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BEYOND TERRITORIALITY: MANAGING THE MARITIME COMMONS IN THE SOUTH CHINA SEA

Navigational Safety and Coordinated Search and Rescue Mission In South China Sea

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Two recent incidents involving the loss of Malaysian Airlines MH 370 and the sinking of the Korean ferry Seawol have brought the limitations of Search and Rescue (SAR) operations at sea into the forefront. In the case of the former, a number of countries had deployed their ships, submarine, aircraft and satellites in the Indian Ocean to search and locate the missing aircraft clearly exhibiting that SAR is an international obligation. It also highlighted that oceans and seas present big challenge for SAR despite numerous technological advances. In the second case, the national effort to locate the trapped passengers in the ferry has entered the second month and 16 people are still missing. The rescue agencies continue to cut open parts of the ship exterior to make searches easier.

The above SAR operations showcased only the geographical and technological constraints, but there are a number of challenges for SAR at sea which emerge in the form of contested boundaries, mutual suspicion, lack of trust, and agreements to address such accidents. In South China Sea, these issues get accentuated due to lingering boundary disputes among the claimants. In the above context, this paper argues that SAR is a 'public good' and attempts to explore how the littoral countries of the South China Sea, particularly the claimant states, could develop a cooperative framework for SAR.

Geographical Settings and Operational Challenges for SAR

The South China Sea is dotted with multitude of islands, reefs, shoals, and rocks, some of which are barely above water during high tide, and are mostly uninhabited. Although, most of the South China Sea is over 1000 meters deep, some areas are labeled as 'dangerous' on nautical charts due to risky submarine topography such as drying reefs, shoals and rocks. The average tidal range around these features is 0.5 to 1 meters but in shallow area the range expands to about 2 times and can pose dangers for ships. The South China Sea is suitable for navigation by large vessels such as tankers, container ships and bulk carriers but with enormous precautions. The South China Sea also witnesses severe storms and typhoon that can pose difficulties for shipping.

Further, South China Sea is complex in terms of underwater conditions and topography. Unlike the terrestrial and space mediums which offer good conditions for transmission of electro-magnetic waves, the underwater environment is unique and only sound waves are capable of travelling long distances. Further, the sound waves are affected by at least three important factors i.e. water temperature, salinity and pressure. There is also under water noise pollution arising from shipping, oil and gas exploration, and the marine life which adds to the difficulty to detect objects and causes confusion.

Who Requires SAR Support in South China Sea

According to the US Energy Information Administration (EIA), a large volume of oil and gas, bulk goods and containerized cargo are carried onboard ships which sail through the South China Sea bound for designations in the region and other global markets. It notes "More than half of the world's annual merchant fleet tonnage passes through the Straits of Malacca, Sunda, and Lombok, with the majority continuing on to the South China Sea."

According to Lloyd's List Intelligence tanker-tracking service and GTIS Global Trade Atlas, approximately 14 million barrels of crude oil pass through the South China Sea which corresponds to a third of global oil movement. Likewise, nearly 6 trillion cubic feet (tcf) of liquefied natural gas (LNG), or over half of global LNG trade, passes through the South China Sea bound for China, Japan, South Korea and Taiwan. According to World Shipping Council, in 2012, nine of the world's 'top 10' busiest container ports were in Asia (China (1st), Singapore (2nd), and Korea (5th) positions). Further, South China Sea is a rich fishing ground and a large number of fishing boats are found in the area. The air space over the South China Sea witnesses high air traffic density bound for major international airports in China, Japan, Korea, Singapore, Thailand, Malaysia, Vietnam and trans-Pacific flights to the US. The above data clearly shows that there is significant shipping and air activity in South China Sea.

SAR for Underwater Platforms

Among the South China Sea littorals, China, Malaysia, Singapore, Indonesia and Taiwan have submarines in their naval inventory and Vietnam would soon add these in its inventory. Modern submarines are fitted out with their own crew rescue equipment/chambers integrated into the hull; however, external support in the form of submarine rescue tenders fitted with diving bell help facilitate evacuation of the crew. In the event of a submarine accident, the regional capacity to respond to the event is limited. Further, submarine operations by their very nature are secretive and no country would be willing to disclose the accident. However, there will be calls for salvaging and recovering the crew. In such a situation, international efforts would be needed to support SAR operations.

