IONSPHERE

Edition IV
December 2014

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Edition IV, December 2014

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FOREWORD

It is my pleasure to introduce the 4th edition of IONSPHERE and the first under the editorship of the Royal Australian Navy.

The purpose of IONSPHERE, as the Indian Ocean Naval Symposium (IONS) Newsletter, is to provide a platform for the exchange of ideas, views and opinions on Indian Ocean naval and maritime issues. As befits the broad and rich nature of the Indian Ocean, contributions are welcome across the wide range of issues which members of IONS address every day. Understanding between nations and good order at sea require us to collectively address a myriad of issues at the state, regional and local levels. To this end, I encourage the frank exchange of information to enable us all to learn what is important to IONS members and how we can better work together.

I thank the contributors for their submissions and the Sea Power Centre - Australia for producing this edition. I acknowledge that with any newsletter not all submissions can be published, but encourage our collective IONS membership to continue to make contributions to stimulate further discussion.

T.W. Barrett, AO CSC
Vice Admiral, Royal Australian Navy
Chair, Indian Ocean Naval Symposium

IONS Snapshot 2014

IONS Secretariat

South Africa passed the chairmanship of IONS to Australia on 25 March 2014, in Perth, Western Australia. Delegations from 35 nations attended the IONS Seminar which had the theme of *Protecting the Ability to Trade in the Indian Ocean Maritime Economy*.

The Conclave of Chiefs met on 28 March 2014, where delegations from 22 nations endorsed the Charter of Business, which enabled nations to formalise their membership. At the end of 2014, IONS had 18 official members and three observer nations.

IONS Members include:


Australia


Bangladesh


Indonesia


Maldives


Mauritius


Myanmar


Oman


Pakistan


Saudi Arabia


Seychelles


Singapore


South Africa


Sri Lanka


Tanzania


Thailand


Timor Leste


United Arab Emirates


United Kingdom

IONS Observers include:


China


Japan


Malaysia

The Charter of Business sets out the objectives and fundamental principles of IONS and defines the purpose of the organisation as a voluntary initiative that seeks to increase maritime cooperation among navies of the littoral states of the Indian Ocean region.

To facilitate investigation of maritime security challenges common to the member and observer nations of IONS, the Conclave of Chiefs also endorsed the creation of IONS Working Groups. These working groups are an exciting step forward for IONS. Their principle objective is to increase mutual understanding of a specific issue and encourage practical cooperation and outcomes, such as guidelines, training, operating procedures and maritime exercises. The three working groups are:

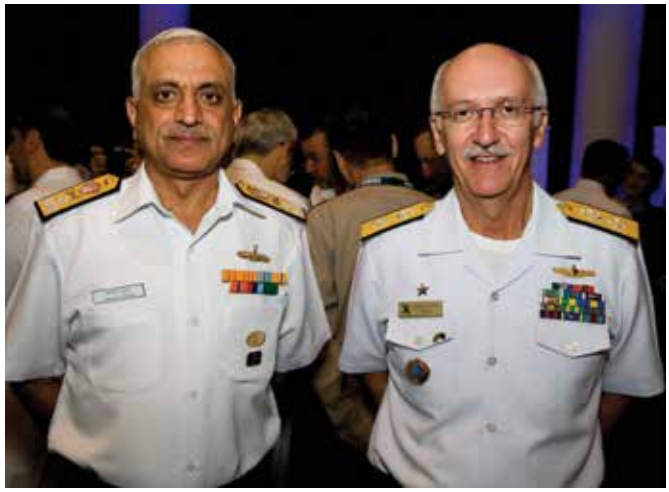
- Humanitarian Assistance and Disaster Relief to be chaired by India
- Counter-Piracy to be co-chaired South Africa and Tanzania
- Information Sharing and Interoperability to be chaired by Pakistan.

The Conclave also endorsed the IONS chairmanship transferring to Bangladesh in 2016 and to Iran in 2018.

A busy year is planned for IONS in 2015. Inaugural meetings of the three working groups are to occur. Other nations that are eligible to join IONS are expected to confirm their membership by 27 March 2015. In addition to these activities, the IONS Preparatory Workshop will be hosted by Pakistan.

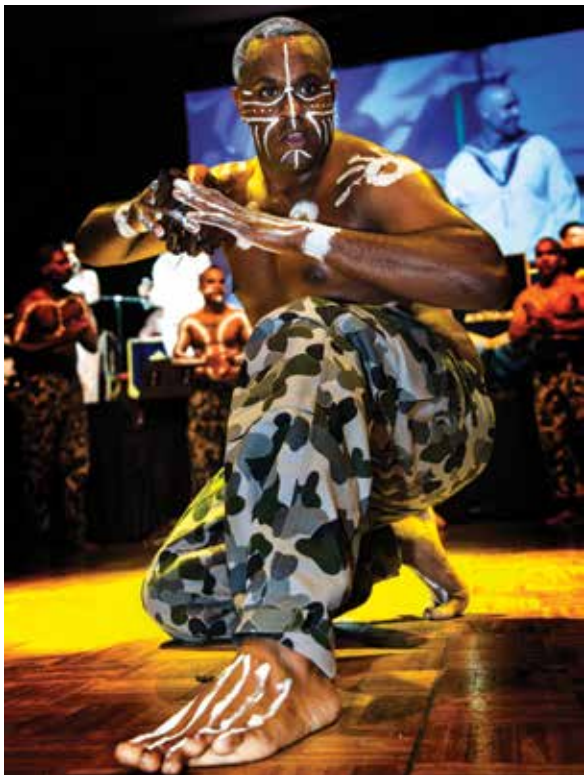
CONCLAVE OF CHIEFS AND STAFF OFFICERS

INDIAN OCEAN NAVAL SYMPOSIUM SEMINAR 2014, PERTH, AUSTRALIA



ROYAL AUSTRALIAN NAVY INDIGENOUS PERFORMANCE GROUP


AUSTRALIA
AUSTRALIA




AUSTRALIA

CSCAP MEMORANDUM NO 24:SAFETY AND SECURITY OF VITAL UNDERSEA COMMUNICATIONS INFRASTRUCTURE

Council for Security Cooperation in the Asia Pacific

Introduction

Submarine fibre optic cables carry 97 per cent of all international telecommunications and are vital communications infrastructure for states globally and in the Asia-Pacific region. Multiple cables breaks or hostile actions by terrorists or other third parties represent a significant risk to the security and economic interests of every state connected to that cable. There is currently no international legal regime addressing security issues that affect submarine cables, nor is there an international agency responsible for them.

This Memorandum proposes measures for moving forward at a regional level to protect submarine cables, reduce the risks to cables, and improve repair responses to damaged cables when faults occur. Cooperation between states at a regional level is required to plan in advance for incidents involving major breaks to submarine cables. There is also a need for states to establish national legislation and policy to reduce the risk of breaks and to improve response times for repairs to damaged cables. A cooperative partnership between government and industry is needed to ensure the resilience of the submarine telecommunications networks.

Submarine cables are vital telecommunications infrastructure

The global submarine fibre optic cable network is comprised of approximately 216 separate, diverse and independent cables systems, totalling more than 870,000km of fibre optic cables. Presently, 97 per cent of all international communications are carried by submarine fibre optic cables. The majority of countries now rely almost exclusively on undersea cables for their telecommunications needs, including essential finance, diplomacy and defence systems. The United Nations General Assembly has described these cables as ‘critical communications infrastructure’, which is ‘vitally important to the global economy and the national security of all states’.

Cable breaks pose a risk to the security and economy of states

The majority of submarine cable breaks are caused by negligent activities from fishing and shipping, and natural events such as earthquakes, tsunamis and typhoons. There have, however, been incidents involving intentional damage being inflicted on cables. Industry reports that there are also increasing incidents of theft of cables at sea, causing millions of dollars of repairs and compromising the resilience of cable networks.

The risk of a deliberate attack against a network of cables with the intention to cripple the core telecommunications of multiple states is a real one. Given the broad range of man-made hazards that can damage cables, there is a real risk that in an area where there is a heavy network density of cables, deliberate actions to damage cables could result in multiple faults and maximum damage to international telecommunications systems. In addition to cable systems, supporting physical infrastructure such as landing stations may be also be targeted.

Adding to this are impediments by coastal states that result in delays to repairs; these may occur as a result of permit delays, requirements for vessels to enter port before carrying out repairs, customs duties, fees, and taxes, and cabotage requirements. These delays are sometimes in excess of three months, increasing the cost of repairs by hundreds of thousands of dollars and creating backlogs of repairs.

The current legal regime to protect submarine cables is inadequate

There is no specialised international agency responsible for law and policy relating to international submarine cables. The only applicable international rules are those contained in the *United Nations Convention on the Law of the Sea 1982* (LOSC), but the provisions in LOSC are inadequate for dealing with the security of submarine cables. Even where states have enacted legislation to criminalise intentional acts against cables as required in LOSC, such legislation only applies to nationals of that state (or ships flying its flag), not to foreign nationals. In essence, national laws to protect submarine cables are often lacking, obsolete or not enforced.

In order to protect air navigation facilities and maritime navigation facilities, the international community has adopted treaties which establish a comprehensive cooperative regime to ensure that persons who intentionally destroy or damage critical infrastructure are punished for their actions as criminals, regardless of their nationality and regardless of where the acts took place. However, there is no such convention that applies to international submarine cables, even though they are arguably more important as critical communications infrastructure than air or maritime navigation facilities.

Areas for action

There are annually on average approximately 200 or so cable fault repairs. Most repairs occur in the territorial seas and exclusive economic zones, although some occur on the high seas. Repair costs vary between US$1-3 million per repair, depending upon weather, location, and the extent of damage. Given these statistics, regional governments in the Asia-Pacific need to recognise the importance of the protection and maintenance of submarine fibre optic cables as critical telecommunications infrastructure, and the Memorandum recommends that governments in the region establish the following mechanisms to cooperate with each other and with the cable industry in order to protect submarine cables and ensure their rapid repair:

I. Contingency planning at the regional level

Given that the intentional cutting of submarine cables by thieves or terrorists is a serious threat to the economy and security of the coastal state, governments should look into developing contingency plans with industry to deal with attacks on the submarine cable network in the region. The contingency planning should include a standard procedure whereby the cable industry immediately notifies relevant government agencies through a designated national lead agency whenever there is a cable break or suspicious activity observed so that a risk assessment can be conducted to determine the likelihood of a possible hostile action. National designation of a lead agency for cables should be a priority.

What may also be required is an arrangement among states in the region to share information on suspected attacks on submarine cables and to fully cooperate in the event of an attack on submarine cables outside the territorial sea of any state. State parties and the cable industry should carry out joint desktop exercises to plan and develop protocols and practical responses in the event of possible disruptions of submarine cable infrastructure. For a successful desktop exercise, it is essential that all government agencies responsible for domestic and international security threats at sea be involved as well as the international companies that own or operate the cable systems and cable ships be involved. Such planning should include the development of protocols to facilitate the quick repair of damaged submarine cables.

II. Cooperation to develop best practice guidelines

Establishing best practice guidelines at a regional level is an important means for states to cooperate to ensure that submarine cables are protected in law and in practice, and to ensure that rapid repairs can be undertaken when damage occurs. Cable breaks are not solely a national matter for the coastal state in whose waters the cables are laid; they are also a matter of concern for every state where that cable lands. Other states in the region are impacted as well because a damaged cable increases the risks to communications because a damaged cable is no longer available for traffic restoration from a damaged cable. States should ensure mariners, especially fishing vessels, are advised of dangers to cables from unsafe anchoring or trawling practices on them. Industry studies have documented inordinate delays in the repairs of cables in several countries in the Asia-Pacific region. One reason for this is that in some countries there is no lead agency responsible for the law and policy on submarine cables. The uneven treatment of the repair of international cables by states in the region should be analysed and reviewed by governments in cooperation with the cable industry so that the problems can be identified and ‘Best Practice Guidelines’ can be developed.

Specific recommendations for action

1. **Actions by states**
   a. All states should join the International Cable Protection Committee (ICPC).
   b. Each state should designate a national lead agency for submarine cable issues.

2. **Regional cooperation**
   a. Once designated, national lead agencies of states should coordinate (with industry/ICPC and other states) to:
      (i) Develop regional protocols to facilitate prompt cable repairs, and
      (ii) Develop standard procedures for both information sharing and to notify other regional nations of cable breaks or suspicious activity.
   b. Include tabletop exercises to deal with cable breaks and threats to cables in regional multilateral and bilateral exercises.

3. **Future Study**

Submarine cables issues should be included as a topic for future study in ARF Maritime Security ISM and CSCAP maritime security study group work, to refine the above recommendations and to identify best practices and other specific actions for official consideration.

CSCAP MEMORANDUM NO 25: MARITIME CONFIDENCE BUILDING MEASURES, TRUST AND MANAGING INCIDENTS AT SEA

Council for Security Cooperation in the Asia Pacific

Introduction: The Macro and Micro Views of Regional Maritime Security

Tensions have been rising in Asia's maritime regions. While no party wants a conflict to break out, an incident and subsequent miscalculation could well result in unintended escalation. Discussions at the diplomatic level on instituting a series of confidence building measures indicate that progress is being made on maritime safety and security. But incidents and provocations at sea and the air may occur, sometimes spurred by broader tensions at the macro level, and such incidents may spiral out of control creating diplomatic and political crises. There is a need to propose specific crisis prevention and management measures that CSCAP could recommend to the Track I level.

Building Trust and Confidence

The search for confidence building measures that will reduce the prospect of an incident in the maritime commons escalating to conflict has, and continues to, preoccupy several Track I and Track II forums in the Asia-Pacific region. Confidence building measures that have been proposed in these forums include:

At the political level

The Asia-Pacific region has, and continues to work on a series of political confidence building measures. These include:

- the Treaty of Amity and Cooperation in Southeast Asia which aims to ensure peace, cooperation and solidarity among ASEAN countries
- the Declaration of Conduct of the Parties in the South China Sea which aims to guide behaviour among the South China Sea disputants and work towards an eventual Code of Conduct
- the ASEAN Regional Forum which promote dialogue on political and security matters and enhance confidence-building and preventive diplomacy in the region
- the ASEAN Maritime Forum and Expanded ASEAN Maritime Forum which provides a platform for ASEAN member states and their partners to pursue maritime interests and explore common approaches in ensuring maritime security
- the ASEAN Defence Ministers Meeting which engages ASEAN Dialogue Partners in dialogue and cooperation on defence and security matters; as well as defence white papers.

It is significant to note that all these political confidence building measures assume that the parties subscribe to the norms of cooperative security, a central pillar of the regional security architecture, which is underpinned by trust among one another. The dilemma is the extent to which cooperation is possible when there is a trust deficit in the region.

At the operational level

Functional cooperation

Functional cooperation for the safety of navigation, search and rescue, humanitarian assistance and disaster relief (HADR), coastal zone management and environmental protection would be more easily achievable as confidence building measures in the absence of trust, when the confidence building measures are framed within a recognised institution or regime (such as LOSC, IMO Conventions, etc.). Often on-going confidence building measures include HADR as well as search and rescue exercises, and these have shown some success over the years. However, efficacy of these functional cooperative efforts as confidence building measures are hampered by the lack of coordination at the national and regional levels, as well as the wariness of the impact on sovereignty claims that some believe agreement to these confidence building measures could potentially pose, especially in disputed territories.

Regional incidents-at-sea agreement

Regional incidents-at-sea agreements modelled on the United States-Soviet Union Incidents-At-Sea Agreement (INCSEA) concluded in 1972 have previously been suggested. However, this may be premature at this stage. This navy-to-navy agreement relates to incidents wherever occurring at sea, but it should be noted that such agreements in Asian waters would have to occur in the context of a larger number of, and more complex, jurisdictional/territorial disputes. Negotiations on a regional agreement would also open up differing views about the rights of other states to conduct military activities within an exclusive economic zone without permission from or prior notification to the coastal state.

Code for Unplanned Encounters at Sea (CUES)

The Western Pacific Naval Symposium Code for Unplanned Encounters at Sea (CUES) offers safety measures and a means to limit mutual interference, to limit uncertainty, and to facilitate communication when naval ships or naval aircraft encounter each other in an unplanned manner. It is not legally binding; rather it is a coordinated means of communication to maximise safety at sea. It may be adopted on a voluntary and non-binding basis within WPNS and is available for implementation by any navy on the same basis.

Pan-regional coastguard forum

Coastguards and other law enforcement agencies, as they improve their capabilities and assume greater responsibilities for maritime security, need regional forums (like the navy) to interact with, and better understand other coastguards they encounter at sea. An example of such a forum would be the North Pacific Coast Guard Forum established in 2000 which includes Canada, China, Japan, the Republic of Korea, Russia and the United States. The Forum has had some success in documenting best practices

among coastguards and has a web-based information exchange system, while bilateral and multilateral operations and exercises have been conducted under its auspices. Southeast Asia does not have an equivalent forum and existing regional information sharing centres do not have a mandate to provide a platform to improve awareness and communication across the full spectrum of activities encompassed by the North Pacific Forum, although the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP), which has its Information Sharing Centre (ISC) located in Singapore, has provided a platform for regional coastguards to cooperate on counter-piracy.

At the pan-regional level, there is also the Heads of Asian Coast Guard Agencies Meeting. This initiative was started in 2004 to discuss cooperation among the member organisations to combat piracy in the region. However, the scope of discussions has since expanded to include law enforcement, maritime security, disaster prevention and relief and capacity building. Presently, 17 countries take part in the initiative. Such forums play an important role in building confidence through professional-level interaction and regular dialogue between regional maritime law enforcement agencies. This is of increasing importance given the role that coastguards and other paramilitary ships are playing in asserting sovereignty and sovereign rights within contested waters.

At the technical level

Enhancing maritime situational awareness

In order to maintain good order at sea and counter transnational threats in regional waters, countries must first be aware of what is occurring in their maritime environment and have in place a responsive enforcement capacity. An inclusive and cooperative maritime situational awareness arrangement should also be able to alert participating countries to possible incidents before it happens or soon thereafter.

The ReCAAP ISC promotes information sharing and capacity building arrangements to enhance regional cooperation to combat maritime piracy and armed robbery. The establishment of the Information Fusion Centre at the Command and Control Centre in Singapore's Changi Naval Base in April 2009 serves as a regional maritime information hub to enhance maritime situational awareness, and to act as an early warning system. The challenge now is to further broaden and institutionalise such mechanisms for increased maritime domain awareness leading to security cooperation.

Direct communication links & hotlines

Establishing direct communication links, including 'hotlines', between the defence ministries, navies and paramilitary maritime organisations of regional countries can provide vital channels for communication, especially where relations are complicated by maritime disputes. During periods of tension, such channels can play a useful function in preventing inadvertent escalation. In normal times, the hotline can also play a helpful confidence building role, while not replacing some countries' preferences for informal or inter-personal connections. An initiative is currently under way through the ASEAN Defence Ministers Meeting on hotlines that could in due course be expanded.

Given widespread differences in capacities, existing practices and political expectations among regional states, care will be needed to ensure that common communication protocols are agreed and

understood. While countries' willingness to set up 'hotlines' may be a good indicator of their willingness to engage in crisis management, the ultimate value of such links will depend on the good intentions of the parties concerned, with no guarantee that they may be utilised or even maintained in a crisis.

Confidence Building Measures and Trust: Cooperating without Trust

An underlying assumption of cooperative security in the Asia-Pacific is that confidence building measures are trust-building measures. The vision was that starting with functional cooperation in search and rescue, HADR or marine scientific research, the region could build the trust to move to other operational and political confidence building measures for cooperative security. Cooperation is perceived to be both an obligation and a necessity, and that trust will follow cooperation. Hopefully, confidence building measures could lead to both trust and confidence, reducing the chances of an incident at sea escalating into a political crisis. But where confidence building measures do not lead to cooperation and trust, crisis management will then be critical to prevent an inadvertent escalation to military conflict.

Risk management and crisis mitigation

An incident at sea may escalate into a political crisis as a result of the inadequacy of confidence building measures. Current information technology would further accelerate the pace of crises. The worst case scenario question of what happens when the confidence building measures break down in an incident at sea needs to be considered. What measures can be utilised to prevent disputes and conflicts arising from, for example, a fishing trawler being fired upon by a coastguard vessel claiming the trawler is in waters protected by that coastguard vessel? Crisis management measures will need to be put in place to prevent a violent encounter between the fishing trawler and the coastguard vessel from escalating into a major standoff and between the law enforcement agencies and even naval vessels despatched to protect its fishing trawler which has been fired upon by the rival coastguard.

Are there in place hotlines or communication channels, and more importantly, the trust in the conversations over those hotlines to de-escalate the stand-off? That failing, can fact-finding missions and Eminent Persons Group forming goodwill missions mediate in the crisis? It can only be hoped that common interest in avoiding injury to personnel, ship and aircraft as well as some goodwill, patience and tolerance in spite of underlying distrust will prevail in a crisis over the next incident at sea.

Recommendations

At the political level

ASEAN and its dialogue partners should continue to work on moving the region, as well as North and South Asia, from confidence building measures to preventive diplomacy. ASEAN states and China should steadily advance consultation on a Code of Conduct in the South China Sea within the framework of a complete and effective implementation of the Declaration of the Conduct of

Parties issued in 2002, in particular the building of trust and confidence by holding defence and military dialogues; voluntary exchange of relevant information and notification of impending joint military exercise, ensuring just and humane treatment of all persons in danger or distress, and the undertaking of cooperative activities on, inter alia, marine environmental protection, scientific research, safety of navigation and communication at sea, search and rescue operations, and countering transnational crime. In addition, the parties involved should also adhere to the 2011 Guidelines for the Implementation of the Declaration of Conduct. At the same time, the greater region may need to look more at operational or technical level confidence building measures. Success of political and strategic confidence building measures would depend on a commitment to resolving disputes peacefully and abiding by international law.

Maritime situational awareness

There is a need for a voluntary initiative to coordinate and promote maritime situational awareness for search-and-rescue and disaster relief throughout the region, similar to the ReCAAP ISC and the Information Fusion Centre. It is worth noting that Singapore has recently offered to host a regional coordination centre for HADR at the Changi Command and Control Centre.

