition set-up by Saudi Arabia, which includes the United Arab Emirates (UAE) and is supported by the US, the UK and France. As a consequence, this has driven Saudi Arabia to finalise a deal to establish a naval base in Djibouti, and the UAE to build key naval and air facilities at Assab in Eritrea as well as run a training centre in Mogadishu, Somalia.

## Of the Importance of ASW

As noted earlier, these bases are located along SLOCs essential to trade and near key geopolitical choke points; as such, it derives that the ability to secure access to ports in those strategic spots provides a significant vantage point for any eventuality, be it monitoring maritime traffic on SLOCs, sea control (that is, the ability to patrol the sea bed and do carry out Intelligence, Surveillance and Reconnaissance - ISR), or sea denial (that is, denying the use of the sea by opposing forces), although this would mostly be in the event of particularly heightened tensions.

Typically, those missions are carried out by submarines because they present a number of operational advantages, such as stealth, endurance and freedom of movement. But in a regional environment where so many countries have a variety of interests at stake, the presence of so many submarines patrolling the Indian Ocean has become a threat and has therefore driven a race to ASW assets.

"The ASW capabilities being developed primarily include fixed underwater acoustic sensors for detection and tracking of submarines, defensive sea mines and underwater harbour defence systems," Gurpeet S. Khurana, Captain of the IN and Executive Director of the National Maritime Foundation told Naval Forces. However, he added, details of these are not widely reported or known in the public domain, therefore information is scarce.

Instead, a post published on the NATO's website by its Allied Command Transformation Public Affairs office notes that: "Anti-submarine warfare is based on coordinating sonar and electromagnetic sensors from aircraft, helicopters and ships to detect and track adverse submarines." It is in this context that the bases countries are securing in the Indian Ocean take on all their meaning. The ASW frigates and destroyers, which may also carry ASW aircraft and helicopters, do not have the same endurance at sea as submarines; to ensure long-range ASW capabilities, countries carrying out these missions need to secure access to regional ports for logistics and support.

## India

"Indians have all the threats to deal with," Mr Caris told Naval Forces while referring to Chinese submarines in transit, littoral submarine threats from Pakistan and maritime infiltration by Pakistani; "As such, they have the most full spectrum ASW force in the Indian Ocean."

Starting with the largest platform, the IN currently operates three 'Kolkata' class guided missile destroyers, which were built indigenously by Mazagon Dock Limited (MDL) under Project 15A, and were commissioned in 2014 (INS *Kolkata*), 2015 (INS *Kochi*) and 2016 (INS *Chennai*). The full load displacement of these ships is 6,800t, and while it is a follow-on model of the 'Dehli' class destroyers (Type 15) with a propulsion system on which minor upgrades were made, it is stealthier than its predecessor. With regard to ASW, all three ships are fitted with twin-tube torpedo launchers and RBU-6000 smirch-2 ASW rocket launchers, which can be launched against a submarine within a range of 6km. In January 2011, MDL won the contract for the next generation of destroyers, Project 15 B. The first of class, INS *Visakhapatnam*

was launched in April 2015 while the second ship, INS *Mormugao*, was launched in September 2016. With a displacement of 7,300t and a range of 4000nm (7,408km), the new guided-missile destroyers will feature a high degree of automation and their sleek hull, combined with radar transparent deck fittings, will make them hard to detect. In terms of ASW weapons, the two ships will be fitted with indigenously developed 533mm torpedo launchers and RBU-6000 anti-submarine rocket launchers.

