TATRA REEMERGES IN INDIA WITH RENEWED VIGOUR

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WORKHORSE

If not for the trucks and utility vehicles of the armed forces, it would become impossible for India to get its troops to the border front or deploy weapons at the right place, at the right time

INDIAN LEADERSHIP MUST FOR INDIAN OCEAN REGION

USNS Bowditch that deployed the US UW Drone

With the Chinese eying the Indian Ocean Region for strategic imperatives and investing significantly to ensure their presence, India should take the initiative to guard itself against these Chinese advancements, writes **DR. (CDR) ARNAB DAS**

"We seek a future for the Indian Ocean that lives up to the name of SAGAR-Security And Growth for All in the Region"

— Narendra Modi

Prime Minister Narendra Modi came to power, with a huge majority in the general election of 2014, based on the agenda of development and equality. The above statement by him in March 2015, does indicate the priority of his government and also a recognition of the changing geopolitics in the Indian Ocean Region (IOR). The shifting global focus towards the IOR in the 21st century does have multiple strategic imperatives. The first and foremost is the energy security for the growing economies and the major shipping traffic passing through the region that drives the economic growth globally. The political instability and also the growing international terrorism being perceived to have its origin in the region do complicate matters. The geopolitics in the region is highly fragmented and nations are engaged in internal disputes and also present itself as key venue for international piracy. Some recent studies do indicate that the IOR is the locus of some 70 per cent of the world's natural disasters. These factors together are making the IOR a deeply contested region and also encouraging extra-regional powers to use nations within, as proxies that is further destabilizing the region.

The Chinese announcement to raise their marine corps from 20,000 to one lakh as part of their plans to deploy them abroad, including in Gwadar and also setting up of military logistics base at Djibouti needs to be read in the strategic context. The Chinese growth as a superpower in the making and their attitudinal shift to challenge the American dominance in the IOR does needs to be recognized. The American "Indo-Pacific" strategic concept needs to be understood in its origin and intent. The Japan, Australia and India alliance as part of the Indo-Pacific push in the absence of China makes it a front to counter the growing Chinese threat to the American interests globally. India has to use these alliances to build its real capabilities rather than being a facilitator for these powers. India must take the lead in the IOR and be recognized by the regional states economically, politically,

The US Underwater Drone

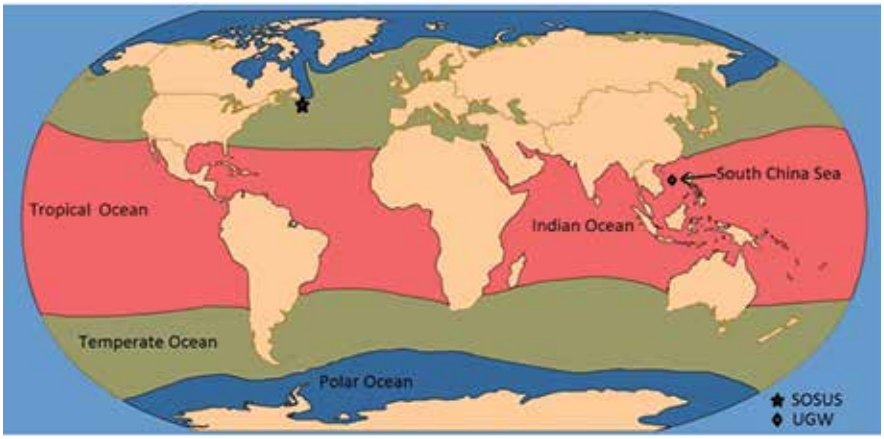
technologically, culturally, diplomatically and in many fronts.

Transparency is always the hallmark of effective governance. The Underwater Domain Awareness (UDA) does provide a structured framework to monitor all the developments in the vast undersea domain in the IOR. Such a framework can address the concerns of all the four stakeholders (security, blue economy, environment and disaster management and science and technology) in a comprehensive manner that will allow pooling of resources and optimum deployment of efforts and infrastructure. The complex medium fluctuations due to the tropical littoral waters in the IOR, does not make it easy to import underwater technology developed during the Cold War period by the superpowers to be deployed here. Sub-optimal performance of the sonars in region means excessive resource deployment to cover the region. When we talk about UDA, the core capability is the acoustic sensing and analysis and that requires to be recognised as a national priority. The significant investments by navies in the IOR, on military hardware (submarines and more), must be complemented with soft capabilities of enhanced acoustic processing including oceanographic studies and ambient noise mapping.