Hotlines

In the context of the Asia-Pacific, hotlines and other lower-level direct communication measures should have the highest priority as a confidence building measures in crisis management. One useful outcome which a group like WPNS might promote could be the development of bilateral hotlines, including at the operational level between air forces, navies and coastguards, to prevent the escalation of an incident. While the immediate need for hotlines is nearly always bilateral, that could in due course lead to the evolution of multilateral hotlines for broader consultation and confidence building. However, it is important to note that hotlines will have little utility in times of tension unless both parties have a clear understanding as to their purpose, what they are able to achieve and what their limitations are, as well as the capacity and willingness to use them effectively and not cancel them when most needed during a crisis. Moreover, the hotlines should be used with the knowledge of the appropriate personnel to call, especially the level or rank of seniority of the personnel manning the hotlines, and there must be a way for the hotlines to reach key decision makers such as chiefs-of-staff at any time during a crisis.

SEARCH AND RESCUE IN THE INDIAN OCEAN REGION - AN AUSTRALIAN PERSPECTIVE

Australian Maritime Safety Authority

The volume of air and sea traffic within the Indian Ocean has expanded considerably in recent years. It has become the world's most important route for the energy and resources that power the global economy. Air traffic is expected to rise by 30 per cent over the next 10 years. With this increased traffic comes a heightened risk of emergency incidents.

The Indian Ocean Rim Association (IORA), of which Australia is currently Chair, has taken a lead role in enhancing search and rescue (SAR) cooperation in the region. IORA comprises 20 member states of the Indian Ocean rim with its primary focus being to promote sustained growth and balanced development.

IORA Foreign Ministers met in October 2014 in Perth, Australia, to discuss priority areas of cooperation, including maritime safety and security. A memorandum of understanding (MoU) on SAR cooperation in the Indian Ocean was signed at the meeting by a number of members as a commitment to protecting the safety of people who traverse the waters of the Indian Ocean. While not all members were able to sign the MoU at the meeting, it is hoped that many more will do so in the near future as cooperation between IORA member states continues to grow.

The Australian Maritime Safety Authority (AMSA) is responsible for providing a national search and rescue service for both maritime and aviation incidents within Australia's search and rescue region (SRR). This SRR comprises about one-tenth of the earth's surface, much of which extends west across the Indian Ocean - a region which presents a uniquely challenging operating environment due to its remoteness, deep ocean reaches and extreme weather conditions.

At any point in time there are approximately 900 vessels operating within the Indian Ocean region of the SRR. Over the past 5 years, AMSA has responded to over 400 incidents in the Indian Ocean, some of which occurred in its deepest reaches and in some of the most hostile and challenging environments on earth.

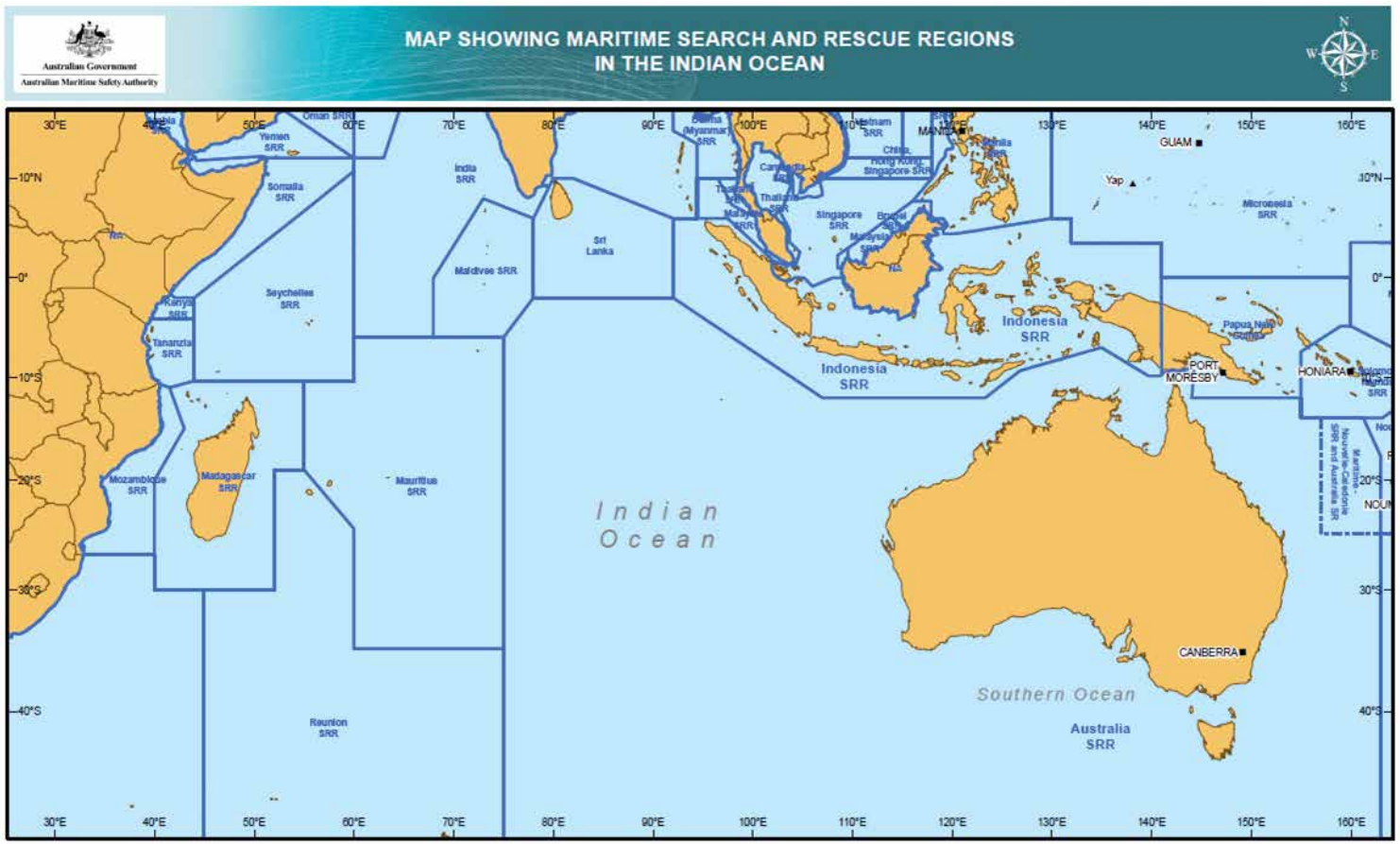
The search in the Indian Ocean for Malaysia Airlines flight MH370 is a strong example of not only the enormous difficulties involved in conducting search operations in such a vast and challenging environment, but also the goodwill of governments in the region to cooperate and provide the necessary resources to locate and rescue people involved in distress situations. The enormous contribution of countless civilian and military personnel from a range of countries illustrates the cooperative spirit we all share during such tragedies.

Australia has signed bilateral SAR agreements with a number of countries in the Indian Ocean region including Indonesia, South Africa, Sri Lanka, La Reunion and Maldives. These agreements aim to strengthen regional collaboration and cooperation between nations in line with relevant international

SAR conventions, including the *International Convention on Maritime Search and Rescue 1979* (the SAR Convention), the *Convention on International Civil Aviation 1944* (Chicago Convention) and the *International Convention for the Safety of Life at Sea 1974* (SOLAS).

The Australian government is already working in partnership with countries to improve search and rescue capability in our region, through programs such as the Indonesian Transport Safety Assistance Package. This program has been in place since 2007 and has delivered a range of activities including staff exchanges between AMSA and the Indonesian search and rescue agency BASARNAS; joint SAR exercises; implementation of an e-broadcast system, which provides an accurate near real-time graphical representation of vessels in or transiting through the Indonesian archipelago; and various training initiatives.

The Australian government intends to take the lessons learnt from this successful program and apply a similar model of cooperation to other parts of the Asia-Pacific and Indian Ocean regions to further develop the regions' ability to respond to search and rescue incidents.


Australian Government
Australian Maritime Safety Authority
MAP SHOWING MARITIME SEARCH AND RESCUE REGIONS
IN THE INDIAN OCEAN
Indian Ocean
Southern Ocean
Yemen SRR
Somalia SRR
India SRR
Sri Lanka
Maldives SRR
Seychelles SRR
Kenya SRR
Tanzania SRR
Mozambique SRR
Madagascar SRR
Mauritius SRR
Reunion SRR
Myanmar SRR
Singapore SRR
Indonesia SRR
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PORT MORESBY
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Australia SRR
30°E
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60°E
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MARITIME COOPERATION: THE SEARCH FOR MH370

PROTECTING AUSTRALIA'S SOUTHERN OCEAN FROM ILLEGAL FISHING

Australian Fisheries Management Authority

Illegal foreign fishing undermines the rules and regulations we have in place to ensure the sustainability of Commonwealth fisheries. The Australian Fisheries Management Authority (AFMA) together with other government agencies like the Department of Defence and the Australian Customs and Border Protection Service work together with our international counterparts to combat illegal fishing.

AFMA is the Australian government agency responsible for the efficient and sustainable management of Commonwealth fisheries resources on behalf of the Australian community. As such, AFMA plays a key role in the conservation and management of Commonwealth and high seas fisheries resources in the Southern Ocean.

Australia's Southern Ocean fisheries were the target of illegal foreign fishing operations in the mid to late 1990s and early 2000s. In an effort to combat this, AFMA implemented a range of strategies to protect these fisheries from illegal foreign fishing and, to prevent, deter and eliminate illegal, unreported and unregulated (IUU) fishing on the high seas. One strategy that has been very effective is the ongoing surveillance and enforcement cooperation between Australia and France.

In 2003, Australia and France signed the *Treaty between the Government of Australia and the Government of the French Republic on Cooperation in the Maritime Areas Adjacent to the French Southern and Antarctic Territories, Heard Island and the McDonald Islands* (the Treaty). This treaty entered into force in 2005 and created a framework to enhance cooperative surveillance of fishing vessels and encourages scientific research on marine living resources within the territorial seas and exclusive economic zones of Australian and French territories.

In 2007, Australia and France signed the *Agreement on Cooperative Enforcement of Fisheries Laws between the Government of Australia and the Government of the French Republic in the Maritime Areas Adjacent to the French Southern and Antarctic Territories, Heard Island and the McDonald Islands* (the Enforcement Agreement). This agreement entered into force in 2011 and builds on the Treaty. With the same area of application as the Treaty, it enables either party to engage in cooperative enforcement activities such as boarding, hot pursuit and apprehension.

Since the Treaty and supporting Enforcement Agreement came into force, Australia and France have carried each other's officers on their respective patrol vessels. This allows each country to exercise fisheries enforcement powers in the other's waters. These patrols generally cover areas in and around the Commission for the Conservation of Antarctic Marine Living Resources area of competence, the French territories of the Crozet and Kerguelen Islands and Australia's Heard Island and McDonald Island territory.

On average, the French undertake four patrols each year. When combined with Australian patrols, the policy intent is to provide year round on-water response capacity. Approximately 50 cooperative patrols have been conducted in the Southern Ocean since 2005-06.

Most recently, on 10 February 2013 the French patrol vessel FS *Nivose*, with two AFMA officers embarked, apprehended a Republic of Korea registered long-liner - the *Chung Yong 81* - after it was detected operating illegally inside the French Crozet Islands exclusive economic zone. AFMA officers assisted the French in the boarding and subsequent investigation of this vessel. The vessel was escorted back to La Reunion for further investigation and subsequently convicted on 14 June 2013. The fishing equipment and cargo of Patagonian toothfish (Dissostichus Spp) on board the *Chung Yong 81* was seized and the master fined €300,000.

Cooperative enforcement activity in the Southern Ocean between Australia and France is a key strategy that has been developed to prevent, deter and eliminate IUU fishing. International cooperation is integral in protecting Australia's Southern Ocean fisheries from illegal foreign fishing and to combat IUU fishing on the high seas.

FORMULATING A MARITIME STRATEGY FOR SRI LANKA

Captain Akram Alavi, Sri Lanka Navy

The foundations for maritime strategy in the 21st century are laid on centuries of practice, but on only a relatively short period of analysis and theoretical examination. It was only about a century ago that Alfred Thayer Mahan pointed out the role of sea power in wartime national policy and it has been only 80 years since Sir Julian Corbett first provided a more complete theoretical statement of the principles for establishing control of the sea in wartime. Since then, both naval and maritime practice as well as theory has progressed, widening our perceptions. The security of Sri Lanka derives from a combination of factors, including the maintenance of a highly competent naval force equipped with advanced technology and structured for a unique geostrategic environment. The formulation of defence policy or doctrine should be governed by the following prime factors:

- political objectives of the country
- threats to the security of the country
- economic resources of the country.

Sri Lanka is in the midst of a transition from focusing on internal security to external security. We should equip the forces with modern weapons and greater mobility, and develop air and maritime capabilities with modern platforms. Defence relations with India and other Asian countries will continue to be important, both for sustaining self-reliant capability for the defence of Sri Lanka, and for supporting wider regional security. The adoption of a maritime strategy has several important advantages. It provides a theme for tactical and technical development. The statement of strategy is also a statement of problems to overcome. Why then should Sri Lanka need a maritime strategy? The answer would be the choice of a strategy that focuses interest and creative energy within the Navy on solutions to the tactical and technical problems associated with that strategy. Without some basic choices it is impossible for the Navy to place relative values on its various programs. By adopting a particular strategy, the Navy can explain itself more effectively to the nation, which assigns its resources. All these considerations mean that it must fulfil the basic requirement of the national interests of Sri Lanka. The choice of some particular maritime strategy is far better than none.

Sri Lanka is strategically important due to its centralised geographical location in the Indian Ocean. Sri Lanka has the advantage of a large ocean area under her jurisdiction, and there may be enormous hidden wealth in this area waiting to be exploited. The ocean may be the answer to alternative sources of energy to meet the requirements of a future Sri Lanka. It has also been recognised that there is a need to protect and manage the oceans for use by present and future generations. The effective surveillance of such a large ocean area may not be possible with surface ships alone. The naval forces have key roles to play during peace and war. The Sri Lanka Navy should prepare to maintain surveillance and carry out various tasks in its exclusive economic zone and around our coast. Therefore it is important to expand the fleet to carry out effective maritime operations off Sri Lanka.

Sri Lanka should not be concerned with comparing or competing with global or regional naval powers. As a developing nation with an essentially constabulary naval capacity, Sri Lanka should optimise her naval presence and effectiveness, within her exclusive economic zone to the best of her ability at all times. Thus, Sri Lanka being in a key strategic location needs an effective and efficient navy, comprising such ships capable of safeguarding and defending the nation's interests, including:

- ensuring stability in trade and commerce and such economic activity, which are largely dependent on safe sea passage
- safeguarding a coastline of over 679nm and a sea area over eight times the landmass area
- protecting the entry and exit of over 4 million containers annually brought by ships, arriving or transiting via the ports of Colombo, Galle and Trincomalee and in future the port of Hambanthota
- protecting the entry of approximately 400 shiploads of food, raw material and consumer items for the nation's use and transhipment every month
- protecting sea lines of communication located along the southern and eastern coasts of the island
- safeguarding the traffic separation zone at Dondra Head, one of the busiest in the world
- the protection and exploitation of the maritime fishing industry with emphasis on deep sea fishing in the sea area of control, which greatly add to the state's economic gains
- maintaining safe communications of local shipping within the exclusive economic zone, against terrorism, sea piracy, gun running, drug trafficking, smuggling and illicit immigration and emigration
- protecting the environment and installations such as harbours, offshore rigs and structures and submarine cables
- Sri Lanka being a littoral state can claim the sea area beyond the exclusive economic zone for the sovereign right of mineral deposits and certain biological resources.

The large area falling under the jurisdiction of Sri Lanka has given us much hope for economic development involving the exploitation of natural resources on and below the sea in an area almost eight times the land area of our country. The wealth and resources within this vast area are enormous. Their exploration and exploitation will make Sri Lanka one of the richest countries in Asia. These resources are broadly:

- ocean bed minerals
- petroleum, gas and shale
- potential for energy generation (ocean thermal energy conversion)
- fishery resources
- rights resources including possible levies on international shipping moving through this zone.

It is important to access and manage these resources carefully after surveying and mapping them, and formulating short, medium and long term plans for their: exploration, development, conservation and surveillance. Today we have new methodologies of science and technology using the full range of the electro-magnetic spectrum to take basic survey measurements, using different remote sensing techniques. This will determine the both living and non-living resources. The task of exploration

and exploitation of these resources should include measures for prevention of other countries from exploitation of our resources. Thus it would also require maritime surveillance.

The immediate purpose of maritime strategy is to contest control of the sea, at least to some degree. The stronger naval power probably seeks to contain the enemy by a policy of blockade and a fleet-in-being strategy. This will effectively neutralise the enemy's forces and preventing him from contesting the command of the sea. Being in command of the sea simply means that a navy can exert more control over the use of the sea. Whilst preparing the naval fleet to face any asymmetric threat like that posed by the Liberation Tigers of Tamil Eelam (LTTE), we must continue surveillance and carry out various tasks in the exclusive economic zone and around our coast. Some of the areas suggested for this process are:

- enhance the naval fleet to carry out various tasks within the excusive economic zone with more endurance and range of operation whilst improving inshore security
- formulation of a coastguard force with an integrated deep water system
- assist the agencies that carrying out ocean research and development
- protect and safeguard sea lines of communication within our jurisdiction
- improve the weapons outfit and sensors of naval warships and craft with enhanced range and fire control systems
- improve maritime surveillance capability in liaison with the Sri Lanka Air Force and the Indian Navy
- obtain assistance from India to conduct joint patrols
- maintain an auxiliary/amphibious/sealift capability to a desired degree
- improve defences and development of ports
- improve intelligence gathering mechanisms by obtaining assistance from foreign countries and satellites along with other high technology sensors
- develop a tactical picture around our country combining all sensors such as ships, aircraft, satellites, fishing vessels, merchant ships, and shore-based radar stations
- modify training methods and contents based on lessons learnt and be at par with the latest developments in science and technology
- a proper analysis should be carried out by a high level team after each battle or an incident to identify problems and to improve fighting efficiency; a record has to be maintained and their observations, findings, and recommendations have to be brought to the notice of the relevant personnel concerned
- adopting maritime confidence building measures such as sharing general information on doctrine, policies, and force structure
- for maritime warfare; army, navy and air force strategies have to merge and should bring a closer affiliation, which should be reflected in a joint approach to maritime strategy.

The threat to the Sri Lanka Navy from enemy suicide boats drastically increased in the past. To counter that threat, the Navy upgraded its fast attack craft squadron by acquiring craft with high manoeuvrability, firepower and speed. It is important to note that the fleet should be balanced to carry out the roles of the

Navy and should shape the capabilities and be superior to an enemy in terms of operational priorities. The ideal fleet for the Sri Lanka Navy could be a composition of the following squadrons of ships and craft:

- offshore surveillance squadron
- fast attack craft squadron
- auxiliary squadron
- inshore patrol squadron.

In modern naval combat, effective scouting is the key to effective weapon delivery. The need for offshore control is radically different from those of land-based policing. The patrol vessels with tactical data links can be used to transmit data through a shore-based gateway or ground entry terminal, to the database of the integrated radar system.

In the recent past, fast attack craft were mainly responsible for the destruction of most of the enemy's craft and will remain as the vanguard of the Navy. The weapons outfit has to be continuously tested and the capabilities and shortcomings observed by expert teams. History shows us that naval battles are hard fought and destructive, but high morale and courage in combat always depend on superior equipment. Therefore the Navy should be in possession of well-fitted fast attack craft for outwitting or outfighting an unequalled threat.

The amphibious capabilities of the Navy will remain an important element of the fleet when transporting troops and equipment. Sri Lanka as an island nation needs the amphibious element of the fleet to remain strong and capable to react to any urgent requirement from the army. The auxiliary squadron may remain as the workhorse of the Navy.

Owing to continuous harbour security and inshore patrol requirements, demands for inshore patrol craft will remain unchanged, but their weapons outfit will need to be reviewed against the threat perception.

The Sri Lanka Navy should be structured to maintain a favourable maritime situation and to carry out all the tasks entrusted to her in an effective manner. In this process the Navy requires various platforms, weapons and sensors from various sources. The recommended platforms are frigates, offshore patrol vessels, maritime patrol aircraft and corvettes to carry out effective maritime operations off Sri Lanka.

The Sri Lanka Navy of tomorrow will therefore need to have a dual role: that of protecting her shores and the seas. The Navy's future platforms, sensors and training will need to keep this dual role in mind. The formulation of strategy is also an attempt to formalise the ideas and the elements of maritime warfare. In this sense, the formulation of a maritime strategy is the latest in a long series of attempts to bridge the very broad gap between air, land and naval strategic thought in relation to Sri Lanka maritime operations.

PROMOTING MARITIME SECURITY – A CASE STUDY OF BANGLADESH

Lieutenant Commander Sohel Azam, Bangladesh Navy

The sea has played a crucial role in the development of mankind since antiquity. It is important for its various living and non-living resources, transportation and also functions as a strategic dominion. With the increase of globalisation, nation states are more focused on global trade by sea which necessitates promoting maritime security. Seaborne trade has doubled in every decade since 1945 and it has been estimated that currently 6.8 billion tons of goods are moved by the sea annually that entails a global trade circle worth US$7.4 trillion. However, various security concerns have emerged in the maritime domain affecting nation states' interests.

Maritime security is a component of national security that deals with the sea and matters related to it. Its importance cannot be overemphasised as it affects territorial integrity, human security and economic prosperity. The ambit of maritime security is very wide, covering many aspects. It includes territorial disputes; piracy and armed robbery; maritime terrorism; illicit trafficking in drugs, arms and people; and maritime pollution etc. Therefore, it is necessary to maintain good order at sea to effectively deal with these challenges for promoting maritime security. Good order at sea can be seen as an ideal concept for a safe maritime environment. Awareness of maritime affairs, sustainable policy and its implementation are paramount for maintaining good order at sea.

Economically and strategically Bangladesh remains a maritime nation in the Indian Ocean region. This maritime domain may be viewed as the surest way for Bangladesh to pursue its national interests. Since the sea accounts for nearly 92 per cent of its total trade, the interrelationships between the desired economic growth and the maritime security is vividly evident. As the economic interests of regional countries become increasingly interdependent, it is imperative to promote maritime security through maintaining good order at sea.

The aim of this paper is to analyse how maritime security can be promoted through maintenance of good order at sea, using Bangladesh as a case study.