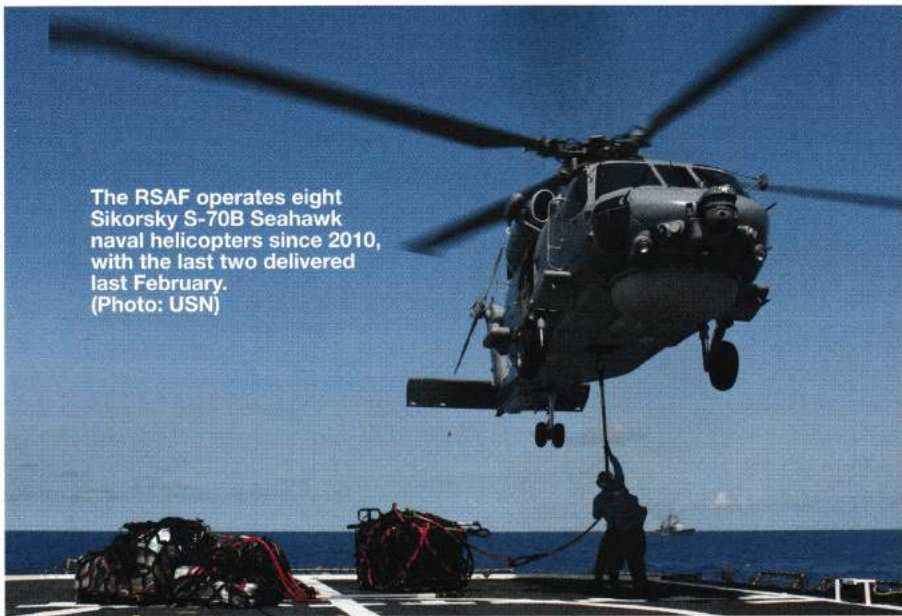
Moving down the tonnage categories, the IN currently operates six 'Krivak III' class frigates and concluded negotiations with Russia in February this year for the procurement of another four frigates. These 3,300t frigates with 4,995nm (9,251km) range will be built by both Russia and India (two each, with transfer of technology) and will feature two twin 533mm torpedo launchers. Seven new stealth frigates (Project 17A) will also be joining the IN in the 2020s as follow-on of the 'Shivalik' class frigates (Project 17). Four of the seven frigates will be built by MDL and the remaining three by Garden Reach Shipbuilders and Engineers (GRSE) under contracts awarded in 2015. The design for these ships was revealed at the Defexpo 2018 exhibition and features a displacement of 6,673t, a range of 5,500nm (10,186km) and a pair of rocket launchers (an indigenous modification of the RBU 6000) as well as a pair of triple-tube torpedo launchers. Construction of the stealth frigates is scheduled to begin by 2020.

Accompanying these critical platforms are the smaller yet still rather powerful 'Kamorta' class corvettes. With a displacement of 3,400t, these ships would actually qualify as frigates, but are called corvettes because they were fitted with the armament of the smaller class of vessels. Sources indicate that such decision was made for operational purposes: the IN needed a blue-water vessel but needed one that would cost less to lose than an actual frigate or destroyer with all its armament. This being said, the three 'Kamorta' class ships, the third one of four having been commissioned in October 2017, feature four heavyweight torpedo tube launchers as well as a pair of 12-barrelled RBU 6000 rocket depth-charge launchers for ASW. They were also designed to have a significantly longer range than their predecessors, the 'Arnala' class: they have a 3,540nm (6,389km) range at 18kts (33km/h).

Finally, in April two companies, Cochin Shipyard Limited (CSL) and GRSE, were shortlisted for the IN 16-ship ASW shallow water craft. The \$2.25billion tender was issued in June 2014 and the programme aims at replacing the ageing Russian-built 'Abhay' class corvettes. The new ships will be designed to be connected to the navy's network centric warfare system, including manned and unmanned platforms, however unlike the other ASW vessels of the navy, these will be designed for coastal ASW specifically and will there-

The IN destroyer INS *Kolkata* and the Royal Navy destroyer HMS *Defender*. The IN will also soon receive the Project 15 B ships, follow-on to the 'Kolkata' class. (Photo: USN)





The RSAF operates eight Sikorsky S-70B Seahawk naval helicopters since 2010, with the last two delivered last February. (Photo: USN)

fore most likely have a range of about 200nm (370km). Little has been revealed of the two short-listed designs, however it would appear that, in line with all other ASW IN ships, these will also feature a RBU 6000 rocket launcher.