The Cold War period saw the investments on systems like the Sound Surveillance Systems (SOSUS) with massive resource deployments. The SOSUS system over the many decades, not only served as a surveillance system to detect Russian vessels, but more importantly gave a huge database to undertake acoustic research for UDA. The data continues to serve the acoustic community to design and develop algorithms for enhanced UDA across the stakeholders. Another Cold War facility was the Point Sur lighthouse that was developed to encourage acoustic research with field experiments in littoral waters. These two facilities and more were military assets developed at the peak of Cold War, however post the disintegration of USSR, the political priorities shifted. Even in America, it became politically unviable to support such huge investments and these top secret projects were opened for non-military acoustic technology development for so called civilian applications. The opening up also generated resources to self sustain such infrastructure. Massive military projects also faced substantial resistance from the environmental activists and many such projects had to be abandoned or re-structured. Ship shock test, Surveillance Towed Array System – Low Frequency Active (SURTASS-LFA), Acoustic Thermometry of the Ocean (ATOC) and many more are projects that faced resistance from Natural Resources Defence Council (NRDC) on account of acoustic habitat degradation to the marine eco-system. What it recognizes is that the geopolitics today does not allow national security to get unquestioned priority over other stakeholders. Acoustic capability building needs massive infrastructure investment and one stakeholder cannot afford it alone. Pooling of resources and also joint effort under the UDA construct is the only way forward to avoid the development vs conservation, development vs. security and conservation vs. security debates.

When the Chinese dragon started to raise its head, the US Office of Naval Research (ONR) funded massive tropical experimental research programmes to universities in US, Taiwan, South Korea and China for data collection led by the Wood Hole Oceanography Institute (WHOI), USA. The Asian Seas International Acoustics Experiment (ASIAEX) programme included two major field programmes in South China Sea and the East China Sea that started in 2000 and the data collection happened over two years. Interestingly, the pilot study in 2000 was undertaken only by WHOI and five other US universities and then in the main study thirteen other universities from US and other countries participated. The strategic relevance of such a model needs to be understood. The take away for the US is very clear - to attain higher levels of UDA beyond their shores where the superpower operates its naval platforms. However, the Chinese also had their strategic plans – the scale and expertise to conduct such massive sea experiments did not exist with them, so their researchers gained under university collaboration and now they routinely undertake such experiments in their waters.

The 'Undersea Great Wall (UGW)' project is an ambitious programme announced by the China State Shipbuilding Corporation (CSSC) in Dec 2015. It is part of the focused underwater acoustic capacity building initiative by the Chinese government since 1980 that has been openly announced only recently. The CSSC announced that it would construct an underwater observation system in the disputed South China Sea region. The UGW is part of the major project to set up an offshore observation network by 2020, released by the State Oceanic Administration. The stated larger vision of the Chinese government is to be seen as a global maritime power with a network covering coastal waters, the high seas, and polar waters. The aim is to build a network of surface and sub-surface sensors for real-time monitoring of maritime targets. The proposed project comprises of multiple underwater sensors mounted on surface ships, sonar systems, underwater security equipment, marine oil and



SOSUS and UGW

gas exploration equipment, unmanned underwater vehicles and marine electronic equipment. The UGW is expected to present a comprehensive Underwater Domain Awareness (UDA) for surveillance, environment monitoring, disaster management and undersea exploration/exploitation.