Concept of Maritime Security and Good Order at Sea

The concept of maritime security has undergone a paradigm shift as geopolitical boundaries fade away due to globalisation and the emergence of asymmetric threats. As the arena of maritime security is very wide, scholars have many interpretations of the term. Harun ur Rashid states, 'Maritime security is a multi-disciplinary concept that involves military science, police science, domestic and international laws and the geopolitics of the area concerned'.[1] Recent analysis suggests

> Maritime security is a responsibility, which has no clear definition when it comes to maritime security operations: it is a governmental responsibility, but the authority to act on behalf of a state is a sovereign decision with different options.[2]

The multinational think tank Wise Pen International defines maritime security as 'The combination of preventive and responsive measures to protect the maritime domain against threats and intentional unlawful acts'.[3] This discussion indicates that the concept of maritime security is still evolving and which is yet to take an agreed version. Evidently yet, the core concept revolves around preserving the maritime interests against perceived threats.

Good order at sea is an imperative model in a maritime security concept. It focuses on the safety and security at sea, permitting countries to pursue their maritime interests and develop marine resources. A lack of good order at sea is implied if there are illegal activities at sea or inadequate safety for shipping. Inadequate resources, or ineffective or absent national legislation and poor coordination between national agencies hinder the attainment of good order at sea. As Geoffrey Till notes, 'The maintenance of good order at sea requires an improved level of awareness, effective policy and integrated governance.'[4]

Figure 1: Good Order at Sea: General Requirements[5]

To enhance maritime awareness, navies and coastguards may play important roles. A proper maritime policy generates the required strategy for oceans governance. Besides, all maritime aspects must be integrated into relevant land-based agencies to develop a comprehensive maritime policy. Australia implemented integrated oceans planning and management through the establishment of a comprehensive oceans policy in 1998. The government, policymakers, naval and other related agencies should cooperate together for achieving an effective result in managing maritime issues. Geoffrey Till argues that the naval and civilian agencies should develop an integrated approach to maintain good order at sea: 'they must think, talk, plan and operate together.'[6]

The Maritime Interests of Bangladesh

The fisheries sector plays vital role in providing protein, employment and earns foreign currency thus contributing to economic development. In 2010-11, the marine sector contributed 18 per cent of the total fish production in Bangladesh. As noted by the Food and Agricultural Organization, Bangladesh ranks sixth among the top ten aquaculture producing countries of the world. According to the *Fisheries Statistical Yearbook of Bangladesh 2010-11*, the fisheries sector contributed 4.43 per cent to national gross domestic product. The country's export earnings from this sector were 2.73 per cent in 2010-11. About 10 per cent of the total population is directly or indirectly employed in fisheries sector.

The Bay of Bengal is believed to be rich in hydrocarbons. Bangladesh has already extracted 89 trillion cubic feet of gas and there are high hopes of huge gas deposits in the Bay. Petrobangla, through Bangladesh Offshore Bidding Round 2012, has invited offers from international oil companies to explore the hydrocarbons in the Bay.[7] Bangladesh also extracts salt and silica from sea.

Maritime trade has continuously grown since Bangladesh independence. It rose to over 430 million tons in 2011, compared to 270 million tons in 2006. In 2010, total seaborne trade was US$37.58 billion, rising to US$55.61 billion in 2011. Over the period 2006 and 2011, the number of vessels handled per year at Chittagong Port increased from 1957 to 2258.

Maritime Security Challenges Facing Bangladesh

The nature of 'piracy' in Bangladesh does not conform to that of the *United Nations Convention on the Law of the Sea 1982* which defines it as an illegal act involving violence, detention and depredation committed for private ends on the high seas beyond the 200nm exclusive economic zone. However, alternative definitions provided by the International Maritime Organization (IMO) and Regional Cooperation Agreement on Combating Piracy and Armed Robbery in Asia (ReCAAP) conform more closely to the acts of piracy in Bangladesh, such as armed robbery, theft etc and Bangladesh accepts both definitions.

Bangladeshi pirates (*Jala Dasyus*) are not capable of going out to the high seas and their activities are limited to armed robbery on ships anchored in territorial waters. They mainly attack ships for equipment, cargo, ropes, zinc anodes etc. They also attack fishing vessels for fish and money. For lack of sophisticated ships able to go into deep waters, their activities are confined to coastal waters that can be brought under strict surveillance by law enforcement agencies.

In spite of the realities mentioned above on piracy in Bangladesh, the International Maritime Bureau (IMB) in 2006 labelled Chittagong as the 'most dangerous port in the world'. However, a distinct improvement is seen in the recent years as shown in the following IMB data over the period 2006-13 on piracy incidents in this region:

Country	2006	2007	2008	2009	2010	2011	2012	2013
Indonesia	50	43	28	15	40	46	81	106
Malaysia	10	09	10	16	18	16	12	9
Bangladesh	***47***	***15***	***18***	***18***	***23***	***10***	***11***	***12***
India	05	11	10	12	05	06	08	14
Somalia	10	31	19	80	139	160	49	7

Table 1: IMB data on regional piracy (actual and attempted) 2006-13[8]

From Table 1, the improvement is evident in Bangladesh where the piracy incidents are on declination since 2006 showing the lowest in 2011. ReCAAP commended the surveillance and counter-piracy actions undertaken by Bangladeshi authorities.

Fish catch becomes illegal when prohibited nets are used, unlicensed fishermen catch fish and fishing takes place during prohibited period etc. Over exploitation also threatens the limited stock of fish leading to greater reduction in future production. Poaching by unauthorised fishing trawlers also causes declines in fish stock. A UN Development Programme survey estimated that annual sustainable yield in the Bay of Bengal is about 389,000mt, of which about 118,000mt are harvested annually.

Gun running by sea is a safe means of transferring illegal arms around the world. Arms originating in Afghanistan pass through Pakistan and mostly enter Bangladesh through Chittagong and some offshore areas. The seizure of large numbers of submachine guns, AK-47 rifles and rocket propelled grenades with launchers during unloading off Chittagong port on 2 April 2004 bears this out. Simultaneously, trafficking of contraband items such as drugs and alcohol also take place by sea. Frequent smuggling of goods like timber, rice, salt, luxury items, etc in and out of the country is a regular phenomenon. Various media reports also show that human trafficking bysea is also on the rise.

The marine environment is seriously threatened by pollutants washed down from the land and through dumping. The upstream rivers originating in India, Nepal or Bhutan ultimately empty into the Bay of Bengal with huge pollutants from different sources. The sources of this pollution include industrial waste, oil spills from ships, ship breaking, bilge discharge, refinery waste, sewage from ships etc.

Linking Maritime Security to the National Economy

The discussion above amply shows that Bangladesh has vast interests at sea and there exist significant challenges as well. While trade and resources boost the economy, the threats dwindle it. A reduction in threats to maritime interests will ensure safe trade and effective exploitation of resources at sea. Here, maritime security comes into play, which can be enhanced if good order at sea can be maintained through an integrated approach and strategy drawn from an appropriate maritime policy. Thus enhanced maritime security directly contributes to the national economy. The following diagram explains the interrelations between all these factors discussed.

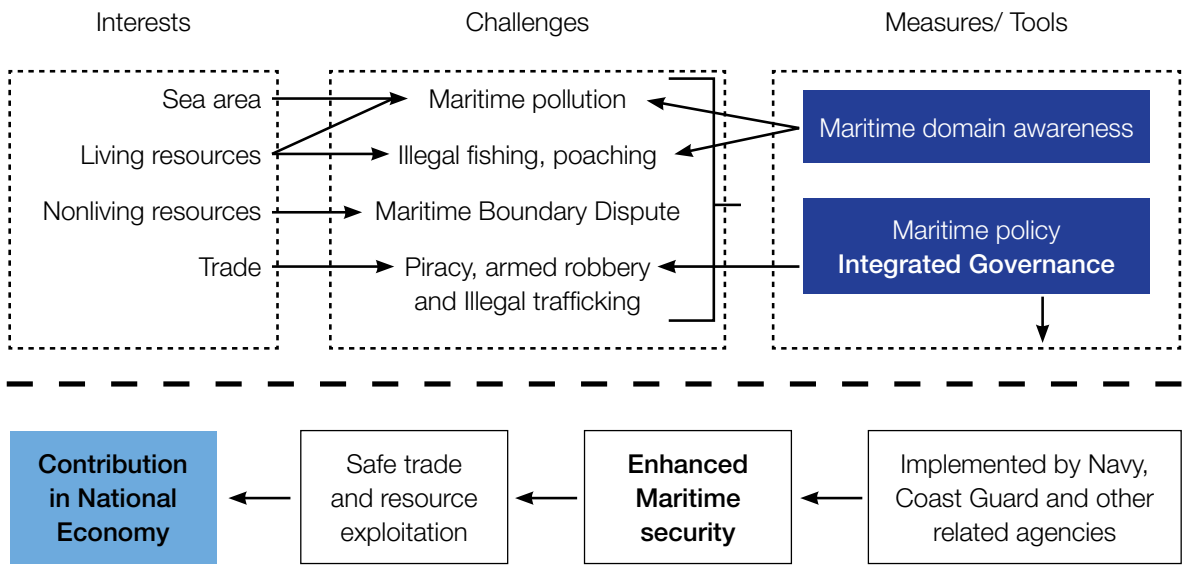

Figure 2: Linking Maritime Security to National Economy

The following two examples validate the links shown in Figure 2:

After the IMB labelled Chittagong as the most dangerous port in the world, the Bangladesh Navy and the Bangladesh Coast Guard took integrated efforts to curb piracy incidents. Their ships deployed on patrol, exchanged information and responded to piracy/armed robbery calls whoever remained in the close proximity of the attacked ship. Rapid information exchange and coordinated action brought significant fruit. As a result, the incidents dropped from 47 in 2006 to 11 in 2012. It is clearly evident that the enhanced security contributed to the economy directly, leading to the increase in number of vessels visiting Chittagong port from 1913 in 2006 to 2308 in 2011.

To increase fisheries production of hilsha, in 2003 the government adopted a coordinated management program to protect juvenile stocks. The objective of this program was to make all stakeholders aware of the importance of the hilsha fishery in the national economy. A comprehensive program ensuring the participation of all stakeholders including local administration, Navy, Coast Guard, Department of Fisheries, fishermen and the public was undertaken.

What Bangladesh Needs to Do?

The maritime security challenges discussed above cannot be dealt with in isolation. In order to secure national interests and address existing threats, an integrated management approach is necessary. The concept of maintaining good order at sea emphasises such an integrated approach. A few pertinent aspects where Bangladesh needs to focus are discussed below.

Constant endeavour is required by maritime stakeholders to build maritime consciousness. Enhanced awareness will allow sea users to reduce marine pollution and stay away from illegal fishing. A maritime-aware community will also be less prone to illegal trafficking of people, drugs and contraband goods by sea.

Adopting an appropriate maritime policy is essential for the management of ocean and coastal affairs. This policy should encompass issues like transportation, exploitation of resources, maritime services, seaborne trade, ports, maritime threats etc. Without a maritime policy, the country can neither identify maritime related issues nor achieve maritime security.

A comprehensive approach to maritime security demands a central national organisation to deal with all matters. Thus it is essential to create a 'National Maritime Commission' which would coordinate all activities related to the detection and prevention of security threats emanating from the sea. The purpose of the National Maritime Commission would be to promote cooperation amongst various maritime agencies and act as liaison between law enforcement agencies, maritime community and government.

Operational commanders, deployed forces and maritime agencies need extensive knowledge of all activities that can impact upon maritime security. This necessitates multi-agency information flow between the Navy, Coast Guard and other agencies. Such an integrated approach will enable the optimum use of assets and promote inter-sectoral cooperation to address complex maritime issues.

Good order policy at sea is implemented by the Navy and the Coast Guard. Both contribute immensely to the national economy by addressing the prevailing maritime threats. In August 2013 alone, the Coast Guard seized smuggled items, illegal drugs, arms and fishes worth US$50 million, arrested 51 pirates and 47 people proceeding abroad illegally by sea. Thus, capacity of both the Navy and Coast Guard is a crucial need for Bangladesh.

Many of the threats like piracy, illegal fishing, illegal trafficking in arms, drugs and people etc have regional links. Thus, regional cooperation is essential. Bangladesh may also exploit the Indian Ocean Naval Symposium (IONS) initiative to enhance regional maritime security. The objectives of IONS are to formulate strategy, promote cooperative mechanism and develop interoperability to address maritime security challenges in the Indian Ocean. Thus cooperative maritime surveillance in the Bay of Bengal under the IONS umbrella is certain to yield effective results.

Conclusion

The turn of the 21st century has seen the use of sea not only for trade, resources and communication but also as a strategic dominion, which more than ever, necessitates a safe maritime domain. Maritime security can be defined as the combination of preventive and responsive measures to protect the maritime domain against threats and unlawful acts. Such measures are embedded in the concept of good order at sea that advocates increased maritime awareness and integrated governance under a maritime policy. A lack of good order is implied if illegal activity at sea takes place.

It is evident from the discussion above that the concept of good order at sea already prevails in Bangladesh, though it is yet to formulate adequate policy and establish related functional bodies. The concerted effort of the Navy, Coast Guard and other government agencies contributed significantly to the Bangladesh fisheries sector. Their integrated approach in curbing the piracy/armed robbery incidents at Chittagong port brought significant change since 2006 that earned the recognition of the IMB and ReCAAP.

Some measures are essential to promote maritime security by establishing good order in Bangladesh waters. Integrated action by the Navy, Coast Guard and other maritime organisations will allow them to monitor the sea area effectively. This requires capacity building of the Navy and Coast Guard. Formulation of a maritime policy and a National Maritime Commission are now needed. To address the transnational challenges, the littoral states in the Bay of Bengal may pursue cooperative maritime surveillance under the IONS umbrella. All such measures pertinent to good order for promoting maritime security will uphold maritime interests and are destined to foster sustained economic development in the Indian Ocean region.

Endnotes

1 H Rashid, 'Maritime Security: Diplomatic Initiative', paper presented at a seminar on the *Maritime Security of Bangladesh* organized by BIISS on 12 February 2009.

2 L Feldt, P Roell, and RD Thiele, *Maritime Security – Perspectives for a Comprehensive Approach*, Institute for Strategic, Political, Security and Economic Consultancy, Issue No 222, April 2013, www.maritimesecurity.org/Reports%20&%20Regs/222_Feldt_Roell_Thiele.pdf.

3 The Wise Pen Team, *Maritime Surveillance in support of CSDP*, Elcano Royal Institute for International and Strategic Studies, 26 April 2010, www.realinstitutoelcano.org/wps/wcm/connect/3e3e4d8042cc996b98adf95cb2335b49/The_wise_pen_team_final_report_april_2010.pdf?MOD=AJPERES&CACHEID=3e3e4d8042cc996b98adf95cb2335b49.

4 Geoffrey Till, *Seapower – A guide for the twenty first century* (3rd ed), Routeledge, London, 2009, p. 306.

5 Till, *Seapower*, p. 307.

6 Till, *Seapower*, p. 310.

7 Petrobangla (Bangladesh Oil, Gas and Mineral Corporation) is a government-owned national oil company of Bangladesh.

8 ICC-IMB, *Piracy and Armed Robbery Against Ships - Annual Report* (various).

THE BAY OF BENGAL - A SAFE CORRIDOR FOR MARITIME TRADE

Commander Atiqur Rahman, Bangladesh Navy

Maritime security plays an increasingly important role in sustaining the maritime freight system allowing the continued growth and development of seaborne trade. Around 80 per cent of global trade is routed through the sea. Maritime transport is the backbone of international trade and the main mechanism that is driving globalisation. The growth of maritime transport is strongly correlated to the growth of international trade. Maritime security and economic development are interdependent. In the present context, developing countries are major world players both as importers and exporters. Freight traffic is continuing to grow in South Asia particularly in India, Bangladesh, Sri Lanka and other littoral countries in the Bay of Bengal region. In this context, security in the Bay of Bengal is highly important and has strategic implications for regional as well as global maritime trade.

Since 1970, global seaborne trade has expanded by 3.1 per cent on an average every year. At this pace, if no major upheaval takes place in the world economy, global seaborne trade is expected to increase by 36 per cent in 2020 and to double by 2033. In 2010, about three quarters of the growth of imports of developing economies took place in East and South Asia where the Bay of Bengal littorals have a lion share. For example, the growth rate of gross domestic product is about 6.1 per cent whereas maritime trade growth rate was about 15 per cent for the last five years.

The funnel shape of the Bay of Bengal greatly facilitates exports and imports of eastern India, Sri Lanka, Bangladesh, Myanmar and Thailand. Nepal, Bhutan and the eastern Indian provinces can also benefit by moving their trade through Bangladesh. The trade of this region is expanding rapidly in different maritime sectors, including shipbuilding, ownership, registration, operation, scrapping and manning. More than 92 per cent of the total ship scrapping in 2011 took place in India, China, Bangladesh and Pakistan. A major portion of global 'ready made garments' particularly of western countries are manufactured in the Bengal littoral states. A large and cheap labour force, combined with sea transport, is the main catalyst. To improve their trade potentiality, China, the United Kingdom and UAE have proposed the construction of a deep sea port on the Bangladesh coast. As such, maritime trade security in the Bay of Bengal is an issue of both regional and global interest.

Maritime transport is subjected to various threats, such as belligerent attack, terrorism, pirate attack, robbery etc. Amongst all, piracy remains as the most ancient, devastating and the costliest type. In 2012, 341 piracy and armed robbery attempts were reported worldwide, of which 226 actually took place.[1] As stated by the International Maritime Organization, five crew members were killed (all in West Africa) compared with seven casualties in 2011. In 2012, about 313 crew members were taken hostage/kidnapped and 26 ships were hijacked. This number was even higher in 2011 where 599 crew members were taken hostage/kidnapped and 50 ships were hijacked. Piracy and robbery cause extra costs to shipping as additional precautions for the ships while operating in the risky area are required. The global shipping security measures costs over US$16 billion per year.

Figure 1: The Geostrategic Importance of Maritime Trade in the Bay of Bengal

Due to the global nature of trade, security issues are significant for both national interests as well as international obligations. Maritime trade security is regulated under international and national laws, enforced by governments and monitored by non-government organisations. The *United Nations Convention on the Law of the Sea 1982* (LOSC) is the basis of a nation's rights and obligations concerning the sea. The International Maritime Bureau, the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP), and other agencies monitor piracy; while navies and coastguards act as the guardian and ultimate protectors of ships. The aforementioned international organisations monitor piracy worldwide and provide advice to ships under attack. Based on piracy incidents, the International Maritime Bureau grades the status of a coast or port as high risk, low risk etc and issues warning to ships. Somalia, the Malacca Strait, and the Indonesia and African coasts are graded as high risk areas. No major piracy takes place in the Bay of Bengal region; however petty theft and robbery are occasionally reported by ships which have reduced significantly in the recent years.

According to the International Maritime Bureau, the major piracy prone port/areas of the world over recent years have been:

Location	2007	2008	2009	2010	2011	2012	2013
Indonesia	43	28	15	40	46	81	106
Malacca Straits	7	2	2	2	1	2	1
Malaysia	9	10	16	18	16	12	9
Singapore Straits	3	6	9	3	11	6	9
Bangladesh	15	12	18	23	10	11	12
South China Sea	3	-	13	31	13	2	4
India	11	10	12	5	6	8	14
Benin	-	-	1	-	20	2	-
Gulf of Aden *	13	92	117	53	37	13	6
Red Sea**	-	-	15	25	39	13	2
Nigeria	42	40	29	19	10	27	11
Somalia	31	19	80	139	160	49	7
Total at year end world wide	**263**	**293**	**410**	**445**	**439**	**297**	**264**

Table 1: International Maritime Bureau Piracy data (actual and attempted) 2007-13[2]

International Law on Maritime Crime

The piracy definition and protection measures described in LOSC article 101 do not cover armed robbery against the ship, and as such, are not applicable in case of robbery. However, robbery is a common crime suffered by ships in many ports, albeit they usually report any security breach as piracy. This misleads the international organisations monitoring piracy. In 1983 the International Maritime Organization provided guidance on piracy and armed robbery at sea.[3] The resolution also provides governments with jurisdiction to prevent acts of piracy and armed robbery while ships are in or adjacent to their waters.

In the aftermath of the *Achille Lauro* terrorist incident, the *Convention for the Suppression of Unlawful Acts of Violence against the Safety of Maritime Navigation 1988* (SUA Convention) established jurisdiction over offenses taking place in state's territory and other places where they have criminal jurisdiction (such as on a ship or aircraft registered in their state), or when an alleged offender is present in their territory. Criminal offenses as defined in the convention are punishable by domestic law with serious penalties.

In the aftermath of the 11 September 2001 terrorist attacks on the United States, on 20 November 2001 the International Maritime Organization called for a review of the existing measures and procedures to prevent terrorism threatening security of ship passengers and crew, leading to the SUA Protocol 2005.

In certain cases, this protocol permits boarding and search of suspected ship by law-enforcement officials when the ship is in international waters.

Miscreants in coastal areas board ships either by hiding onboard while in port or through the use of force at sea, to steal items of value. Most incidents take place while ships are at anchor or are berthed. Pirates will gain access to ships using small boats and by climbing on deck using ropes and cables. Sometimes miscreants will also be near ships under the guise of supplying fresh provisions. Piracy, stealing and illegal trading are traditional activities carried out by some coastal people and have become part of their socio-economic culture. Criminals in this region are mostly illiterate and not aware of the impact of their actions. Figure 2 shows an analysis of piracy in the Bay of Bengal region.