The IN, however, currently significantly lacks the helicopter capabilities that would make these new platforms fully fit for a strong ASW fleet: the majority of the 11 Kamov-28 and 17 Sea King ASW helicopters it operates are not operational. In August 2017, the Indian Ministry of Defence (MoD) officially issued a Request for Information (RFI) for 123 naval multi-role helicopters (NMRH) with ASW capabilities and 111 armed light naval utility helicopters (NUH). Thus far, however, only the procurement of the 111 NUH has been approved by the Indian Defence Acquisition Council, with a request for proposals expected soon. Possible options for this procurement could include the Airbus AS565 Panther light naval helicopter and a new variant of the Leonardo (former AgustaWestland) AW109 LUH.

Given India's growing concerns in relation to increased Chinese underwater presence in the Indian Ocean, and taking into consideration the vast expanse of the Ocean itself, it has been crucial for the IN to also modernise its ASW air assets. To this end, in 2009 India became the first international customer for Boeing's P-8I Poseidon maritime patrol aircraft (MPA). The first squadron of eight P-8I was officially inducted in November 2015 and the new unit, the Indian Naval Air Squadron 312-A, is permanently based at the Rajali Naval Air Station. In 2016, India placed an order for an additional four P-8I, which delivery is scheduled to begin in 2020. These MPAs, which have replaced the IN's eight Tupolev-142M, are bringing significantly increased capabilities to the navy, including Harpoon Block-II missiles, MK-54 lightweight torpedoes, rockets and Mark 82 depth charges. According to Boeing, the P-8I

can fly 4,500 miles (7,242km) from base without refuelling, and local media sources have recently indicated that the IN might be looking to acquire more P-8Is soon.

### Going East

While not directly concerned by the Indian Ocean, Singapore nevertheless holds significant stakes in the security of the Strait of Malacca. Strategically positioned where the Strait meets the South China Sea, and therefore on the SLOCs used by China to reach the African continent, Singapore is just as concerned with the increase in the number of submarines in the region.

The Republic of Singapore Navy (RSN) main ASW assets are its eight 'Formidable' class frigates, which were all commissioned in the 2000s. Built by Naval Group (then DCNS) and Singapore Marine Technologies, these frigates have a range of 4,000nm (7,200km), are equipped with two triple-barrelled lightweight torpedo launchers and are armed with the Eurotrop A244S torpedo. They also equipped with the EDO Model 980 ALOFTS active low-frequency towed sonar, which provides long-range detection and classification capability against submarines.

The aircraft capabilities of the frigates are flown by the Republic of Singapore Air Force (RSAF) while helicopter mission crew is from the RSN. The RSAF operates eight Sikorsky S-70B Seahawk naval helicopters since 2010, with the last two delivered last February. The ASW suite of these helicopters, which range is 400nm (740km), includes L3 Helicopter Long Range Active Sonar (HELRAS) Dipping Sonar and Whitehead Torpedoes. For some time, Singapore has also been discussing the idea of acquiring new MPAs to replace its fleet of Fokker 50s, however it remains undecided as to whether it will select the P-8, which would increase interoperability with India,

Saab's Swordfish or IAI's G550. According to local sources the decision is due to be made soon since Singapore wishes to introduce the new aircraft in the early 2020s.

"Indonesia and Malaysia are investing in ASW capabilities because they are concerned about the sheer size of the Chinese submarine fleet," Mr Caris told Naval Forces. However, because from an ASW perspective they do not operate in larger task groups and far away from shores, their focus is more on large frigates and to a lesser extent on MPAs and ASW helicopters.

In October 2017, Indonesia received its second 'Martadinata' class Sigma 10514 Perusak Kawal Rudal (PKR) guided missile frigate, which were built by PT PAL Indonesia in collaboration with Dutch Damen Schelde Naval Shipbuilding (DSNS) for the Indonesian Navy (Tentara Nasional Indonesia Angkatan Laut - TNI AL). With a displacement of 2,365t and a range of 5000nm (9260km), the two frigates are armed with two triple torpedo launchers. The TNI-AL has also received, in the past decade, three Airbus Defence & Space CN235 MPAs, assembled under licence by Indonesian Aerospace (Ice) as well as eleven Airbus Helicopters AS565 MBe Panther, which include an ASW suite complete with a dipping sonar and torpedo launch systems.