Converting 'Unsinkable Aircraft Carriers" to SAR 'Lily-pads'

In any SAR operation, time is of critical importance and an index of its success. SAR agencies attempt to compress the reaction and response time to recue the affected people. However, there are a number of challenges such as correct assessment of the position of the incident, location and availability of rescue vessel for SAR, time to reach the location, and geography and topography of the area of operation.

In the South China Sea, the claimant states have built landing facilities and safe anchorages for ship and several islands have short airstrips which can stage smaller aircraft including helicopters. There are at least four known airstrips of various sizes in the South China Sea. Rancudo Airfield on the Pagasa is under the control of the Philippines; Malaysia occupies the Swallow Reef or Layang Layang which has a 600 metre air strip and can land smaller aircraft; Truong Sa Lon, occupied by Vietnam; and Taipingdao in control of Taiwan has 600 metre air strip. Meanwhile China has a long airstrip on the Woody Island. These proverbial 'unsinkable aircraft carriers' are being developed for combat at short notice till reinforcements come from mainland. These airstrips can be converted into 'lily-pads' for SAR operations.

It is not surprising that the South China Sea and the space above is a busy passageway for shipping and air traffic. There are bound to be unfortunate accidents which necessitate SAR for which the South China Sea littorals are bound to respond under various international regulations, regional agreements and above all humanitarian grounds.

International Conventions on SAR

There are a number of international conventions to which urge States to develop SAR systems and arrangements such as RCC (Rescue Co-ordination Centre) and RSC (Rescue Sub-

Centre), SAR facilities and communications in the area. There should also be detailed plans for conduct of search and rescue operations. Some of these are listed below:

1974 Convention for the Safety of Life at Sea (SOLAS)	Obligation on ships to go to the assistance of vessels in distress
1979 International Convention on Maritime Search and Rescue (SAR)	Establishes measures for SAR including establishment of rescue co-ordination centres and sub-centres 13 search and rescue areas; countries concerned have delimited search and rescue regions for which they are responsible
1982 LoS Convention	Art 98; *Duty to render assistance ;* establish and operate adequate and effective SAR over the sea; circumstances so require, mutual regional arrangements to cooperate with neighbours
International Aeronautical and Maritime Search and Rescue (IAMSAR)	Joint publication of IMO and the International Civil Aviation Organization (ICAO); Guidelines for a common aviation and maritime approach to SAR

Similarly, there are regional agreements on SAR which support national commitments to develop and render SAR.

1992 ASEAN Declaration on the South China Sea	Recognizing that South China Sea issues involve sensitive questions of sovereignty and jurisdiction; Resolve ,…. to explore the possibility of cooperation in the South China Sea relating to ….coordination of search and rescue operations…
2002 CoC	Para 6: Pending a comprehensive and durable settlement of the disputes, the Parties may explore or undertake cooperative activities (d) search and rescue operation
ADMM +	Practical cooperation for maritime security and HADR

Concluding Remarks

South China Sea present a complex marine environment with extensive and dense shipping, and enormous fishing activity. Also, turbid waters make the underwater geography quite complex and opaque resulting in immense challenges for SAR operations. Further, there are boundary issues which can potentially preclude timely SAR.

Given the above, it is necessary to develop a comprehensive framework for regional SAR arrangements through coordination among around South China Sea littorals. Keeping in mind the scattered layout of various islands, bad weather and complex underwater marine conditions, it is important to set up a number of SAR sub-centers in the South China Sea. A dialogue among the claimant states for integrating the national SAR capabilities and channels of communication for enhancing the ability to respond to SAR requirements is critical. The coast guard or maritime agencies of the South China Sea littorals would need to establish hot lines for response. Also, they will have to address issues relating the boundary issues when responding to humanitarian missions such as SAR in South China Sea. Needless to say, training and joint exercises are critical for any SAR operation.

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