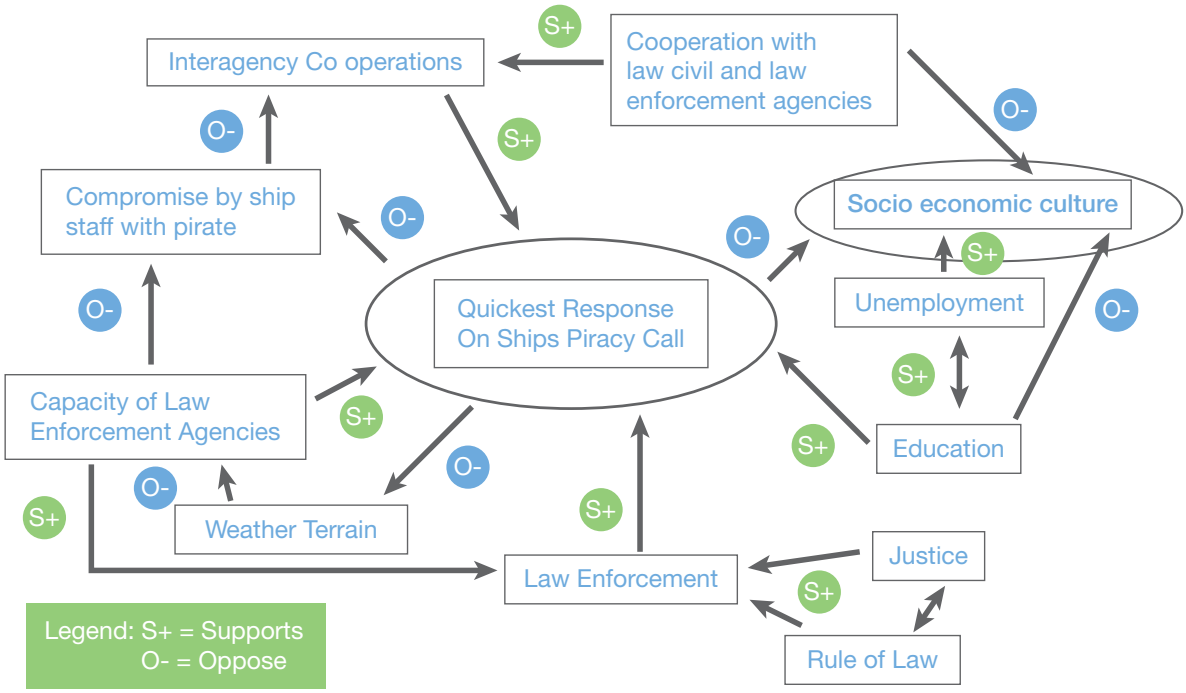

Figure 2: the Piracy Causal Loop

Figure 2 shows the interrelated factors that influence (S) and oppose (O) piracy. The socio-economic culture is considered as the root cause of piracy. Miscreants do it as their ancestors did it and as some other people in their society are doing. Miscreants are not heavily armed compared to the Navy and Coast Guard. So, a 'quick response by ships on call' has proved to be very useful in apprehending pirates. But the responding capability directly depends on the capacity of law enforcement agencies like the Navy and Coast Guard.

In recent years the littoral states of the Bay of Bengal have achieved reckonable success in combating maritime crimes which is well recognised by international piracy monitoring and forecasting agencies.

Counter-piracy operations are carried out primarily by the Coast Guard and Navy with the assistance of port authorities. In recent years, amongst the littoral states, the capacity of the Bangladesh Navy and Coast Guard has improved remarkably with the inclusion of high speed boats, maritime patrol air craft, helicopter and modern ships. In addition, a new navy base on the southern coast and newly built coastguard stations will strengthen the wide security coverage of the maritime agencies operating along Bangladesh coast. As a whole, the nation is much more aware about the security needs of its maritime sector. Overall political stability and interstate relations in the region are also favourable to ensuring regional maritime security in the Bay. In particularly, the settling of the Bangladesh/Myanmar maritime boundary delimitation issue in 2013 and the peaceful process of the same between Bangladesh and India through the Permanent Court of Arbitration in 2014 is leading the region towards sustainable security and peace for maritime trade.

The funnel shaped strategic Bay of Bengal facilitates the maritime trade of Bangladesh, parts of India, Myanmar, and Sri Lanka. Land-locked Nepal and Bhutan can also be benefit by using Bangladesh sea ports. The Bay of Bengal region has one of the cheapest labour markets in the world where shipping provides unique transport facilities for international investors. The huge demography in the Bay of Bengal region also creates large consumer markets for multinational companies, and domestic and international maritime trade is growing faster than ever before. Building new major sea ports and capacity enhancing of existing sea ports continue.

To meet this growth, Bangladesh maritime forces like the Navy and Coast Guard are reshaping with modern platforms, equipment and weapons. The recent inclusion of modern fast moving ships and boats, maritime helicopters, patrol aircraft, integrated coastal management provide seamless security coverage to the maritime agencies. The recent success in security assurance of the Bangladesh coast has been duly recognised by International Maritime Bureau and ReCAAP. The expansion and capacity building of Bangladesh maritime forces meets the increasing security demand. The economic growth is complementing the changing socio-economic culture and security situation. Currently, the Bay of Bengal is safer than at any time before. The law enforcement agencies are capable of ensuring security to all traders in the Bay. The peaceful resolution of Bangladesh/India/Myanmar maritime boundaries has opened the gateway toward sustainable security in the region.

Endnotes

1 International Maritime Organization, *Reports on Acts of Piracy and Armed Robbery Against Ships, Annual Report 2012*, www.imo.org/KnowledgeCentre/ShipsAndShippingFactsAndFigures/Statisticalresources/Piracy/Documents/Piracy%20annual%20reports%201996%20-%202012/17_MSC_4.Circ.193%20-%202012.pdf.

2 ICC-IMB, *Piracy and Armed Robbery Against Ships - Annual Report* (various).

3 International Maritime Organization, *Code of Practice for the Investigation of the Crimes of Piracy and Armed Robbery Against Ships* (resolution A.1025(26), annex, paragraph 2.2), London, 2003.

MARITIME BOUNDARY ARBITRATION IN THE BAY OF BENGAL

Bangladesh Navy

On 7 July 2014, a 40-year-old dispute on India and Bangladesh's maritime boundaries in the Bay of Bengal came to an end after the verdict delivered by the United Nations Permanent Court of Arbitration based in The Hague, Netherlands. The tribunal granted approximately 106,000 km^2 to Bangladesh and 300,000km^2 to India, out of a total relevant area of 406,000km^2.

On 31 May 2011, Bangladesh filed her proposal on Indian claims that overlapped some shallow and deep sea areas within and beyond 200nm from Bangladesh baselines. Later on 31 July 2012 India submitted its Counter-Memorial followed by Bangladesh's submission of reply on 31 January 2013. The court collected charts, maps, and hydrographic surveys of the relevant area, as well as information on shipping, navigation and fishing activities there. The verdict, binding on both countries, opens the way for both Bangladesh and India to get access to the Bay of Bengal and take actions for utilising its water, fisheries and mineral resources. Now Bangladesh and India have a clear picture of their offshore territories, their exclusive economic zones, as well as their continental shelves.

Earlier, in March 2012 Bangladesh also resolved a similar sea border dispute that had been a long standing point of controversy with neighbouring Myanmar, with a ruling made by the International Tribunal on the Law of the Sea in Hamburg. Its verdict sustained Bangladesh's claim to a 200nm exclusive economic zone and territorial rights in the Bay of Bengal against Myanmar's claim.

Figure 1: Bay of Bengal undelimited maritime boundaries

Figure 2: Bay of Bengal maritime boundaries


INDIAN OCEAN NAVAL SYMPOSIUM

ENHANCEMENT OF BANGLADESH MARITIME SAFETY AND SECURITY

Captain Anisur Rahman Mollah, Bangladesh Navy

Bangladesh is a low-lying riverine country located in South Asia with a coastline of 710km on the northern littoral of the Bay of Bengal. It has land borders on the west, north and east with a 4095km border with India and a short land and water frontier of 193km with Myanmar. On the south is a highly irregular deltaic coastline fissured by many rivers and streams flowing into the Bay of Bengal.

The Bay of Bengal, the largest bay in the world, forms the north-eastern part of the Indian Ocean. Under international law and various maritime zones, a considerable portion of the Bay belongs to Bangladesh providing the potential for access to living and non-living resources. The Bay is the lifeline of the country for transportation of her exports and imports and also for other various maritime activities dependent upon it.

Bangladesh is densely populated with limited land resources. She needs to look south to explore her maritime zones for both survival and progress. Considering this fact, different development plans and programs have been undertaken to augment relevant maritime industries. At the same time a purposeful Navy is necessary to maintain sovereignty at sea. The Coast Guard and other maritime agencies are also thriving to increase maritime awareness, search and rescue, safety and security in and around coast as well as in the vast internal waters within the country.

The aim of this paper is to highlight ongoing maritime developments of Bangladesh.

Brief Maritime History of Bangladesh

Bengal is a topographical and dialectal region in South Asia. It lies in the north-eastern region at the apex of the Bay of Bengal. It comprises the nation of Bangladesh and most of the Indian state of West Bengal. The majority of the Bengal region lies in the Ganges Delta. In the southern part of the delta lies the world largest mangrove forest, the Sundarbans. The world's longest beach, Cox's Bazar, also lies in the southeast coast of Bangladesh.

The maritime history of this region may be traced back thousands of years. The history of Chittagong port dates back to the 4th century BC, and was mentioned in the works of Ptolemy, Fa-hien, Hieu-en tsng and Ibn Battuta. This was an important port used by the traders from the Middle East, China, Turkey and Europe to trade with this part of the world.

From time immemorial, sailors of this region sailed the high seas of the globe to promote trade, business and dialogue among civilisations. This made Bangladesh a common destination for foreign merchants and hence it became a prominent centre of maritime activities, knowledge and skill.

Wooden boats and ships of various sizes were built around Chittagong. After meeting local demand, they were exported for overseas use. These ships were widely commended for their architecture, speed,

durability and purposefulness. These ships were essential for overseas trade and commerce across the seas and to harness the maritime resources therein.

But with the introduction of new technologies, especially iron and its acceptance worldwide, the shipbuilding industries of Bengal gradually diminished. In the early 19th century, the British took control of Chittagong port and it became a natural outlet for the north-eastern regions of the then British/India regime. There was no significant attempt to promote a shipbuilding industry using the new technologies.

The Dockyard and Engineering Works Limited in Narayanganj was established in 1922 to build ships with new technologies; and in 1957, Khulna Shipyard Limited was established, with both yards contributing much to maritime industry in this part of the world. A few privately-owned shipyards also opened and successfully built iron ships for local markets.

Mongla port located 48km south of Khulna city, was established on 11 December 1954. It is surrounded, as well as protected, by the Sundarban mangrove forest, and is situated at the confluence of the Pashur River and the Mongla River. It lies about 100km north of the Bay of Bengal and is connected to the major inland river ports and to the rail terminal at Khulna.

In the middle of the last century, many maritime institutes and organisations opened and many still operate today. After Bangladesh independence in 1971, the Bangladesh Navy was immediately formed to protect maritime zones and to provide security to maritime industries. The Bangladesh Coast Guard was formed in 1995 for policing duties at sea and along the coast. Bangladesh maritime industry increased substantially and a few private shipyards started building merchant vessels at international standards for foreign nations. On the other hand, the government-owned Khulna shipyard built the first-ever warships in the country with more warships under construction.

Current Maritime Activities

Bangladesh is rolling remarkably well in the field of maritime industry. Her offshore installation is rigged, shipbuilding industries are growing, fishing fleets are increasing, new government maritime university and private owned maritime institutes and academies are established. Her third sea port was inaugurated in the middle of the coast in Patuakhali district. Bangladesh also has plans for a deep sea port and more offshore installations. Very recently Bangladesh successfully settled maritime disputes with her neighbours and now has jurisdiction over potential sea resources.

Bangladesh is highly dependent on the sea. About 90 per cent of her exports and imports are moved by sea. Millions of her coastal population rely on seaborne activities. Her maritime zones are also very fertile with living and non-living resources. All these facts have begun creating awareness amongst government and the public. Thus, it is expected that maritime activities in near future will increase due to improved maritime awareness.

Bangladesh is also very concern about safety and security of her maritime industry and zones. To have full sovereignty over her sea areas she has already strengthened the Navy and has further plans for expansion. The Coast Guard and other maritime agencies are also flourishing due to the increase in maritime awareness, and safety and security requirements.

Enhancing Maritime Industry

Bangladesh is significantly enhancing her maritime industry, some of which are outlined below.

The Bangabandhu Sheikh Mujibur Rahman Maritime University (BSMRMU) was established by an Act of Parliament on 27 October 2013. The establishment of the first-ever maritime university in Bangladesh is a milestone development in the maritime sector that was essential to train specialised maritime manpower. The vision, mission and goals of BSMRMU clearly spell out the future intent of the nation concerning its maritime sectors.

Bangladesh had experienced problems with both its neighbours over fishery rights and energy exploitation and exploration due to un-demarcated maritime boundaries. During 2008-09, there were several untoward incidents between the navies of Bangladesh and Myanmar in the disputed area. But the issued eased when the neighbours agreed to take their dispute to the International Tribunal for the Law of the Sea. On 14 March 2012, a judgement was delivered that was accepted by both countries. Similarly, the maritime boundary dispute between Bangladesh and India also resolved by the Permanent Court of Arbitration and accepted by both parties. Peaceful settlement of Bangladesh/Myanmar and Bangladesh/India maritime boundaries is a major achievement for Bangladesh. Bangladesh can now go ahead with the plans to explore and exploit living and non-living resources in areas under her jurisdiction.

The country's third sea port named Payra Bandar, on the southern part of the country at the Rabnabad Channel of Patuakhali District, was inaugurated on 19 November 2013, with the expectation of opening a new dimension in import/export and goods transportation activities. Various maritime establishments, organisations, industries and institutes will also develop in the region around the Payra sea port. As a result, maritime activities will increase in this part of the country.

Under steady economic growth, Chittagong port is unable to handle the corresponding seaborne traffic. Mongla port is situated about 69nm from the Pussur river mouth, and its depth allows ships with a maximum draft of between 7.0m and 8.5m depending on the tide and weather conditions, and a length up to 225m to use its jetties, but it cannot handle larger container vessels. China's Yunnan province, India's land-locked seven north-eastern states, Nepal and Bhutan international trades are greatly hindered due to their distance from the sea. Bangladesh can benefit economically by developing her maritime and other infrastructure to establish seaborne trades with these areas. So, the country needs a deep sea port in order to support the country's growing seaborne trade and future needs, to go along with the global shipping trend of moving towards larger tonnage vessels, to utilise her geographical advantages to become a regional access point to the sea, and to facilitate uninterrupted coal supply for the power plants being established in the country.

Historically our seafarers have served as ratings when ships were owned and managed by European colonial powers. Until 1962 when the Bangladesh Marine Academy was opened, the public knew nothing about a career as an officer in the merchant marine. Today, hundreds of mariners have graduated from the Academy and are employed around the world. But Bangladesh could do better by establishing more of these academies/institutes to capture a good share of this international market. Maritime education and training is not confined by sea-going training and skill alone. There are many

maritime related skills that can be acquired without going to sea. Considering these facts, Bangladesh encouraged private entrepreneurs to invest in this educational sector. The Department of Shipping has approved several private maritime training institutes to conduct courses and they are producing good quality seafarers.

Shipbuilding is a shore-based industry and is under the control of the Ministry of Industries; but it is closely linked with other maritime industries. Bengal was famous for its shipbuilding. Several shipbuilding yards were developed in and around Chittagong and they built the Turkish fleet in the 17th century. Most ships of the huge Mughal Empire fleet were also built in Chittagong. Many other ships were also built for foreign nations. However these wooden shipbuilding industries gradually shutdown after the introduction of iron technology. In the middle of 20th century, some shipbuilding companies were established, and in parallel, a few privately-owned yards were also established. Today Bangladesh has a number of comparatively modern private shipyards that export commercial ships, while the government-owned Khulna Shipyard builds warships.

Oil, gas, mineral and other living and non-living resources of the sea are called offshore resources, and activities associated with their use include fishing related matters, hydrographic/oceanographic research and survey, offshore oil/gas/minerals exploitation and exploration facilities and outer anchorage services etc. Considering the potential of the country's maritime zones, relevant ministries have begun planning further offshore activities.

While transit and transshipment of goods through Bangladesh for land-locked countries such as Nepal and Bhutan and few Indian states and China have been discussed at length, progress is not encouraging. In order to take advantage of these possibilities, development of port facilities, a deep sea port and connectivity with places beyond national borders are under active consideration.

Bangladesh does not have any iron ore, so the industrial requirement for steel is largely met by a number of re-rolling mills using scrap material from imported old vessels. The ship-breaking industry is vital for Bangladesh and it provides the essential link to national industrial and economic activities. The industry employs thousands of people and keeps many other industries operational.

Enhancement of Maritime Safety and Security

With the development of various maritime industries, ensuring their safety and security has become important issue. Bangladesh now holds large sea areas with possible resources that need continuous surveillance and protection. With further development of her maritime industries and subsequent activities, then the issue of safety and security at sea will be crucial. The government is very conscious of these maritime developments and ensuring their safety and security. Strengthening the Bangladesh Navy, Bangladesh Coast Guard and other maritime organisations/agencies as well as creating awareness is clear manifestation of the government's thinking.

Traditionally the roles of the Navy are to protect territorial integrity and political independence and to safeguard the maritime interests of the nation. In doing so, the Navy has conducted a full range of operations in the country's maritime areas since independence. The Navy maintains round-the-

clock vigilance at sea for this purpose. It also conducts special operations against armed robbery, illegal poaching, smuggling, gun-running and terrorism etc. But in a contemporary maritime scenario, asymmetric threats at sea and from the sea are generating substantial threats to the homeland and sea lines of communication. Therefore, maritime security has become of primary concern for the littoral states in the Bay of Bengal. These types of threats may hinder the expected development of Bangladesh maritime industries. Thus the development plan for the Navy has been formulated under the auspices of the *Forces Goal 2030*, where a three dimensional Navy is envisioned, including the expansion of naval commands in phases, up-gradation of ranks, increasing manpower, the establishment of naval bases, replacing old ships and commissioning new ships. A state-of-the-art naval base BNS *Sher-E-Bangla* in the country's southern region has been inaugurated, which will play a significant role in providing security to Payra port alongside protecting sea resources and tackling environmental pollution.

The Bangladesh Navy has been performing the duties of a coastguard in addition to own duties of maritime defence since independence. But with the increasing volume of policing duties at sea, the *Coast Guard Act 1994* was passed in September 1994 to enforce national laws in the waters under national jurisdiction, and to ensure safety of life and property at sea. The Bangladesh Coast Guard came into being on 14 February 1995 and started operational activities with two patrol craft provided by the Navy. Today the Bangladesh Coast Guard is a unique force that carries out a number of civil and military responsibilities touching almost every facet of the maritime environment. The government plans to update the Coast Guard with modern patrol vessels, high speed boats and equipment, as well as inshore surveillance facilities. Today it is able to control piracy and illegal trafficking; protect fisheries, oil, gas, forest resources and combating environmental pollution in Bangladesh waters and coastal areas; ensuring overall security and law and order through security assistance to sea ports; and conducting relief and rescue operation in the coastal areas. And with further augmentation this force will be able to meet the requirements of the nation.

Creating maritime awareness amongst the public, particularly amongst the coastal population, is very important to ensure safety and security in the maritime domain. Law enforcement agencies may be effectively augmented with the help of coastal people performing policing duties, search and rescue, disaster management and responses to any other coastal infringements. The government is very concerned over the development of its maritime industry and at the same time securing its safety and security. The potential of maritime industry is unknown to the public; but the various initiatives and ongoing developments have created a general awareness amongst professionals, experts and private entrepreneurs as well as the public to a more limited extent.

Regional Cooperation

Developing Bangladesh maritime industry may be looked upon in a positive manner by regional littoral states and may encourage mutually beneficial cooperation. Maritime education facilities might be shared by Indian Ocean region littoral states. Required infrastructure development to allow transit and transshipment through Bangladesh may be coordinated and planned regionally for anticipated development of this region. The Indian Ocean Naval Symposium (IONS) might act as a coordinator to encourage relevant states to participate in the transit and trans-shipment idea.

The littoral states view IONS as an important milestone for the maritime security cooperation within the region. Since its inception in 2008, IONS has generated significant interest and contributed towards providing a platform for all littoral navies to periodically and regularly discuss issues that stand upon regional maritime security and cooperation. Bangladesh is developing its maritime security forces in parallel with other littoral states, which are in different stages of capability enhancement and capability building. Thus a coordinated effort might be initiated by IONS to integrate maritime security force development. It is vital that littoral states interrelate and cooperatively engage in all aspects of maritime security so as to ensure credible and lasting peace and stability in the Indian Ocean region.

EXERCISE CARAT BANGLADESH 2014

Bangladesh Navy

The Bangladesh Navy recently concluded a joint naval exercise with the US Navy in the Bay of Bengal called Exercise CARAT Bangladesh 2014. The Cooperation Afloat Readiness and Training, in short CARAT, is the largest naval exercise and training event between US Navy and Bangladesh Navy. CARAT Bangladesh 2014 consisted of six days of shore-based and at-sea training events designed to address shared maritime security priorities, develop relationships and enhance cooperation among participating forces. In just a few years, CARAT Bangladesh has become the premier engagement between the Bangladesh and US navies. In its 20th year, CARAT is a bilateral exercise series between the US Navy and the armed forces of nine partner nations in South and Southeast Asia, including Bangladesh, Brunei, Cambodia, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Timor-Leste. Though a relatively new participant, Bangladesh stands out as the only South Asian nation in the CARAT series and the exercise continues to make steady progress each year.

This year it was the fourth such event while the interactions are increasing each year. The objective of the exercise is to enhance cooperation, build friendship and strengthen professional interoperability between these two navies. For the first time, a P-8A Poseidon maritime patrol aircraft participated in CARAT Bangladesh and enhancing shared maritime domain awareness.

CARAT Bangladesh 2014 encompassed various harbour events like surface warfare training, diving, a realistic salvage operation at sea and training on explosive ordnance disposal, medical activities etc. There was a number of aviation related seminars and practical flight deck training. The sea phase mainly included orchestrated operations between US Navy P-8 and Bangladesh Navy maritime patrol aircraft and Bangladesh Navy ships, specially search and rescue exercise. A practical salvage operation was conducted with USNS Safeguard. These exercises helped both the navies to understand each other at tactical and operational level. Like previous years, CARAT Bangladesh 2014 was also a source of great learning for officers and men.