The Chinese have attempted underwater networks in the past with an underwater optical detection network in 2010 near China's North Sea Fleet, headquartered in Qingdao. The second system was installed near Hainan Island in 2011, and part of the system was tested in 2013 near Sanya nuclear submarine base. In 2012, the State Council announced the construction of the seabed observation system in Lingshui, Hainan. These projects remained ambitious in their design, however, failed to deliver the desired results once implemented. The technology gaps between China and other developed global maritime powers like the US, Japan, Canada and Europe is considered to be enormous and projects like these are likely to bridge these gaps. The tropical water realities are being faced by China as well, unlike the others who are in the temperate. However, they are investing relentlessly on the acoustic capability building to overcome the tropical littoral limitations.

More recently it was reported that China is planning to build its first Underwater Observation Platform to observe underwater condition in real time. "Construction work on the long-term observation platform covering key areas in the South China and East China seas will be done with the help of Shanghai's Tongji University and the Institute of Acoustics," Wang Pinxian, an academic at the Chinese Academy of Sciences (CAS) said. According to a report in the 'sciencenet', the observation platform will probe the undersea physical, chemical, and geological dynamics, and will also be used for other purposes.

Just prior to President Donald Trump taking over, the Chinese Navy seized an underwater drone in the South China Sea. The drone deployed from USNS Bowditch was a brazen message to the incoming Trump administration. Sebastian Brixey-Williams of the British American Security Information Council said: "Nuclear states are increasingly anxious about unmanned underwater vehicles (UUVs, or underwater drones) autonomously tracking their nuclear ballistic missile submarines (SSBNs), making them vulnerable to antisubmarine warfare. This is an issue for China in particular, whose SSBN fleet is small and noisy. Though the USNS Bowditch is an oceanographic ship and may sound harmless, the kinds of data it is collecting will make Chinese submarines easier to find over time. "China therefore accomplishes a number of things by seizing a US underwater drone," Brixey-Williams said. "It allows Chinese scientists to better understand the US's offensive technical capabilities in this area, and potentially allows them to reverse-engineer them, bringing gains in both the commercial and military spheres." In March 2009, a number of Chinese navy ships harassed another US oceanographic vessel, the USNS Impeccable, coming as close as 50ft away, trying to snag its acoustic equipment with hooks, waving flags and demanding the Impeccable leave the area.

These events indicate that UDA in the tropical littoral regions is a continuous process and sustained acoustic deployments are required even for the developed nations to be able to counter any threat to their military and non-military interests in the maritime domain. The trans-boundary nature of the acoustic propagation and the undersea domain makes it compelling to encourage regional efforts rather than nationalistic approach. Technological dominance in terms of acoustic capability can be leveraged diplomatically to get around nations politically in the region. Enhanced UDA will facilitate far evolved regulatory provisions to minimize conflicts and also effective disaster management and environmental conservation.

There was a report by Prasun Sengupta in April 2016 in a defence magazine that India is considering Japanese assistance in the construction of an undersea network of seabed based sensors stretching from the tip of Sumatra right up to Indira Point in Bay of Bengal to prevent Chinese submarines from approaching Indian Exclusive Economic Zone (EEZ). Once completed, this network is likely to be integrated with the existing US-Japan "Fish Hook" SOSUS network meant specifically to monitor People's Liberation Army-Navy (PLAN) submarine activity in the South China Sea and the Indian Ocean Rim. The issue was supposedly discussed as part of the PM Modi's Washington visit in 2015, where India and the US agreed to intensify cooperation in Maritime Security. There has been no official confirmation of this project and many believe that it was the Indian response to the Chinese Anti-Access/Area Denial (A2/AD) plans in South China Sea. It may be important to note here that such a project if kept as a military response to the Chinese posturing in the IOR may face resistance in the global diplomatic forum. However, as a comprehensive UDA formulation may make it easier to get cooperation from regional powers. Resource mobilization may also be easier as a regional project rather than a nationalistic military response.

India has no choice but to take the lead in the IOR and build its acoustic capabilities for an effective UDA. The Chinese are eying the IOR for many strategic imperatives and have been investing significantly to ensure presence. The aggressive acoustic capability building specially in the tropical littorals of the South China Sea may make it easier for them to achieve strategic advantage of effective UDA even in the IOR. India needs to be wary of such Chinese advancements in the IOR and not let them have the tactical and technological edge.

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