In August 2017, the Royal Malaysian Navy (RMN) launched its first Littoral Combat Ship 'Gowind' frigate. The ships, based on Naval Group's Gowind 2500 corvettes, have a displacement of 3,100t (hence why they are called frigates) and are being built by Boustead Naval Shipyard with a transfer of technology from Naval Group. Their ASW suite includes two J+S Ltd triple torpedo launchers as well as Thales' CAPTAS-2 variable depth sonar. The Malaysian government, however, is currently struggling to find the funding for ASW helicopters or MPAs.

### Going West

"Going West from India, navies have much more limited ASW capabilities," continued Mr Caris. Pakistan arguably is the country West of India with the highest stakes in the Indian Ocean region. Not only does it have an on going conflict with its neighbour over the Kashmir region, but it also has been significantly strengthening its ties with China in the face of decreasing US defence spending in the country, a move that India looks upon with understandable concerns. In this context, Karachi has agreed on a sharp 19.6 per cent increase in defence spending for 2018-19, although according to local sources most of the funds will go to the Pakistan Army (47 per cent) and the Pakistan Air Force (20 per cent), with only 10 per cent allocated to the Pakistan Navy. While this is no doubt in large part due to the conflict over Kashmir, it also translates into fewer capability modernisation and/or

Caught Off Base

In his book *The Art of War*, Sun Tzu wrote: "For should the enemy strengthen his van, he will weaken his rear; should he strengthen his rear, he will weaken his van; should he strengthen his left, he will weaken his right; should he strengthen his right, he will weaken his left. If he sends reinforcements everywhere, he will everywhere be weak." This quote sums-up perfectly this two-part series on ASW in the Indian Ocean: the proliferation of submarines to protect SLOCs, carry out ISR missions and, if necessary, be ready for deterrence, is driving a race to procure ASW platforms.

While the first part of this short series highlighted the importance of submarines in this context, this article has shed light on the crucial aspect of establishing bases in strategic regional points in order to be able to operate a more multi-layered ASW strategy. Mr Caris noted: "With the Chinese and Indian fleet expanding, as well as more surface and sub-surface activity in the Indian Ocean, it will be interesting to see how this will continue to drive trends." Will the region continue to see increased ASW procurement? And will these tensions eventually create more potential for pre-emptive strikes against submarines in the future, rather than 'just' deterrence? **NAFO**

The Pakistan Naval Air Arm is not likely to receive new platforms any time soon, the latest modernisation took place on its P-3 Orion. (Photo: Leandro Rocha)



procurement for the Navy. As a consequence, there are no new procurements of ASW surface assets, despite a letter of intent signed in May 2017 with Turkish STM for the construction of four MILGEM corvettes complete with ASW capabilities and which, to date, appears to have failed to materialise into a contract. Similarly, the Pakistan Naval Air Arm is not likely to receive new platforms any time soon; the latest modernisation took place on its P-3 Orion. According to Mr Caris, Pakistan is therefore "very vulnerable because it operates out in the sea without superiority."

Although there might currently be less submarines patrolling the Western part of the Indian Ocean, closer to the African continent, Saudi Arabia is nonetheless making

small steps to develop its ASW fleet. Chiefly amongst those is the contract that was just awarded to Lockheed Martin for "long-lead-time material" for Saudi Arabia's four Multi-Mission Surface Combatant (MMSC). With a maximum displacement of 3,600t and a range of 5000nm (9,260km), it is fitted with towed, hull-mounted and dipping sonars, as well as compact low-frequency active and passive variable depth sonar. It will also include an AN/SLQ-25 torpedo defence system and while it does not appear that it will be armed with torpedo launchers, it should be supported by a Sikorsky MH-60R 'Romeo' multi-role helicopter; the possible sale of ten such helicopters was approved by the US Defence Security Cooperation Agency in December 2015.

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