বাংলাদেশ নৌবাহিনী এবং যুক্তরাষ্ট্র নৌবাহিনীর মধ্যে আয়োজিত যৌথ সমুদ্র মহড়া Exercise Cooperation Afloat Readiness and Training (CARAT)-2014 এর উদ্বোধনী অনুষ্ঠানে প্রধান অতিথি যুক্তরাষ্ট্র নৌবাহিনীর কমান্ডার লজিষ্টিক গ্রুপ ওয়েস্টার্ন প্যাসেফিক এন্ড কমান্ডার টাস্কফোর্স-৭৩ রিয়ার এডমিরাল চার্লস উইলিয়ামস এবং বিশেষ অতিথি কমান্ডার চট্টগ্রাম নৌ অঞ্চল রিয়ার এডমিরাল এম আখতার হাবিব এর সাথে দুই দেশের উর্ধ্বতন কর্মকর্তাবৃন্দ

HUMANITARIAN ASSISTANCE AND DISASTER RELIEF – A ROYAL AUSTRALIAN NAVY PERSPECTIVE

Captain RW Plath, Royal Australian Navy

Ten years ago, around 100nm to the south of the Nicobar and Andaman Islands, an Australian amphibious ship, HMAS *Kanimbla*, assisted the Indonesian province of Banda Aceh to rebuild basic infrastructure following the devastating 2004 Boxing Day tsunami. Although this was not the first, and by no means the last, disaster relief effort in which Australian naval assets were involved, the sheer scale of the international effort to support multiple nations around the Indian Ocean rim was unprecedented and represented a significant turning point in international disaster relief cooperation. This paper is a discussion about contemporary Australian humanitarian assistance and disaster relief (HADR); focusing upon the role of maritime capabilities, particularly the involvement of navies.

Disasters are unpredictable and indiscriminate. The rapid onset of large scale disasters, such as extreme climatic or geological events, presents a particularly challenging problem for governments. These events are often widespread, destroy infrastructure that prevents routine movement of aid to support the humanitarian needs of the population and each situation is unique in almost every way. What is not unique is the central role that military forces play in almost every case.

Regardless of whether or not HADR efforts have been military or civilian led, military forces have played a central role. The obvious reasons for this are their specialist skills and equipment, and the manpower that militaries have at their disposal. However, just as valuable though is the command and control capability that can be delivered. The battlefield is a complex environment, in which success requires the coordination of many different capabilities, across time and space, to deliver effects to achieve a purpose. The competencies and skills to achieve this are just as relevant to HADR situations as they are to combat. Further, while international engagement between civilian government agencies has increased in the past decade, it is still far more common for military forces to interact, train and work together. Navies are particularly well suited to international engagement, and it is something we all do very well.

While ‘calling out the military’ is, and should remain, the last resort for our governments, it will very likely occur to support domestic responses to major calamities within our countries, and is inevitable when a significant international response is necessary. If we accept this inevitability, and history suggests we should, then we must ensure the conditions are set and the mechanisms established that support multilateral cooperation. One of the key mechanisms needed to optimise multilateral cooperation is for the sharing of lessons learned, and of sharing best practices. This sharing will not only encourage more effective capability development, but will also facilitate the more rapid delivery of a cohesive collective HADR effect when we are called to do so. When the operational objective is the relief of suffering, then every day taken for the international forces to organise themselves is a day too long.

Strategic Guidance

Disasters do not always develop rapidly, and there may be second or third order effects from a single smaller scale event. For example, as energy, food and water resources come under increasing pressure from the rising global population, natural disasters can be expected to cause more significant physical, social, economic and political effects. Inundation of low lying areas may have longstanding effects upon agriculture and water facilities which few nations can be expected to handle independently. Taking this into account, the Australian Defence White Paper 2013 identifies Australia's role in HADR as an enduring and, unfortunately, regular commitment, and therefore, being prepared for such operations is consistent with Australia's strategic and humanitarian interests. The White Paper states:

> The combination of the effects of climate change and resource pressures will increase the risk of insecurity and conflict, particularly internal instability in fragile states, many of which have increasingly large populations in areas that will be affected by climate change. These factors, taken together, point to an increasing demand for humanitarian assistance, disaster relief and stabilisation operations over coming decades.

Australia also identified that capacity building activities and operations into the future need to be well integrated with civilian agencies, and the importance of civil-military cooperation will become a common theme in any peacetime action. It is our intent that Defence only takes the lead in operations if there is a need to use force, or to demonstrate a capacity to use force, and where the capabilities and planning required exceed the capacity of other agencies. In all other circumstances the Australian Defence Force can be expected to support agencies such as the Department of Foreign Affairs and Trade internationally, and our police and emergency services domestically.

Maritime assets, particularly naval assets, are especially well suited to supporting the humanitarian mission and assisting the rebuilding of core infrastructure, fundamentally because they are self-sufficient giving them the capability to persist in conditions where ashore support is limited. Maritime HADR can be conducted independent of local infrastructure such as airfields and ports, which may well be inoperable anyway, and does not require the same intimate access to the host nation's sovereign territory that land forces or land based aircraft require.

Although not as rapid as aircraft to deploy, the payload delivery including equipment which is often considered too cumbersome for aircraft, and the ability to shift significant volumes of aid large distances is undeniable. Naval vessels can sustain longer term operations independent of port facilities. In addition to this poise and persistence, embarkation of organic aircraft increases the reach of the unit, enabling aid to be delivered where needed, providing greater utility in a wide range of situations.

The Royal Australian Navy is undergoing a period of transition; we are introducing into service two large amphibious (LHD) ships. HMAS *Canberra* has been commissioned into the fleet, and NUSHIP *Adelaide* is only months behind her. These 27,000 tonne vessels have a 6-spot flight deck, can accommodate 1400 personnel, carry four organic landing craft and have a 1400m2 vehicle deck. While the LHD, along with our new destroyers, represent a modernisation of the RAN over the next decade and have been designed and built to provide military capability, HADR is one of their key roles as well. They

represent a significant increase in Australia's HADR, reconstruction and other non-warlike capabilities. We intend these ships to play a key role in regional engagement and capacity building, as well as responding to other contingencies. It would be safe to say, that today's naval sailor is far more likely to become actively involved in a HADR or a peacekeeping mission over his or her career rather than experience outright conflict.

Operation PHILIPPINES ASSIST 2013

I will now cover the ADF involvement in what we called Operation PHILIPPINES ASSIST, and the use the lessons learned from this operation to discuss information sharing.

On 8 November 2013 Super Typhoon Haiyan struck The Philippines, causing wide spread devastation, large scale loss of life and massive damage to core infrastructure. Six central Philippine islands suffered significant damage, largely related to the storm surge and subsequent flooding. In response, on 15 November, Operation PHILIPPINES ASSIST was established to support the civilian-led whole-of-government contribution to the international humanitarian response requested by The Philippines government. Joint Task Force 630 (JTF 630) was formed from units and personnel representing all three ADF services to provide military support to affected areas.

The ADF initially provided strategic airlift to transport the Australian Medical Assistance Team and government officials in the area of operations as an immediate response. Once in theatre, the air component provided transportation of relief stores and assisted in the relocation of internally displaced persons to places of safety. The Royal Australian Air Force, in this role, was able to relocate more than 3500 internally displaced persons, and deliver over 2300 tonnes of cargo to support recovery efforts.

On 18 November, HMAS *Tobruk* deployed from Townsville with an embarked recovery support force of around 100 army field engineers, LCM-8 medium landing craft, a navy rotary wing element, relief stores and heavy machinery.

On 20 November 2013, while *Tobruk* was still *en route* to The Philippines, an eight-man JTF 630 team and DFAT liaison officer conducted reconnaissance at Ormoc on the western side of Leyte Island, meeting local government officials and members of the Armed Forces of the Philippines. This followed an earlier initial reconnaissance by a small number of Defence personnel. The reconnaissance indicated that due to the impact of the typhoon in the area, Ormoc would benefit from ADF assistance, primarily focused on road clearance and local quick impact clean-up tasks.

Following this assessment, on 26 November, *Tobruk* was able to conduct an amphibious lodgement of the embarked recovery support force, which concluded two days later on 28 November.

After assisting clean-up tasks in Ormoc, the ship sailed to Cebu on the evening of 1 December 2013 and loaded 110 tonnes of relief supplies from the World Food Programme and The Philippine government on 2 December for distribution to remote islands in the Visayas archipelago to the north of Cebu. This task was completed on 6 December; this is an ideal task for an amphibious ship - logistics over the shore.

The distribution of the stores was conducted utilising two Army LARC vehicles and two Army LCM-8 landing craft; and was coordinated in conjunction with World Food Programme liaison officers on board *Tobruk* that were providing aid on the ground.

The operation was conducted across two lines of operation:

a. Line One – Response. A whole-of-government initial response including the provision of strategic airlift and medical and logistics support.
b. Line Two – Recovery. Maritime based recovery involving a support task force in *Tobruk* capable of providing HADR assistance to remote areas of The Philippines

By 13 December 2013, the Ormoc region was well on the way to recovery. Essential services, transportation and logistics services had been restored and the hospitals were functioning independently. It was assessed the people and government of The Philippines were now capable of managing the ongoing relief and remediation effort, and the conditions for withdrawal had been met. PHILIPPINES ASSIST commenced drawdown, and handed back responsibilities to civilian stakeholders.

By 16 December 2013, when the ADF's recovery mission officially ended, *Tobruk*, in conjunction with Australian Army engineers from 3rd Combat Regiment, had assisted in the clean-up and repair of 16 schools in the region, which allowed approximately 15,000 children to return to their education, and to a semblance of normal life. The clean up efforts repaired 186 classrooms and produced over 1200m^3 of debris and recycling which took 317 truckloads to remove from the area.

Lessons Learned

The ability to prepare for HADR operations in the maritime space is generally limited to ensuring readiness to undertake amphibious lodgement operations, or being prepared to provide aerial reconnaissance assets and C4I nodes.

A key element in *Tobruk's* preparation for engagement in PHILIPPINES ASSIST was its participation in the US-led Exercise PACIFIC PARTNERSHIP in 2013. This activity enabled multinational units to engage with communities in the Asia-Pacific region, to provide medical treatment and training, engineering support, and community relations activities. It also provided the opportunity for engagement with key disaster response stakeholders in local government, medical response, emergency units and law enforcement agencies. This allowed for training in a variety of different response options, and provided valuable insight in how and where to most effectively liaise with these agencies in the event of a disaster response requirement.

From *Tobruk's* perspective, PACIFIC PARTNERSHIP allowed for relevant and valuable training in engineering support, establishment of medical clinics, and community engagement ahead of PHILIPPINES ASSIST.

One element that had a significant impact on *Tobruk's* readiness for PHILIPPINES ASSIST was the lack of on-ground reconnaissance prior to initial response operations. The scope of tasks to be undertaken were significantly different depending on the location: In Tacloban, recovery efforts had to contend with

over 4000 dead, massive infrastructure damage from storm surge, loss of communications, no medical facilities or government services. This required an initial response geared towards provision of medicine, water, food and clearance.

In Ormoc, however, the death toll was minimal, and local government operations had not been significantly disrupted. While infrastructure damage was extensive, government agents had commenced clean-up operations within two days, and the ADF, in conjunction with Philippine armed forces were initially tasked in engineering support and school clearance to assist in a rapid return to normality.

A result of the lack of prior reconnaissance for such varied response requirements was the difficulty in adequately preparing for the task at hand, particularly in determining what resources to carry into theatre. A key initial action should be naval liaison officers *in situ*, preferably with access to helicopter support, to enable reconnaissance and engage with the host nation to establish need.

If such reconnaissance is not achievable, table-topping of scenarios to develop task-based capability bricks is an essential activity. Such planning exercises can be constructed around being medical-heavy, life support heavy or recovery heavy, and allow for rapid actioning of the required response.

A key aspect to consider prior to engaging in such HADR engagements is the provision of resilience training for personnel during transit to the area of operations. The loss of personnel to emotional or psychological trauma can have a significant negative impact upon a finite workforce, with limited option for medical evacuation or re-supply. *Tobruk* provided resilience training to personnel in preparation for both PACIFIC PARTNERSHIP and PHILIPPINES ASSIST; the end result being a positive effect on preparing them for unknown, emotionally confrontational environments.

When arriving on task, initial engagement with non-government organisations (NGO) on the ground is critical in determining what support/HADR supply options are available. In many of the affected areas in The Philippines, NGO had personnel working in the region, and proved to be critical points of contact for engaging in local organisations. The provision of military assets to support their reconnaissance efforts allowed for a more rapid assessment of what can be supported by whom.

When *Tobruk* arrived on scene in The Philippines, she offered the use of her MRH90 helicopter to Aus-AID and the World Food Programme to allow for aerial reconnaissance of Ormoc. This also allowed her to establish initial working relationships with local agencies, and determine where the ADF could be best utilised.

Noting that much of HADR tasking relies upon a landing force to achieve effect; the rapid establishment of this force as a self-sufficient entity will free up maritime assets for wider reconnaissance support, and distribution of HADR stores to areas which local government may not have the capability to access. In PHILIPPINES ASSIST, the planning focus for *Tobruk* was the provision of water and food supplies and the availability of force protection to the recovery support force. By establishing these as early requirements, the ship was free to provide support to other areas as required. In this case *Tobruk* was able to provide wide area distribution of HADR life support stores for several NGO. This resulted in the ability to distribute stores to small island groups that remained untouched by assistance more than 16 days following the typhoon.

The identification of measures of effectiveness to provide guidance on when to transition to local area control/NGO management is a developing issue. The tenure of military support is a sensitive issue in such recovery operations. Clearly we do not want to be drawn into a longer than necessary aid plan and nor do the NGO generally want us there any longer than necessary.

In PHILIPPINES ASSIST, we looked at the development of a measure of effectiveness which would allow notification to DFAT and ADF that *Tobruk* had reached a mutually agreed transition point, by identifying key completed tasks. The likelihood of negatively impacting the speed of recovery increases with time; defence forces rapidly become speed humps due to streamed lines of communication which exclude NGO, perceived lack of unbiased approach and perceptions of ulterior national agendas and perception that we undermine the neutrality of NGO. The complexities of Status of Forces Agreements are well understood, but they remain a key condition for the insertion of foreign forces in most situations.

Militaries need to get in, get on with it and get out.

Information Sharing

A collaborative information environment facilitates information sharing which is critical to achieving a common purpose. Social, institutional, cultural, and organisational challenges are rated amongst the key lessons learnt from any civil-military operation. These impediments relate to the willingness of civilian and military personnel and organisations to openly cooperate and share information and capabilities.

The sharing of information is particularly critical because no single responding entity can be the source of all of the required data and information. Making critical information widely available to multiple responding civilian and military elements not only improves economy of effort, it builds trust, cooperation, coordination and collaboration and provides a common knowledge base so that critical information can be pooled, reviewed, verified and shared. ADF doctrine states 'Civil-military collaboration networks need to be designed to dismantle traditional institutional systems and facilitate the sharing of information among civilian and military organisations.'

There is also risk in information sharing, where some information if used incorrectly can endanger communities, personnel safety, military security and compromise the impartiality of NGO. This presents a complexity which can hinder development of a common baseline, and impact upon the level trust between participants and the host nation. The key is the establishment of a framework or organisation in which information sharing is to occur.

In today's age of rapid online information sharing, several effective methods of communication have been established to allow for accurate, timely and useful information about disaster response and aid to be disseminated across military and civilian channels.

In 1996, the information sharing site ReliefWeb was founded, and has since become the world's largest humanitarian information portal, with over 500,000 posted reports to date. The portal is an independent vehicle of information, designed to specifically assist the international humanitarian aid community in effective delivery of emergency assistance. It provides information as events unfold, and its vision and strategy is to make ReliefWeb a 'one stop shop for the global humanitarian community.'

Reliefweb posts daily information gathered from over 5000 sources including the United Nations, governments, NGO, academia and the media. All documents on the site are classified and archived allowing for rapid searching of information, and utilises social media such as Facebook and Twitter to disseminate vital information.

Of more significance to the ADF, however, is the information sharing site APAN (All Partners Access Network). In March 2000, the Asia-Pacific Area Network, a non-military commercial internet portal, was stood up to enable online communication and information sharing. Over the years, APAN's mission has grown to support global HADR operations, partnership building, joint exercises, conferences, and table-top events.

In response to APAN's expanding global customer base, in February 2010, it was renamed the All Partners Access Network. APAN's unique organisational culture based on innovation, resourcefulness and customer service has made it a leader in unclassified information sharing and collaboration.

Being a US government internet portal, access to government and military agencies is assured; however the critical information sharing with non-government agencies is often to the key to effective targeted relief operations.

Information sharing between humanitarian and military stakeholders may include:

- **Security information:** information relevant to the security of civilians and to the security situation in the joint force area of operation, rules of engagement, and procedures for humanitarian personnel approaching military checkpoints/patrols.
- **Humanitarian locations:** the coordinates of humanitarian staff and facilities inside a joint force area of operations.
- **Transport routes:** the land, water and air routes used for humanitarian action.
- **Humanitarian activities:** the humanitarian plans and intentions, including routes and timing of humanitarian convoys and airlifts in order to coordinate planned operations, to avoid accidental strikes on humanitarian operations or to warn of any conflicting activities, airspace control procedures, and humanitarian vehicle and facilities marking.
- **Mine-action activities:** information relevant to a coordinated response to explosive ordnance education, location, marking, disposal, risk management, advocacy and assistance.
- **Population movements:** information on major movements of civilians to assess cause, routes, emerging needs and coping mechanisms.
- **Relief activities of the military:** information on relief efforts undertaken by the military to ensure cooperation and coordination.
- **Post-strike information:** information on military strike locations and explosive munitions to assist the prioritisation and planning of humanitarian relief and mine-action/unexploded ordnance activities.

Australian maritime forces share maritime security lessons learnt with the international community via established councils, centres of excellence and operational headquarters either through member

involvement, such as the Five Power Defence Arrangements or through military embed of selected staff such as we have with the Information Fusion Centre in Singapore.

In the Indian Ocean region the Australian government supports the development of effective regional security architecture to help meet challenges in the Indo-Pacific. Australia expects to continue a leading role in the ASEAN Defence Ministers Meeting-Plus which contains a mandate for cooperation and engagement of key regional countries on critical security issues; and Australia remains committed to participating in each of the five expert working groups which includes a HADR component.

Australia is responding to the rise of the Indian Ocean region as an area of global strategic significance, and as an integral part of the Indo-Pacific strategic system. We are committed to ongoing discussion on regional issues of maritime security which includes regional maritime HADR activities and exercises which will undoubtedly be a significant and ongoing issue for the nations of Indian Ocean region.

Conclusion

The ADF conducts operations with a whole-of-government approach to regional disaster relief, which is consistent with contemporary Australian military strategy. Traditionally Australia's focus was consistently applied to the Pacific and Southeast Asian region, in recent years Australia has revisited the importance of our strategic relationships in the Indian Ocean region. This region in particular is well versed in the impact of a regional disaster upon a nation's economy and security.

Ten years ago, the Indian Ocean tsunami was testament to the widespread impact a single event can have upon the Indian Ocean rim. Events such as this require the cooperation and coordination of many supporting countries to aid recovery of the affected states, and upon the host nation's terms. There are now a number of experiences which lessons have been learnt and the challenge remains to capitalise upon each of these activities and improve the effectiveness of the maritime contribution, streamline the unity of international effort, improve response times, and minimise any impact upon host nation sovereignty and security, including key performance indicators which guide transition and withdrawal at the first opportunity.

A number of nations/agencies have already established information sharing networks, often centred upon maritime security cooperation and collaboration. These may prove to be a valuable springboard to launch disaster relief information sharing portal as the Indian Ocean region shapes a strategic intent and formalise arrangement for cooperation.

Information sharing can only effectively occur within an agreed organisation or framework. NATO is perhaps the best known example of such a framework. The member nations of NATO do not always agree on a course of action to a stimulus, but they have structures and mechanisms that allow information to flow - to learn from each other. Such is the maturity of the organisation, that there is even the capacity for different levels of sharing for different members, dependant on the level of organisation trust. So without international organisations or coalitions - established before they are needed - it is difficult to share information effectively.

INFORMATION SHARING IN THE INDIAN OCEAN NAVAL SYMPOSIUM

Lieutenant Zheng Sen Pail Ong, Republic of Singapore Navy

In 2009, then-Chief of the Republic of Singapore Navy (RSN) Rear Admiral Chew Men Leong commented on the necessity of international collaboration in the face of emerging maritime security challenges, a statement worth quoting in its entirety:

> As the challenges of maritime security evolve, security practitioners are prompted to examine more closely prevailing operating paradigms within our respective security architectures... To stay ahead of threats that are essentially transnational in nature, collaboration and cooperative action across borders must remain the focus of any maritime security strategy.[1]

RADM Chew's comments reflected an emerging consensus in the maritime community that traditional maritime security challenges such as piracy and terrorism had assumed a transnational tenor, challenges that could only be resolved in kind: navies would have to operate and collaborate on a similarly transnational level in the conduct of their maritime security roles. It was within such a context that the inaugural Indian Ocean Naval Symposium (IONS) was convened in 2008, with the aim of 'attain[ing] mutually beneficial maritime security outcomes within the Indian Ocean…achieved through the cooperation of all members in determining remedies relevant to regional maritime security'.[2] More specifically, four principal objectives were envisaged for the IONS construct, all of which pertained to information sharing in some form or another. These objectives included 'a shared understanding of the maritime issues….and the formulation of strategies designed to enhance regional maritime security,' the strengthening of 'the capability of all littoral nation-states of the Indian Ocean to address…challenges to maritime security,' the establishment of 'multinational maritime cooperative mechanisms designed to mitigate maritime security concerns among members' and the development of 'interoperability in terms of doctrines and procedures…[for] effective humanitarian assistance and disaster relief (HADR)'.[3] Similar in conception to the Western Pacific Naval Symposium (WPNS) construct, IONS thus essentially serves as a platform for open and inclusive discussions on maritime security issues in the Indian Ocean region, with the ultimate goal of establishing more concrete collaborative arrangements.[4]

The Information Fusion Centre (IFC) in Singapore was established in the same year as when RADM Chew's commentary was published, one component of a Singapore endeavour that brought together various domestic agencies and international navies under one roof so as to expedite collaboration and information sharing. This underlined the RSN belief that information sharing offered the best value proposition in dealing with transnational maritime security threats through cooperative means. The IFC emphasis on information sharing as its *raison d'être* and its concomitant track record of success thus establish a useful precedent for IONS: information sharing can and must be prioritised within IONS so as to achieve the aims of naval cooperation as envisaged in the IONS vision and objectives. At this point, it is important that information sharing be recognised as both the goal and the means to the goal as encapsulated in the IONS vision and objectives. To this end, the first part of this paper will contextualise

the changing nature of maritime security threats in the Indian Ocean region. Next, the exact means by which information sharing achieves IONS goals will be addressed. Specifically, this paper envisions information sharing amongst navies and agencies as a means of securing comprehensive maritime domain awareness, allowing for faster responses to developing threats. Finally, the challenges to information sharing will be addressed, with the way forward for IONS and information sharing charted in the conclusion.

A New Security Agenda

There appears to be no generally accepted understanding of the term 'maritime security' that can be utilised as a framework for regional cooperation.[5] However, the post-Cold War literature has theorised the emergence of 'new security challenges', a broad term that has implications for both the meaning of 'security' and correspondingly the nature of security policy on the national, regional and global levels.[6] This has involved debates between traditionalists who seek to restrict discussions on security to a strictly political-military dimension, as opposed to the revisionists who aim to broaden the concept by incorporating the economic, social and environmental dimensions.[7] This paper situates itself in the latter orientation, acknowledging that the latter issues have been increasingly securitised in the context of the Indian Ocean region. The end of the Cold War and the onset of an increasingly networked world - I am reluctant to use the catchall phrase, globalisation - have highlighted to states the necessity of an altered security outlook in relation to the nature and type of perceived threats. While security was previously to the largest extent framed in terms of interstate conflict, exacerbated by the bipolarity of the Cold War, there has been an increasing awareness that the challenges being faced today are simultaneously extra-state and transnational in nature. Simply put, threats are no longer structured within a national frame of reference, but also 'within a non-state, regional and even global context'.[8] The Indian Ocean region is hardly exempt from this reframing of the security debate: it is now subject to this new security agenda that all regional states must confront.

Two overall trends have contributed to the emergence of this new security agenda. First, the development of globalised networks has empowered non-state actors, giving credence to their emergence as transnational threats. These networks offer information sharing, resource sharing and expertise sharing to proxies on the ground, resulting in the generation of an enhanced threat to the commercially vital white shipping of the Indian Ocean region. Next, an increasingly networked world has contributed to increased demands for action. Threats to commercial interests in the Indian Ocean region have repercussions that extend far beyond the region itself: consequently, solutions to these new threats require international mechanisms for cooperation and coordination. With these two trends in mind, security is here to be understood as 'a contested, multi-scalar and multidimensional concept, whose component parts are independent'.[9] It goes beyond traditional state-level concerns vis-à-vis politics and the military, encompassing the newly securitised notion of non-traditional security. This latter aspect heavily emphasises the economic dimension. Having established the broad outlines of this concept, the next step is to clearly delineate what the new security agenda entails on a practical level.

Maritime security concerns in the Indian Ocean encompass the traditional - piracy and armed robbery at sea - as well as the non-traditional.[10] The latter mainly involves illicit trafficking by sea: narcotics, small

arms and human trafficking. Such incidences of piracy and sea robbery represent the new globalised security paradigm by operating across maritime borders and on the high seas, and force a response that cannot be limited to singular national responsibilities - seeing as their operations by definition infringe on the sovereignty of multiple littoral nations - requiring transnational mechanisms of collaboration.

This paper will not go into much detail about the mechanisms of illicit trafficking; suffice it to say that such trafficking will persist in the Indian Ocean for the medium to long term for several reasons which will be broadly outlined here. Within the Indian Ocean region, there are multiple high-volume supply sources for each commodity, with correspondingly high-volume demand points within the same region. Additionally, many of these export nodes are situated in countries that suffer from chronic insecurity, which lead on to the most relevant factor for the purposes of this paper: that the vastness of the Indian Ocean region facilitates such activities, being 'largely insecure, including lengthy tracts of unpatrolled coastline'.[11] Of course, there are numerous other non-traditional security issues such as unreported illegal fishing, itself a major concern in the region. However, that is beyond the scope of this paper. The point of bringing up these two aspects of the Indian Ocean security agenda is to illustrate the fact that this agenda is now transnational in nature and in consequence: as such, what is required must be a similarly transnational response.

Information Sharing and IONS

The general principles and aims of IONS were sketched out in the introduction: predicated on the premise of collaboration and cooperation, IONS seeks to deal with maritime security issues by capability strengthening, consolidating multiple interests into a singular collective interest, and to develop interoperability in terms of doctrines and procedures. The nature of these maritime security issues in the Indian Ocean region was then outlined in the previous section, identified as encompassing traditional and non-traditional threats while being transnational in nature, thus requiring a transnational response. Any approach that aims to resolve Indian Ocean maritime security issues in a collaborative fashion is thus congruent with the aims and vision of IONS. This is consistent with the US Navy's concept of the 'flat-earth strategy', whereby 'no one nation has the resources to provide safety and security throughout the entire maritime domain….partnerships of common interest [will be formed] to counter emerging threats'.[12] However, cooperation between navies can be problematic: for instance, security issues that pertain to 'hard' responses with military connotations may generate some fear or distrust amongst the smaller states. What both achieves IONS goals while sidestepping this problem lies in the practice of information sharing, which offers solutions through both operational and diplomatic means.

Information sharing offers an operational solution to the IONS conceptualisation of the maritime security agenda, simply by enhancing maritime domain awareness amongst member navies. Defined by the US as 'the effective understanding of anything associated with the maritime domain,' maritime domain awareness allows for a shared maritime picture to be painted amongst IONS member navies.[13] The operational implications are straightforward: possession of a common maritime picture allows for coordinated and faster responses to exigencies, and the imposition of less onerous technical requirements for information sharing allow for capacity building in order to level up all member navies. The former implication will be addressed first. Practically by definition, information sharing is an

endeavour that requires cooperation between maritime forces, whereby 'leveraging on multilateral cooperation that is inclusive remains the turnkey for success'.[14] It is also far more than an empty gesture, going beyond its superficial characterisation of share-hubbing. The crux of information sharing lies in the amalgamation of information for sense-making, which in conjunction with existing maritime tools such as the Automatic Identification System (AIS) and the Long Range Identification and Tracking System (LRIT), aid in the early identification of vessels of interest for possible maritime interdiction.

In operational terms, what makes information sharing most valuable in terms of securing cooperation amongst partner navies is that it is an incremental step in a building-block approach: it is an easily implementable step that targets selected information gaps, a pathway that places minimal resource demands on partners. While having an impact on an operational level, it also thus ensures actual mass participation in the scheme, rather than being dominated by the bigger navies. The IFC in Singapore offers an illustrative example as to the effectiveness of such an information sharing scheme. As an information sharing centre, the IFC aims to deliver actionable information…to regional partners for further collaboration or to cue timely operational responses'.[15] Of far greater interest is the presence of International Liaison Officers (ILO) at the IFC, who operate as an integrated group with RSN personnel on a daily basis. The ILO connect the IFC to their respective operation centres, thus 'facilitating the seamless sharing of information between their parent agencies…and the IFC,' information that includes analyses from the IFC.[16] The successes of the IFC have been manifold. Tangibly speaking, one example would be the IFC information dissemination role in the successful 2012 recovery of the hijacked chemical tanker MT *Zafirah*. Less directly but no less pertinently, the IFC as of October 2014 has hosted 76 representatives from 21 countries, highlighting the willingness of partner countries to engage in information sharing. The strong interest in attaching ILO to the IFC underscores the operational effectiveness of information sharing. Information sharing must thus be regarded as a tool that overwhelmingly supports cooperation as envisaged in the IONS vision and objectives.

In terms of diplomacy, as hinted above, information sharing is an affordable confidence building exercise for participating navies, allowing for the development of mutual trust between navies as they interact operationally in a sustained and low-cost fashion. Additionally, information sharing allows for capacity building: it compels partner nations to level up their capabilities in order to effectively contribute to maritime security. Importantly, information sharing is designed to mitigate security concerns amongst members, as its technical requirements are far less onerous than cooperation on combat-related issues, for example. The Maritime Information Sharing Exercise (MARISX) is an excellent example of the potential of information sharing. MARISX 2013, for instance, involved more than 80 participants from 30 countries, including the participation of the commercial shipping community. This was a significant increase from MARISX 2011, which involved more than 60 participants from 26 countries. The increment was in no small part due to the IFC: with the ILO establishing rapport with the IFC and each other through information sharing, partner navies consequently became increasingly comfortable with collaborative exercises. That participation in information sharing came at little cost to partner nations was equally an important reason. The steady growth of participation in MARISX thus reflects how information sharing can be a useful tool in developing mutual trust between partner navies through sustained operational interaction. Information sharing also leads to capacity building and interoperability at low cost. For instance, the US military has developed its Combined Enterprise

Regional Information Exchange (CENTRIX) system as one that can be used by partner militaries: the US Navy and its partner navies have routinely relied on CENTRIX while jointly operating at sea. Additionally, the IFC has developed its Internet-based Regional Maritime Information Exchange (ReMIX) system, one of the information sharing portals under its management, to promote information sharing amongst member countries. This has ensured a minimum capacity which allows member nations to contribute, simultaneously ensuring interoperability due to the similar procedures prescribed by each system. Applicable at low cost, information sharing also achieves IONS' aims and objectives by creating interoperability and levelling contributive capacity.

The Challenges to Information Sharing

Despite the positives that information sharing has to offer, it is no panacea: information sharing has to confront multiple challenges before being able to achieve IONS visions and objectives. The lack of political backing and the problem of policy coordination are some of the issues. There is also the issue of policy coordination. Formulating maritime security policy for a single country is challenging enough; conceiving such a policy in line with the manifold interests and demands of a large group of nations is many times more problematic. One nation or a group of nations must have the initiative to take the lead in kick-starting any information sharing project. Issues of inertia aside, this may be resented by other nations, who may regard themselves as marginalised from the decision-making process, or who may find that the interests of the dominant few are distinct from their own interests and objectives. Yet, the IONS construct offers an insight as to how this challenge may be overcome.

Information sharing under the IONS framework must be consistent with its stated principles of equality, consensus and a focus on multilateral solutions. Consequently, predicated on such consultative and cooperative principles, information sharing can persist without compromising individual interests. This might lead on to the problem of stagnation, whereby the range of differing national interests and objectives at hand may stymie forward progress on making any information sharing scheme a reality. However, littoral nations of the Indian Ocean region all share a common interest in ensuring the safety of commercial shipping and it is the assumption of this paper that commercial pressures will eventually force partner nations to come to a consensus. Conflicting issues may thus stonewall information sharing, but consensus and a minimal threshold for commercial pressures offers the potential for the resolution of this challenge.

IONS 'lacks…political top cover': this lack of political backing has the potential to compromise IONS goals.[17] IONS is a voluntary initiative that seeks to increase maritime cooperation amongst the littoral nations of the Indian Ocean region, and it conspicuously lacks an affiliated political forum. The danger is that IONS might be recognised as a strictly maritime organisation. Consequently, this means a lack of the requisite political will, without which the patience and determination required for the establishment and maturity of information-sharing processes might be lacking.

Inherent in information sharing is a paradox: while partners are expected to freely share actionable information for operational purposes, they are circumscribed by the limitations of national information security. In the process of information sharing, partners may demand certain types of information that

may infringe on information sensitivity. Not all information can be disseminated freely as they may reveal sensitive sources and surveillance capacities that 'some parties may need to safeguard or selectively make privy as a matter of organisational/national interest'.[18] While ostensibly working on the basis of common interest, the national interest may ultimately prevail: Geoffrey Till writes that countries in the region continue to be saddled with 'a fierce sense of national sovereignty, enormous variations in culture and civilization, and a struggle for power and influence'.[19] The mistrust associated with information sharing extends to the commercial domain: commercial shippers may be reluctant to be part of a system where their every move is tracked and every detail of their cargo is logged. This is especially pertinent given that commercial sensitivity and the spectre of intense industry competition surrounds 'the availability of proprietary information regarding importers and exporters, the nature of cargo and the location of particular vessels'.[20] Additionally, these same shippers may have little regard for the technical demands of information sharing, perceiving them as superfluous additions that merely add to the transactional costs of shipping operations. Such cost-benefit analyses have a very real impact on the level of industry support. The swathe of security measures introduced in recent years has thus triggered negative reactions from the shipping community, as demonstrated by the furore raised as a result of the US introduction of the Container Shipping Initiative.

In surmounting these hurdles, an incremental whole-of-government approach must be applied. Governments must establish formal agreements on information sharing, so as to clearly delineate the boundaries within which any such activity can occur. By collectively defining information sharing protocols, it allows for trust to be built up while operating under initially limited circumstances, maintaining the tantalising prospect of a more expansive evolution of such guidelines downstream. The desired end state is a Community of Practice (CoP), whereby member nations jointly agree on an organisational philosophy revolving around information sharing, with the flexibility to adapt it to changing maritime circumstances. Partner nations must also come to accept that the sanctity of some sources will remain inviolable, due to reasons of operational security, and learn to work with what they have. On the commercial side, engagement is paramount: shippers must either be offered an advisory role in the formulation of any guidelines on information sharing, or member navies must constantly assuage them to ensure that their worries and concerns are being dealt with. The IFC offers a good precedent: it contains shipping engagement teams staffed by both ILO and RSN personnel which carry out regular visits to shippers, while also hosting quarterly forums with the shipping community. The idea is to constantly engage the shippers, ensuring them that their concerns are being heard and they do have a viable voice in the decision making process. Information sharing faces the paradoxical challenge of information sensitivity in both the military and commercial sectors, but it is one that can be overcome by the implementation of confidence building measures in both sectors, between both sectors.

Conclusion: Information Sharing and the Road Ahead

In their 2003 treatise, Barry Buzan and Ole Waever elucidated their theory of the regional security complex, arguing that it represented 'a group of states whose primary security concerns are linked together sufficiently closely that their national securities cannot realistically be considered from one another'.[21] From a narrowly defined statist perspective, the Indian Ocean region is neither a single strategic entity nor a clearly delineated and coherent geopolitical system. However, it remains beyond

doubt that the interested parties of the Indian Ocean region, as manifested in the membership lists of IONS, constitute a regional security complex whereby these seemingly disparate states are united by common security problems. IONS thus has an important role to play as a focal point for cooperation and collaboration in dealing with maritime security issues, and multiple environmental factors exist that facilitate this role. First, IONS is well in line with the global trending towards cooperation as opposed to unilateral security initiatives: then-US Chief of Naval Operations Admiral Michael Mullen previously floated the idea of the '1000-Ship Navy', now reframed as the Global Maritime Partnership Initiative, signalling 'a dramatic move by the United States to make international maritime co-operation an important part of its new maritime strategy'. Next, IONS has taken all the right steps in terms of direction. As its vision and objectives demonstrate, it is committed to collaborative and cooperative mechanisms to realise mutually beneficial maritime security outcomes.[22] What remains is to actualise the operation of such mechanisms, the most appropriate of which is information sharing.

Information sharing generates diplomatic and operational solutions to completing the aims of maritime forces' cooperation as envisaged in the IONS vision and objectives. Operationally, information sharing aims for the fulfilment of maritime domain awareness: the diversity of sources and group sense-making should result in a recognised maritime picture and a constant flow of actionable information, allowing for rapid response on the part of ground commanders. As an operation that requires far less resources than the deployment of military assets, it is a far more attractive proposition for achieving mass participation. Diplomatically, it is a cheap means of confidence building amongst militaries, both in terms of capabilities and in terms of trust. In order for all member countries to contribute effectively, member navies will need to ensure that their capabilities match up, and information sharing as a joint operation can be a relatively cheap way of ensuring that. Constantly working together on this relatively less sensitive operation can lead to the formation of mutual bonds. There is no doubt that many obstacles lie in the way of fully operationalising information sharing - information sensitivity and policy coordination are some of the challenges highlighted, none of which are insurmountable, as the above discussion illustrates. Any potential development of IONS will be reliant on the successes and failures of its collaborative mechanisms: as both the means to collaborative goals and the goal itself, it is information sharing that affords it the best opportunity to exist as a sustainable and effective regional organisation.

Endnotes

1 Chew Men Leong, 'Realising Safe and Secure Seas for All,' *Pointer: Journal of the Armed Forces of Singapore*, Vol 35, No 3, 2009, p. 5.

2 Indian Ocean Naval Symposium, Charter of Business, 2014, p. 3.

3 Indian Ocean Naval Symposium, Charter of Business, 2014, p. 3.

4 Emrys Chew, 'A Merlion at the Edge of an Afrasian Sea: Singapore's Strategic Involvement in the Indian Ocean,' in John Garofano and Andrea Dew (eds), *Deep Currents and Rising Tides: The Indian Ocean and International Security*, Georgetown University Press, Washington, DC, 2013, p. 262.

5 Rommel Banlaoi, 'Maritime Security Outlook for Southeast Asia,' in Joshua Ho and Catherine Zara Raymond (eds), *The Best of Times, The Worst of Times: Maritime Security in the Asia-Pacific*, Institute of Defence and Strategic Studies, Singapore, 2005, p. 59.

6 Paul Stares (ed), *The New Security Agenda: A Global Survey*, Japan Center for International Exchange, Tokyo, 1998.

7 Muthiah Alagappa, 'Rethinking Security: A Critical Review and Appraisal of the Debate,' in Muthiah Alagappa (ed), *Asian Security Practice: Material and Ideational Influences*, Stanford University Press, Stanford, 1998, p. 27-64.

8 Dennis Rumley (ed), *The Indian Ocean Region: Security, Stability and Sustainability in the 21st Century*, Australia India Institute, Fremantle, 2012, p. 17.

9 Rumley, *The Indian Ocean Region: Security, Stability and Sustainability in the 21st Century*, p. 20.

10 David Brewster, *India as an Asia Pacific Power*, Routledge, Oxford, 2012, p. 136.

11 David Michel and Russell Sticklor, 'Indian Ocean Rising: Maritime and Security Policy Challenges,' in David Michel and Russell Sticklor (eds), *Indian Ocean Rising: Maritime Security and Policy Challenges*, Stimson Center, Washington, DC, 2012, p. 26.

12 US Navy, US Marine Corps, US Coast Guard, *A Cooperative Strategy for 21st Century Seapower*, Washington, DC, 2007, p. 7.

13 The White House, *The National Strategy for Maritime Security*, Washington, DC, 2005.

14 Irvin Lim, 'Comprehensive Maritime Domain Awareness - An Idea Whose Time Has Come?' *Pointer: Journal of the Armed Forces of Singapore*, Vol 33, No 3, 2007, p. 15.

15 Nicholas Lim, 'The Information Fusion Centre (IFC) - A Case for Information Sharing to Enforce Security in the Maritime Domain,' *Pointer: Journal of the Armed Forces of Singapore Supplement*, 2011, p. 6.

16 Lim, 'The Information Fusion Centre (IFC) - A Case for Information Sharing to Enforce Security in the Maritime Domain, p. 6.

17 Sam Bateman, 'The Indian Ocean Naval Symposium - Will the Navies of the Indian Ocean Region Unite?' *RSIS Commentaries*, No 35, 2008.

18 Lim, 'Comprehensive Maritime Domain Awareness,' p. 20.

19 Geoffrey Till, *Seapower: A Guide for the Twenty-First Century*, Frank Cass, London, 2004, p. 355.

20 Till, *Seapower: A Guide for the Twenty-First Century*, p. 355.

21 Barry Buzan and Ole Waever, *Regions and Powers: The Structure of International Security*, Cambridge University Press, Cambridge, 2003, p. 4.

22 Indian Ocean Naval Symposium, Charter of Business, p. 3.

MARITIME DOMAIN AWARENESS – A SRI LANKAN PERSPECTIVE

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Maritime domain awareness is a national security concept that relies on the aggregate capabilities of multiple government agencies such as defence forces, other law enforcement authorities and local authorities to achieve comprehensive situational awareness of any threat associated with the maritime domain. It is defined as 'all areas and things on, under, relating to, adjacent to, or bordering on a sea, ocean, or other navigable waterway, including all maritime-related activities, infrastructure, people, cargo, and vessels and other conveyances.' In order to address these threats, nations require the capability to:

- Persistently monitor, in the global maritime domain, vessels and craft, cargo, vessel crews and passengers, in all identified maritime situation awareness areas of interest.
- Access and maintain data on vessels, facilities, and infrastructure.
- Collect, fuse, analyse, and disseminate information to decision makers to facilitate effective understanding.
- Access, develop and maintain data on maritime domain awareness-related mission performance.

Following guidance set forth in the *National Concept of Operations for Maritime Domain Awareness*, developed in the *Fleet Concept of Operations for Maritime Domain Awareness* and the *Navy MDA Concept*, which describe the fleet role and how to develop and maintain maritime domain awareness to accomplish the navy's missions across the full range of military operations. Related publications provide a foundation for developing inter-agency and agency-specific policies, processes, procedures and organisational relationships to align activities that contribute to achieving maritime domain awareness throughout the global maritime community of interest.

Background

The US Navy has recognised for some time that its operational focus was broadening from primarily blue water to include the littorals. Although regional conflict remains a prime concern, it is increasingly faced with non-traditional challenges such as disaster relief and irregular opponents who employ asymmetric methods and capabilities against US interests. In under-governed areas of the global commons, such as the littorals of failed states, the US Navy confronts networked adversaries thriving in the 'gray area' between criminal activity and armed conflict. Worldwide economic trends have accelerated the pace of maritime commerce and reinforced the need to keep the global maritime commons secure. The oceans are growing in importance as both arteries of the global economy and back alleys of the criminal underworld. The role of naval power in securing the maritime domain gains in prominence when viewed in context of economic growth promoting political stability. Commerce craves security. Improving maritime security and safety are the cornerstone of the *National Strategy for Maritime Security* (NSMS) and hinge upon developing systems and processes that help the world community, the United

States, and the US Navy attain a keen understanding of maritime activity. Performing maritime change detection, the identification of anomalies from established trends and patterns, will enable commanders to take appropriate action before security is compromised or crises erupt. This is a primary goal of maritime domain awareness.

The world depends heavily on seaborne trade for its continued existence and allowing all countries to participate in the global marketplace on the high seas. Undoubtedly the economic and political affairs of South Asia have been dominated by the sea. The Indian Ocean covers 20 per cent of the earth and is ranked the third largest water coverage of the world. The Indian Ocean region comprises 38 littoral states, 24 ocean territories and 17 land-locked countries. Two adjoining seas are connected with the Indian Ocean, the Arabian Sea and the Red sea, covering an area of 169,000nm^2 through the Bab el-Mandeb, and the Persian Gulf through the Strait of Hormuz.

The Indian Ocean possesses vast natural resources: mineral, fish, marine products, oil resource and natural gas. It also contains many chokepoints, such as the Strait of Hormuz, the Malacca Strait, and the Lombok and Sunda straits. Any disruption in traffic flows through these points can have disastrous consequences. The disruption of energy flows in particular is a considerable security concern for littoral states, as majority of their energy lifelines are sea based. Since energy is critical in influencing the geopolitical strategies of a nation, any turbulence in its supply has serious security consequences.

Sri Lanka's geographical location has, traditionally, represented a significant point in the Indian Ocean region. Maintaining a maritime domain is an important factor to Sri Lanka as it is an island nation and that lies near to a regional superpower and also lies near the main shipping route connecting the west and the east. Further it is observed that two regional powers - China and India - have made their presence in Sri Lanka in various ways such as ports, aviation and power plants constructions therefore it is of paramount important to be aware of the maritime domain. It has enabled Sri Lanka to serve as a hub port to most of the countries surrounding it.

The powerful phenomenon of globalisation has highlighted the criticality of Indian Ocean sea lanes for trade and energy security. Oil and gas-laden ships travel from the Persian Gulf, transit the Strait of Hormuz and then around Sri Lanka, through the Malacca Strait or Indonesia's archipelagic sea lanes, into the waters of the South China Sea. Reciprocal traffic, carrying finished goods comes from China, Japan, Republic of Korea and Taiwan travels the other way. During the voyage they run the gauntlet of piracy, maritime terrorism and inter-state conflict. This is what worries many nations whose economies are dependent on trade and energy.

Military Challenges for Maritime Domain Awareness

Naval missions encompass the full range of military operations. These missions necessitate operations in both blue water and the littorals, and present unique challenges to our naval forces. The Navy's increased focus on the littorals precipitated an exponential increase in the volume of contacts and activity that must be understood. Concurrently, the capability to process maritime information has not kept pace with the increased volume and the number of organic reconnaissance assets available to gather this information has declined.

Transparency of activity in the littoral regions and the global commons is requisite to understanding those environments and requires access to information historically unavailable to decision-makers at the operational and tactical levels of command. Information sharing relationships with partner agencies and nations are vital to attaining the level of maritime domain awareness that naval commanders require for effective decision-making at each level of command: strategic, operational and tactical.

Security Concerns/Challenges in the Indian Ocean Region

The international security environment is dynamic and uncertain, with recurring disputes, crises, and conflicts in many regions, and endemic conflicts in regions of particular importance for the security of Sri Lanka. Concern over sea lanes and chokepoint security is one that any maritime nation cannot ignore. Interdependence between nations for the smooth movement of global maritime trade cannot be denied, disruption of which will affect all nations and could be critical to some. For this reason it is paramount that the maritime community is prepared to meet any contingency that may arise from these vital sea lanes, chokepoints and narrow seas coming under threat or siege.

Unlike the past, the present day adversaries are dynamic, irregular, networked and unorthodox. Security in this ocean can be affected by terrorist threats, nation/state threats, transnational criminal and piracy threats, pilferage etc. Illegal and unregulated fishing activities in these waters have become a prominent challenge not only to the security of Sri Lanka but also to the other regional countries.

Maritime Terrorism

Maritime terrorism was a regular occurrence in the region and Indian waters in particular since the mid-1980s due to an absence of effective maritime safety mechanisms. South Asia and its surroundings constitute the hub of terrorist activities, and there is greater connectivity among terrorist groups. Cross-border terrorist networks are operating across the Middle East, Central Asia, South Asia, and Southeast Asia. Among the few terrorist organisations which have acquired maritime capabilities, the Liberation Tigers of Tamil Eelam (LTTE) stood as the most effective group. The LTTE played a pioneering role in the development and the wide use of suicide bombing as a terrorist weapon. The military defeat of the LTTE and the dismantling of its military infrastructure have considerably reduced security threats in South Asia. The LTTE became a threat not only to Sri Lanka but also to other countries in the sense that its techniques were widely used and copied by other terrorist organisations. It maintained close connections with other terrorist groups which used its shipping network.

On 26 November 2008, a group of terrorists launched a series of shooting and bomb attacks across Mumbai, India's financial capital, killing 164 people. A group of militants from Lashkar-e-Toiba, travelled by sea from Karachi across the Arabian Sea and reached a fishing village called Machchimaar Nagar in Mumbai. Later, Union Home Minister P Chidambaram stated 'the Mumbai terrorist attacks have brought into sharp focus the vulnerability of our coastline that extends to 7500km and the imperative need to enhance maritime and coastal security'.

Drug Trafficking and Arms Smuggling

Drug trafficking and arms smuggling are an important aspect whilst considering maritime security. Due to huge profits, drug trafficking is used to finance terror networks and arms trafficking. Due to Sri Lanka's proximity to the 'Golden Triangle' and 'Golden Crescent', it has become a major transit point for heroin to Europe and other Western countries on an organised scale. Heroin is routed via Sri Lanka from Pakistan or India in containers and mechanised fishing craft.

Gunrunning by sea is also the safest means for transferring arms and ammunition worldwide. Arms smuggling can be lead to an interstate conflicts or disputes. The link between drug traffickers and arms smugglers is prominent. At the national level drug trafficking and arms smuggling can influence the government. Moreover small arms smuggling can challenge the security of local government with the possibility of an armed takeover.

Maritime piracy

Since 2007 sea piracy has become a significant impediment to global maritime commerce. The estimated annual cost of piracy to global economy is around US$7-12 billion, with the projected cost of piracy by 2014 to be US$13-15 billion. In 2010, 86 per cent of piracy activities worldwide were committed by Somali pirates, but the numbers have decreased. The instability prevailing in inland Somalia has transcended to the high seas including the west coast of India and south to the Mozambique Channel.

Illegal Unreported and Unregulated Fishing

There have been problems regarding the illegal unreported and unregulated (IUU) fishing activities in the excusive economic zone. It is the responsibility of the Navy to safeguard the fisheries wealth of the country. Sharing fishery resources with neighbouring countries, for instance, the intrusion of Indian trawler fishermen into Sri Lankan waters is a huge challenge for the Sri Lanka Navy.

Eradication of terrorism provided a greater leeway for fishing in territorial waters. Sri Lanka should capitalise on this and should dominate its northern waters which are enriched with fishing wealth. The Navy should assist the security of fishing to a greater extent, which will be an opportunity to solve the cross boundary fishing problem that has existed for many years.

Real Time Intelligence Sharing

Even though nations agree to share information and intelligence on various matters, there is an inherent reluctance to share much important and valued real-time intelligence among regional states. On the other hand we see an advanced information/intelligence sharing network among the pirates as well as terrorist networks.

In order to have a better view of the Indian Ocean region, regional cooperation in maritime domain awareness is another key area. This will assist countries to be aware of and share knowledge of activities not only in one's interested area, but of the whole region. Having the knowledge and awareness of the broader maritime picture will be of useful in arriving at critical decisions. Integration of such capabilities will enable the Indian Ocean region to form a strong maritime domain awareness backbone in order to patch with the global maritime domain awareness initiatives.

Focus on Sea Lines of Communications

Ranking as the third-largest ocean in the world, the Indian Ocean is home to some of the world's most important sea lanes. These sea lanes are crucial in sustaining many global as well as regional economic giants and have contributed to the strategic importance of our region. This has attracted the attention of many states as well as non-state actors. If we had no crucial sea lines of communications in our region, many of our issues would not have arisen. The maritime security concerns in the Indian Ocean region make our lifelines vulnerable; we need special attention and focus towards safeguarding them. The region can be starved to death merely by disturbing these sea lines of communications. Transiting more than 80 per cent of world's seaborne trade through Indian Ocean chokepoints is clear evidence of this.

Regional Integration the Key to Success

There are various viewpoints that have been presented on how to achieve maritime domain awareness and effective regional integration can be singled out as the most important pillar in finding solutions.

One country can be more powerful in terms of military, wealth or in size. But unless it is a strong link in the regional integration process, its mere survival is questionable. As a region that is quickly coming to the attention of the rest of the world, we can surely improve regional security cooperation and coordination of regional institutes. Regional integration need to focus on building up a cooperative security dialogue and effective apparatus. In developing such a mechanism we could always consider the involvement of extra regional assistance as our aim should be to establish global reach.

This regional integration should be expanded through strong defence cooperation measures aimed at being proactive in response to events such as natural disasters, search and rescue operations and marine pollution incidents, with close coordination between regional navies and coastguards. The formation of defence cooperation measures necessarily require going beyond traditional models and concentrating on improved collective region cooperation and action.

There is also an important role that various organisations in the region can play in this regard. As many tend to view the region as a collection of sub-regions, there is a need for region-wide institutions too. Various organisations/institutions such as the Indian Ocean Rim Association, the ASEAN Regional Forum, South Asian Association for Regional Cooperation, Council for Security Cooperation in the Asia Pacific), Asia Pacific Economic Community, South Asia Regional Port Security Cooperative, Indian Ocean Naval Symposium and even the Galle Dialogue among many other initiatives can be of immense value in bridging this gap.

Conclusion

The growing emphasis on security in the global maritime commons means that warships will continue to operate extensively in littoral regions and will increasingly need to coordinate their efforts with less capable partners. Strike groups, ships and aircraft, and shore facilities constantly gather data regarding their operating environment. Optimising collection of information that leads to identification of suspicious maritime behaviour requires thorough integration of intelligence with operational forces at the tactical level. For example, maritime security-related data collection is enhanced by embedding intelligence personnel with Navy special and expeditionary warfare teams and incorporating specialised intelligence exploitation teams into maritime interception operations. The inability to exchange information efficiently and effectively at the tactical level is a major impediment to achieving maritime domain awareness. Afloat units must be able to augment their organic sensors with maritime information from resources at the operational and strategic levels. Equally important, they must be able to rapidly transfer information upwards and to each other, as necessary.

Improving maritime domain awareness at the tactical level requires:

- more efficient collection and processing of maritime information at the unit level
- near-real-time access for afloat units to collection, planning, and subject matter expertise at the military headquarters and joint intelligence operations centre
- efficient transfer of information collected afloat, such as maritime interdiction-related data, to military headquarters and other agencies where it can be analysed, catalogued and archived
- near-real-time exchange of select information to related networks
- real-time exchange of current and accumulated information to other tactical users, including less-capable partners.

Organising for Success

This concept makes clear that maritime domain awareness contributes to a broad array of naval missions and appeals to wide variety of stakeholders, inside and external to the Navy. Successful implementation of this concept requires marshalling a complex set of activities, processes, systems and agencies to deliver effective maritime domain awareness to Navy decision-makers. The magnitude of this effort exceeds the capacity or expertise of any single Navy directorate. Employing maritime domain awareness to accelerate Navy's decision-making processes involves dedicated efforts to:

- determine Navy requirements for maritime domain awareness
- establish relationships requisite to accessing and sharing information
- identify and obtain relief from policies that hinder information access
- break down cultural barriers to sharing information

- solve technical challenges associated with information-sharing
- automate systems and processes to collect, manage, disseminate and display information
- modify training, planning and operational decision-making processes to capitalise on greater access to information.

Managing development of a maritime domain awareness capability for the Navy and influencing the direction of external initiatives demand the creation of a cross-functional team capable of capturing Navy strategic and policy perspectives, fleet operational requirements, and acquisition expertise from across the Service. Information, regardless of source, associated with each contact in an integrated display.


INDIAN OCEAN NAVAL SYMPOSIUM

MARITIME DOMAIN AWARENESS CAPABILITY FOR THE BAY OF BENGAL

Sub Lieutenant Nazmus Shakib Sourov, Bangladesh Navy

In this era of rapid economic growth the Indian Ocean is increasingly more important to the global community than other oceans. This is because, apart from being the third largest ocean in the world after the Pacific and the Atlantic oceans and occupying about 20 per cent of the Earth's sea surface, the Indian Ocean is home to about 3.179 billion people, representing 45 per cent of the world's population.[1] Additionally, this swath of the global commons accounts for about 39 per cent of loaded and 57 per cent of unloaded global seaborne trade in 2013 and the figures are increasing rapidly.[2] The Arabian Gulf, the Persian Gulf and some countries in the Indian Ocean account for about 33 per cent of global crude oil production and consumption in 2013.[3] However, the increased strategic importance of the Indian Ocean has also led to the emergence of multifaceted security threats in the area. These threats range from armed robbery along the strategic chokepoints to transnational terrorism among others.[4]

The increasing prominence of the Indian Ocean region to the global economy, coupled with rising security concerns in the area, have brought to the fore the need for constant monitoring of sea areas in this region by coastal states.[5] Therefore, littoral states across the region are developing surveillance capabilities to enable them to optimally employ their maritime power to tackle the plethora of current and future security challenges affecting their areas of maritime interests.[6] An example of such regional cooperation is the setting up of the information sharing centre under Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia by 19 states of the region on 4 September 2006.[7]

Among the many sea areas of the region, the Bay of Bengal stands out prominently. It stretches from Sri Lanka across to the eastern coast of India to Bangladesh and Myanmar.[8] The Bay is also an easy gateway to China's southern land-locked region in the north as well as to Bangladesh and some other important ports in India and Myanmar. However, incidents of illegal arms and drug trafficking that had been greatly reduced by the vigilant action of the navies and coast guards in the area. There were also few cases of petty theft onboard merchant vessels and illegal fishing in the area in recent times which has made it necessary for the countries of the Bay of Bengal sub-region and the Indian Ocean region to develop credible maritime domain awareness capability in order to counter current and future threats in the region.[9]

The term maritime domain awareness is used in this paper to connote 'an effective understanding of all the things associated with the maritime domain that could impact the security, safety, economy, or environment of a littoral state.'[10] In other words, maritime domain awareness is that enhanced capability that allows littoral states identify threats to their maritime domain as early and as distant from their shores as possible. This would be achieved through the integration of intelligence, surveillance, observation and navigation systems into a common operating picture accessible to their maritime security organisations.[11]

The purpose of this paper therefore is to examine maritime domain awareness capability as the complete remedy for curbing future maritime threats in the Bay of Bengal. The paper could therefore be justified in that it would help policymakers to formulate a robust and credible maritime domain awareness deterrence against current and future threats in the region. In order to attain this, the paper will discuss the strategic importance of the Bay after which some threats affecting maritime security in it will also be highlighted. Thereafter, maritime domain awareness goals, objectives and guiding principles will also be presented. An analysis of the current state of maritime domain awareness in the Bay of Bengal sub-region will be discussed before the paper will present some ways to improve maritime domain awareness capabilities. It should be noted however that because of the paucity of available data and information on maritime domain awareness infrastructure in the Bay, the paper does not discuss the current maritime domain awareness infrastructure in Myanmar.

The aim of this paper is to examine existing maritime domain awareness capability of Bay of Bengal littoral states as the panacea for curbing future maritime threats and make recommendations.

The Strategic Importance of the Bay of Bengal

The Bay of Bengal is home to the littoral nations of Sri Lanka, India, Bangladesh, Myanmar and some parts of Malaysia. The Bay covers about 839,000nm^2 of sea area, is about 1300nm long and about 1000nm wide at its maximum points. It has an average depth of 2600m and is rich in living and non-living resources such as fish, shrimps, lobsters and natural gas among others. For example, there are about with about 475 species of finfish including the cartilaginous fishes like sharks, skates and rays in the Bay.[12] Additionally, it is officially known to contain over 100 trillion cubic feet of natural gas reserves.[13] Similarly, the Bay is the sole economic gateway to Sri Lanka, Bangladesh and Myanmar as well as an important route for merchant cargo destined for some parts of India, the southern land-locked parts of China and Nepal.[14]

The Bay is not only the largest bay in the world, but is also the economic gateway that links two great economic blocs. These are the South Asian Association for Regional Cooperation (SAARC) and the Association of South-East Asian Nations (ASEAN). Additionally, there is a naval cooperation arrangement between China, India, Bangladesh and Malaysia within the Bay of Bengal sub-region. The Bay plays a critical role in terms of energy security, economic growth and regional stability to the people and governments of the sub-region, particularly to Bangladesh.[15] The Bay is enjoying an era of peaceful coexistence among all the littoral countries surrounding it because of the peaceful settlement of maritime boundary disputes between Myanmar and Bangladesh on the one hand and between India and Bangladesh on the other. This is a great achievement and a basis that can engender more fruitful cooperation and collaboration to effectively secure and safeguard the Bay against current and future threats.

Maritime Security Threats in the Bay of Bengal

'Maritime security is a broad concept that includes a panoply of notions such as maritime safety, freedom of navigation, sea lines of communication security, protection of sea resources and territorial disputes.'[16] In this regard, some of the security threats affecting the Bay of Bengal maritime region include illegal human trafficking, environmental degradation, illegal fishing, illicit arms/drug smuggling and sea robbery.

Human trafficking

The region suffered from the threat of illegal human trafficking over the years. Because of the large population density in many regional countries, people are being lured and deceived by false promises of good jobs or marriage by traffickers. Others are bought, abducted, kidnapped, coerced, threatened or used as collateral for loans in the form of debt bondage due to the high rates of poverty in some of these countries that are economically categorised as third world countries.[17]

This illicit trade occurs across all national boundaries by sea, land and air. However, there is no accurate reliable data as to the number of persons that are trafficked through the maritime area. Similarly, as a result of numerous patrols by the navies and coastguards in the Bay, the threat has been greatly reduced.[18]

The problem of inadequate data on human trafficking through the sea routes could be remedied by implementing a robust maritime domain awareness capability. This would enable littoral states to reduce their operational costs for conducting anti-human trafficking operations at the same time enhancing their effectiveness to monitor, detect, intercept and prosecute offenders. It is imperative that region countries set up a credible inter-agency maritime domain awareness capability infrastructure. This would enable their various security and governmental agencies responsible for safeguarding their countries from this threat to optimally discharge their responsibilities.

Sea robbery

The problem of sea robbery onboard merchant ships in the region has caused serious concerns to other countries, necessitating the establishment of the ReCAAP information sharing centre by 19 countries of the region and the multinational naval task forces off the coast of Somalia. As a result of the concerted efforts of all stakeholders in the region, the incidences of sea robbery has drastically reduced, but few cases of petty theft still exist.

It is expedient for regional governments to consider expanding the capability of their existing maritime domain awareness infrastructure as well as expand the scope of their regional cooperation. This would go a long way in assuring the international community that the entire Indian Ocean region is free from sea robbery and petty theft from merchant vessels. This would drastically reduce insurance premiums placed on shipped cargoes destined for the area and thus improve the wellbeing and prosperity of the region.

Illicit arms and drugs smuggling

Regional countries are threatened by the scourge of illicit arms from the Pakistan-Afghanistan region which is arguably the largest illegal arms corridor in the world, as well as illicit drugs from Myanmar and Afghanistan.[19] These are normally smuggled through the golden triangle comprising of Myanmar, Laos and Thailand as well as The Philippines to terrorist organisations across the world. Although the Bay is not seriously affected by these illicit activities, the threat still exists. There is a need for littoral states in the Bay to take proactive steps to prevent the spread of these threats within their sub-region by implementing a robust maritime domain awareness capability.

Maritime Domain Awareness Goals

All over the world, maritime domain awareness capabilities are being set up to support core national defence and security priorities. According to the US *National Strategy for Maritime Security*, maritime domain awareness serves to simplify today's complex and ambiguous security environment by meeting the following strategic goals:

- Enhance transparency in the maritime domain to detect, deter and defeat threats as early and distant from the mainland or its interest as possible.
- Enable accurate, dynamic and confident decisions and responses to the full spectrum of maritime threats.
- Sustain the full application of the law to ensure the freedom of navigation and the efficient flow of commerce.[20]

It is against this background that this paper analyses the need for a robust maritime domain awareness capability for the Bay of Bengal sub-region with a view to enable the littoral states in the area achieve these lofty goals. This could be done through multinational collaborative efforts considering the fact that the security and safety of the Bay is crucial to the socio-economic and defence interest of all the littoral nations within the Indian Ocean area in particular, and the world at large.

Maritime Domain Awareness Objectives

The *National Strategy for Maritime Security* also posited that achieving maritime domain awareness depends on the ability to monitor activities in such a way that trends can be identified and anomalies differentiated. Thus, data must be collected, fused and analysed, preferably with the assistance of computer data integration and analysis algorithms. This will greatly assist in handling vast, contrasting data streams, so that operational decision makers can anticipate threats and take the initiative to defeat them. To achieve this task, the following objectives were identified:

- Persistently monitor the maritime environment through integrated management of a diverse set of collection and processing capabilities.
- Access and maintain data on vessels, facilities and infrastructure that impacts on the maritime domain.

- Collect, fuse, analyse and disseminate information to decision makers to facilitate effective understanding.
- Access, develop and maintain data on maritime domain awareness-related mission performance.[21]

Figure 1: Maritime Domain Awareness Objectives

The utility of any maritime domain awareness infrastructure lies in its ability to provide timely actionable information to strategic and operational level commanders. Consequently, the Bay of Bengal littoral states need to implement a robust maritime domain awareness infrastructure that would provide them with a common operational picture of their maritime domain. This is in order to enable them anticipate, detect, deter and defeat maritime threats in their formative state far away from their mainland as possible.

Maritime Domain Awareness Guiding Principles

Three main maritime domain awareness guiding principles recommended in the *National Strategy on Maritime Security* include unity of effort, information sharing and integration as well as the safe and efficient flow of commerce. However, the first step towards achieving these principles is to ensure that all maritime stakeholders at all levels know what they can do to help, how they can do it and why maritime domain awareness is in their best interest. This demands a common purpose and agreed upon procedures.[22]

A robust maritime domain awareness system requires a coordinated effort within and among all littoral states in a given maritime domain, including public and private organisations and international partners. The need for maritime security is a collaborative effort because of mutual interest which makes it necessary for cooperation between littoral states at both industry and government levels.[23] Bay coastal states could therefore come together to form a pilot multinational maritime domain awareness system that could be expanded later to cover the entire Indian Ocean region. This would help to combat the menace of transnational threats in their maritime areas of interest.

Effective and efficient maritime domain awareness depends upon unparalleled information sharing and it must have protocols to protect defence and private sector propriety information that will enable bilateral or multilateral information sharing agreements and international conventions or treaties. In this regard, the primary method of information sharing is the national maritime common operational picture. This data would be available to all users except when limited by security, policy or regulations. The common operating picture would also contain decision-maker toolsets fed by one or more distributed and exchanged object and track database to facilitate collaborative planning. This would also help all echelons in achieving situational awareness.[24] Consequently, it is imperative the proposed model be created by Bay littoral nations to establish an enduring information sharing mechanism which could easily be replicated by coastal states within the region.

It is pertinent for all collaborating member states to note that the safe and efficient flow of commerce is enhanced and harmonised by an effective understanding of the maritime domain. The converse is also true, that maritime domain awareness is enhanced by responsible participation in an accountable system of commerce. This is because, in any given environment, public safety and economic security are mutually reinforcing.[25] There is a need for the envisaged maritime domain awareness system for the Bay sub-region to be focused not only on the defence needs of participating countries but also on ensuring the safe and efficient flow of commerce in the area. This would enhance the socio-economic development and prosperity of all participating littoral states through the emplacement credible surveillance capability that would predict, detect, deter and defeat future maritime threats in the Bay.

Current Maritime Domain Awareness in the Bay of Bengal

The Bay littoral states have, over the years, made several efforts to develop and improve a credible maritime domain awareness capability in their respective territories in order to ensure effective sea governance as well as the safety and security of the maritime areas of interest. For example, all of these countries have established navies and/or coastguards that are capable of maintaining credible presence at sea to detect, deter and defeat current and possible future threats in line with their set national strategic aims. Additionally, these countries have established other maritime security agencies at both the local, district and national levels which are helping to ensure proper sea governance in their respective maritime domains. Additionally, these agencies have either developed or procured a wide range of surface, sub-surface, aerial and even space electronic sensors with which to monitor and police their maritime environments.

Bay littoral countries have also formulated or are currently formulating national policy frameworks within which to harness the potentials of their maritime security agencies and the available surveillance and monitoring systems and technologies at their disposal in order to achieve complete maritime domain awareness of their sea areas. In this regard, the Indian government has formulated a maritime strategy titled *Freedom to Use the Seas: India's Maritime Military Strategy* in 2007. The government of Bangladesh and those of Sri Lanka, Myanmar and other regional players have also formulated similar maritime strategies for their security agencies. However, these countries all lack central maritime coordinating agencies that would coordinate and standardise the operations of their various maritime agencies thus channelling them to the attainment of a single national strategic aim. It is in this regard

that these countries need to increase their efforts in order to build a common basis for transnational cooperation and collaboration in securing their common maritime heritage. There is a need for Indian Ocean littoral states to expeditiously establish national maritime coordinating agencies in their respective domains in order to facilitate a wider regional cooperative and collaborative mechanism for sea governance in the region.

Ways to Improve Maritime Domain Awareness in the Bay of Bengal

A fully functional and deployed maritime domain awareness capability within the Bay would not only cater for today's complex and ambiguous threats that has placed a greater premium on knowledge and shared understanding of the maritime domain, but would also mitigate most future threats. In order to emplace an effective and robust capability at the core of maritime security operations for combating current and future maritime threats in the region, some measures ought to be taken by the maritime stakeholders in the sub-region. These include, among other things, the formulation of a regional maritime domain awareness doctrine, the establishment of a region maritime domain awareness training centre(s), the establishment of a regional daily-information-sharing mechanism among littoral states and the organisation of an annual maritime domain awareness training exercise for relevant maritime stakeholders.

The formulation of a regional maritime security strategy would provide a common strategic aim and direction for the security architecture of the entire Indian Ocean region. This could be modelled after the European Union *Maritime Security Strategy* which forms the basis upon which the entire maritime security of Europe rests.[26] Similarly, this would form the basis for the standardisation of doctrine, technologies, equipment, systems, operating procedures and personnel training among member countries. Additionally, it would give the much needed political will and determination that is critical in initiating the much needed regional collaboration and cooperation.

There is also an urgent need for Indian Ocean states to set up a regional maritime domain awareness coordination and training centre, which would be responsible for the development, coordination and dissemination of common doctrine, practices and operating procedures among member countries. This would ensure that maritime domain awareness operators and systems in the region understand each other and can easily communicate, collaborate and cooperate with one another in time of crisis. The interoperability problems encountered by rescue workers during the global search for the missing Malaysian aircraft MH370/MAS370 could have been avoided if there was a regional coordinating agency to plan and direct the search and rescue effort.[27]

In order for the region to harness its current and future maritime domain awareness capabilities effectively, member states need to establish a regional daily information sharing mechanism between them. In the absence of a regional maritime domain awareness coordinating agency, this daily regional information sharing mechanism could be in the form of daily email exchange among similar maritime agencies of all Indian Ocean states. It could also be in the form of daily summaries of national maritime activities exchanged among the offices of national security advisers of Indian Ocean countries. This would engender the spirit of cooperation and collaboration among member states while awaiting the

development of a robust regional information mechanism that would have real-time regional information capability for the exchange of the common operating picture among Indian Ocean states.

Strategies and doctrines are only as good as the people are able to practice them. Therefore, it is imperative for regional countries to formulate a mechanism for the organisation of an annual maritime domain awareness training exercise. This would enable operators of different countries to interact and collaborate with one another thereby helping to build human and system capacity to communicate, collaborate and cooperate in operational scenarios in order to counter current and future maritime threats in the region. The exercise could be modelled similar to the US African Command annual training exercise in west Africa codenamed Exercise OBANGAME EXPRESS. It is an annual event that began in 2007 involving navies of about 20 countries from Africa, Europe, America and Asia; designed to improve cooperation among participating nations in order to increase maritime safety and security in the Gulf of Guinea which is second to the Indian Ocean region in terms of the number of reported cases of piracy/ sea robbery incidents.[28]

Conclusion

The Bay of Bengal plays a critical role in terms of energy security, economic growth and regional stability to the people and governments of the sub-region. The Bay also enjoys an era of peaceful coexistence among all the littoral countries surrounding it which can form the basis to engender more fruitful cooperation and collaboration to effectively secure and safeguard it against current and future threats. Thus, regional governments are urged to consider expanding the capability of their existing maritime domain awareness infrastructure as well as expand the scope of regional cooperation in the area. This would go a long way in assuring the international community that the entire region is free from piracy and sea robbery. This would drastically reduce insurance premiums placed on shipped cargoes destined for the area and thus improve the wellbeing and prosperity of the region.

The utility of any maritime domain awareness infrastructure lies in its ability to provide timely actionable information to strategic and operational level commanders. This is why Bay littoral states need to implement a robust infrastructure that would provide them with a common operational picture of their maritime domain. This is would enable them anticipate, detect, deter and defeat maritime threats in their formative state far away from their mainland as possible.

Indian Ocean countries lack national maritime coordinating agencies that would coordinate and standardise the operations of their various maritime agencies thus channelling them to the attainment of single national strategic aim. It is in this regard that these countries need to double their efforts in order to build a common basis for transnational cooperation and collaboration in securing their common maritime heritage. It is imperative therefore that regional littoral states expeditiously establish national maritime coordinating agencies in their respective domains in order to facilitate a wider regional cooperative and collaborative mechanism for sea governance.

A fully functional and deployed maritime domain awareness capability within the Bay would not only cater for today's complex and ambiguous threats that have placed a greater premium on knowledge and shared understanding of the maritime domain, but would also mitigate for most future threats in

the area. In order to emplace an effective and robust maritime domain awareness capability at the core of maritime security operations for combating current and future maritime threats in the Indian Ocean, some measures ought to be taken by the maritime stakeholders in the sub-region. These include, among other things, the formulation of doctrine, the establishment of training centres, the establishment of a regional daily-information-sharing mechanism among littoral states and the organisation of an annual training exercise for maritime stakeholders.

Recommendations

It is therefore recommended that the states in the Indian Ocean region should:

- formulate a regional maritime security strategy.
- establish a common maritime domain awareness coordinating and training centre
- establish of a regional daily-information-sharing mechanism
- organise annual maritime domain awareness training exercises.

Endnotes

1 D Michel and R Sticklor (eds), *Indian Ocean Rising: Maritime Security and Policy Challenges*, Stimson Center, Washington DC, 2012, p. 9.

2 United Nations Conference on Trade And Development, *Review of Maritime Transport 2013*, New York and Geveva, 2013, p. 9.

3 United Nations Conference on Trade And Development, *Review of Maritime Transport 2013*, p. 16.

4 Government of India, 'HM Announces Measures to Enhance Security,' Press Release, Press Information Bureau, Delhi, 2008, www.pib.nic.in/newsite/erelease.aspx?relid=45446.

5 Michel and Sticklor, *Indian Ocean Rising: Maritime Security and Policy Challenges*, p. 9.

6 RS Vasan, 'Maritime Security and Challenges in the Indian Ocean Region – Analysis', 13 August 2012, an address delivered during a joint seminar conducted by the Centre for Asian Studies and Stella Maries College at Helen DE Chappotin Centre, www.eurasiareview.com/13082012-maritime-security-and-challenges-in-the-indian-ocean-region-analysis/.

7 ReCAAP, 'About ReCAAP ISC,' www.recaap.org/AboutReCAAPISC.aspx.

8 Michel and Sticklor, *Indian Ocean Rising: Maritime Security and Policy Challenges*, p. 9.

9 Vasan, 'Maritime Security and Challenges in the Indian Ocean Region – Analysis'.

10 Vasan, 'Maritime Security and Challenges in the Indian Ocean Region – Analysis'.

11 Joseph Milligan, 'MDA Overview,' paper delivered at the National Centre for Risk and Economic Analysis of Terrorism Events Conference held on 16-18 November 2010, p. 3, http://create.usc.edu/Milligan%20Revised%20CREATE%20Brief.pdf.

12 MG Hussain and M Enamul Hoq (eds), *Sustainable Management of Fisheries Resources of the Bay of Bengal*, Bangladesh Fisheries Research Institute, Dhaka, March 2010, p. iii.

13 KS Hossain, 'Delimitation of Maritime Boundaries: Protecting our Resources', *The Daily Star*, 17 March 2014, www.thedailystar.net/print_post/delimitation-of-maritime-boundaries-protecting-our-resources-15960

14 Michel and Sticklor, *Indian Ocean Rising: Maritime Security and Policy Challenges*, p. 9.

15 Government of the People's Republic Of Bangladesh, *Perspective Plan of Bangladesh 2010-2021: Making Vision 2021 A Reality*, General Economic Division Planning Commission, Dhaka, April 2012, pp. 2-9, 10-14, 47-53, 58-65 and 66-72.

[16] MD Khurshed Alam, 'Maritime Security of Bangladesh: Traditional Issues Impinging on Maritime Boundary Delineation,' paper presented at the seminar on Maritime Security of Bangladesh, Organised by the Bangladesh Institute of International and Strategic Studies, Dhaka 12 February 2009, p. 1.

[17] Government of the People's Republic of Bangladesh, *Combating Human Trafficking: Bangladesh Country Report*, 2012, Ministry of Home Affairs, Dhaka, 2013, p. 9.

[18] Government of the People's Republic of Bangladesh, *Combating Human Trafficking: Bangladesh Country Report*, 2012, p. 22.

[19] A Biswas, 'Small Arms and Drug Trafficking In the Indian Ocean Region,' Centre for African Studies Working Paper No. 4, University of Mumbai, November 2014, www.mu.ac.in/arts/social_science/african_studies/biswaswp.pdf.

[20] White House, *National Plan to Achieve Maritime Domain Awareness for the National Strategy for Maritime Security*, Washington DC, 2005. p. 2.

[21] White House, *National Plan to Achieve Maritime Domain Awareness for the National Strategy for Maritime Security*, pp.2-3.

[22] White House, *National Plan to Achieve Maritime Domain Awareness for the National Strategy for Maritime Security*, pp.3-4.

[23] White House, *National Plan to Achieve Maritime Domain Awareness for the National Strategy for Maritime Security*, p. 4.

[24] White House, *National Plan to Achieve Maritime Domain Awareness for the National Strategy for Maritime Security*, p. 4.

[25] White House, *National Plan to Achieve Maritime Domain Awareness for the National Strategy for Maritime Security*, p. 4.

[26] Council of the European Union, European Maritime Security, Brussels, 2014, http://register.consilium.europa.eu/doc/srv?l=EN&f=ST%2011205%202014%20INIT.

[27] Karl Malakunas, 'Distrust Adding To Malaysian Jet Confusion: Analysts,' *AFP News*, 14 March 2014, https://sg.yahoo.com/distrust-adding-malaysian-jet-confusion-analysts-181507988.html.

[28] AFRICOM, 'Obangame Express', www.africom.mil/what-we-do/exercises/obangame-express.

REGIONAL MARITIME SECURITY CAPACITY BUILDING

EUCAP Nestor

In July 2012, the European Union launched EUCAP Nestor, a civilian mission which assists host countries develop self-sustaining capacity for continued enhancement of maritime security, including counter-piracy and maritime governance. Its headquarters is in Djibouti, the Head of Mission is Etienne de Poncins from France.

The mission is mandated to work across the Horn of Africa and western Indian Ocean regions, with around 80 international and 20 local staff members carrying out activities and training across the region with a particular focus on Somalia. In addition to Djibouti, the mission has personnel strategically positioned in Nairobi, Mogadishu, Hargeisa, Seychelles and Tanzania. A liaison officer may be deployed to Yemen pending developments in the security situation.

Mandate and activities

EUCAP Nestor aims to support the development of 'maritime security' systems in these states, thus enabling them to fight piracy and other maritime crime more effectively and to reduce the freedom of action for those involved in piracy in the region. The objective is to offer a solution that covers the whole process 'from crime to court' starting with the arrestation and detention of suspects up to the investigation and prosecution of maritime crime. Strengthening the existing legal and law enforcement frameworks related to counter-piracy and developing relevant maritime security capacity instruments are key to reaching this goal. This requires the mission to work with the main actors responsible for maritime security in each host country. Typically these include coastguard, navy, civilian coastal and maritime police, prosecutors, judges and other key figures.

The mission provides advice, mentoring, and training in three competence fields: legal, maritime and police. Basic coastguard training is for example provided as well as expertise in fields such as law drafting and engineering. Some of the missions' experts are collocated within the authorities dealing with maritime security to support them in their daily work and in the development of organisational structures.

As part of its mandate, EUCAP Nestor promotes regional cooperation in maritime security and coordinates capacity building activities. A series of regional events have been organised, such as a regional conference on maritime security in 2013, as well as a series of regional workshops for prosecutors, judges and other legal practitioners on piracy and other maritime crime in Nairobi and Djibouti.

To achieve its key objectives, and contribute to improved maritime security in this region, EUCAP Nestor operates in various ways.

In Somalia, the mission assists the authorities in developing a self-sustaining capacity in maritime security and rule of law, enabling them to fight piracy more effectively. Currently, the mission offers

strategic and operational advice as well as law drafting support and training. A series of basic coastguard courses for recruits from Somali regions and the federal government, as well as workshops for legal practitioners and police have already taken place inside and outside Somalia. Light equipment related to training activities has been provided based on previous assessments.

From Autumn 2014, EUCAP Nestor is scaling up its engagement in the Somali regions and Somaliland. By January 2015, the mission will have operative field offices in Mogadishu and Hargeisa. The mission's activities include support in the practical implementation of legislation and policy frameworks, training, mentoring, advising and monitoring through embedded experts and capacity building activities addressing the Somali judicial and prosecution actors responsible for investigation and prosecution of suspect pirates and their leaders.

In Djibouti, Seychelles and Tanzania, the mission's activities are aimed at increasing the ability of the authorities to exert effective maritime governance and security over their coastlines, and in internal waters, territorial seas and exclusive economic zones, with a particular focus on counter-piracy and armed robbery at sea. EUCAP Nestor delivers training courses and training expertise to strengthen the maritime security capacity of the host countries with a view to achieve self-sustainability in training.

At the regional level, the mission brings together experts to assist in setting up regional networks and to create a better understanding of maritime security needs in the region. An important achievement is the development of a regional network of law drafters and prosecutors with experience in prosecuting piracy and maritime crime.

EUCAP Nestor carries out its activities within the context of the European Union's comprehensive approach to the HoA comprising a broad set of actions (political, diplomatic, development, security and humanitarian). This is outlined in the *Strategic Framework for the Horn of Africa*, which the EU member states adopted in November 2011 in order to guide EU engagement in the region.

In the fight against piracy, the mission complements a number of other EU actions including the two CSDP missions in the region, the European Union Naval Force Somalia - Operation ATALANTA at sea and the EU Military Training Mission for Somalia on land as well as a number of EU programs funded under the Instrument for Stability (Critical Maritime Routes Program) and the European Development Fund (Regional Maritime Security Program). The mission also works closely with key international and regional organisations such as the United Nations, in particular UNODC and UNDP, the African Union, IGAD, IMO, etc.

BNS *LEOPOLD I* CONDUCTS MARITIME CAPACITY BUILDING WITH TANZANIAN NAVY

EUNAVFOR

On 19 and 20 November 2014, during her recent port visit to Dar Es Salam, BNS *Leopold I* hosted members of the Tanzanian Navy in support of EUCAP Nestor's initiative to conduct local maritime capability building.

On the first day, the crew of *Leopold I* organised several workshops covering topics from the global maritime distress system, first aid techniques, evidence and detainee handling, explosive ordnance disposal and diving. The group of 26 guests was divided in four smaller groups to enable them to get actively involved, with the Belgian Navy instructors preparing interactive exercises for the different areas.

On the second day, 20 Tanzanian Navy personnel and one representative of EUCAP Nestor embarked for a day at sea to witness how the Belgian frigate conducts boarding operations. The guests joined the ship prior to departure from Dar Es Salam port. First, they participated in a workshop about tactical combat casualty care and search techniques and then they received a briefing on the different stages required during the preparation and the execution of boarding operations. Afterwards, the ship's crew demonstrated their procedures and capabilities by calling 'Action Stations' and conducting a full counter-piracy boarding drill, that included taking the suspected pirates

to the temporary holding facility. The pirates and their skiff were enacted by the third sea boat of *Leopold I*, with its crew dressed in civilian clothes.

During the different workshops and demonstrations, many questions were asked and all of the guests felt that they had gained a lot from the experience. By late afternoon, when all the day's activities were completed, the commanding officer of *Leopold I* exchanged gifts with the Tanzanian Navy delegation before they were taken back to their base by the Belgian frigate's sea boat.

The two-day period was very fruitful for all parties involved and helped to strengthen the ties between both navies and EUCAP Nestor, thus contributing to the overall security situation in the area.

HNLMS *DE ZEVEN PROVINCIËN* CONDUCTS MARITIME CAPACITY BUILDING WITH SEYCHELLES COAST GUARD

EUNAVFOR

On Monday 23 June 2014, HNLMS *De Zeven Provinciën* hosted members of the Seychelles Coast Guard. The visit was in support of the EUCAP Nestor initiative to promote regional maritime capability building.

On board the Dutch frigate, 18 recruits from the coastguard were briefed on Operation ATALANTA, the European Union's counter-piracy mission off the coast of Somalia and the EU's comprehensive approach to the region. Following this, members of the ship's company gave a tour around the ship, with a focus on boarding operations and counter-piracy procedures.

During the visit to Port Victoria the crew from *De Zeven Provinciën* took the opportunity to resupply the ship and get some well-earned rest and recreation. She left the port on Tuesday 24 June and has now resumed counter-piracy patrols in pirate high risk area.

FGS *BERLIN* CONDUCTS LOCAL MARITIME CAPACITY BUILDING IN SEYCHELLES

EUNAVFOR

Three local maritime capacity building activities have taken place during FGS *Berlin's* recent port visit to Seychelles. These activities are conducted by the European Union to build the capacity of security forces of regional partners in the fight against piracy, supporting further training provided by EUCAP Nestor.

First on 25 August 2014 fire fighting training was conducted for the Seychelles Coast Guard. This included instructions on the right use of various fire extinguishers, techniques on how to open (hot) doors, and the different roles of members of the fire fighting team. The roles are 'initial attack', that is the first person on the scene; the 'support party', a team dedicated and appropriately equipped with flame retardant suits and oxygen masks; and the 'boundary cooling party', who are responsible for cooling the surrounding area so that a fire cannot spread. The training culminated in a fire exercise for the members of the coastguard.

Second on 26 August Seychelles Coast Guard personnel attended a one day workshop focusing on handling medical emergencies onboard maritime vessels. This workshop included methods of finding a casualty, first aid training, how to handle and transport a patient, how to help a person after near drowning and hypothermia, as well as how to deal with a person in shock.

Both training events went well and a member of the Seychelles Coast Guard, Private J Hoareau stated at the end of the session 'the training is very helpful. In the past two days I have attained much knowledge'. The teams from Seychelles were praised by members of *Berlin* for the enthusiasm and interest, 'we are very proud of you and we are very impressed. You were a great audience', stated Lieutenant Colonel Anja from *Berlin*.

Finally on 26 August a workshop was organised for personnel from the Seychelles Coast Guard and Air Force onboard *Berlin*. This specific workshop covered the background and use of the Mercury system. The Mercury system is an internet-based secure communication network used as an alert and coordination tool by all counter-piracy stakeholders, and is used by Seychelles maritime authorities. Topics covered during the workshop were the general history of Mercury, build-up of Mercury users, access and operational use of the system.

This exercise was an excellent opportunity to enhance skills, coordination and communication amongst the different elements of the Seychelles Defence Forces, and with international partners, like the European Union.

COUNTER-PIRACY OPERATIONS

Sub Lieutenant WKMMPB Amarakoon, Sri Lanka Navy

Piracy off the coast of Somalia was once, relatively, a small problem. The pirates primarily targeted fisherman, cruise ships as well as cargo ships. Over the past few year however, their operations have evolved and they have become bolder, often preying on larger vessels and demanding more significant ransoms. The targeted area at the moment encompasses over a quarter of the Indian Ocean so it is impossible that any one actor could effectively police such a large zone individually - a broader multinational approach is needed as military strategies can only address the symptoms and effects of piracy and not the underlying issues that cause it.

The emergence of piracy has been associated with several key threats already recognised by European Union. The current *European Security Strategy* indicates that potential causes which lead to instable regions are directly connected with state failure and organised crime. The international community has been dealing with the threat of maritime piracy which is essentially another product of a failing region or failed state over the last century; however the threat has only recently re-emerged and become a problem that has seen significant impacts on the EU and our interests.

Piracy is foremost a national security threat (regional security, illicit trade, loss of revenue from reduced ship traffic, environmental threats): it is the Somalian state that suffers the greatest cost as a result of their actions. Nearly 4 million Somalis depend on food donations to survive and not every ship carrying food is able to afford an armed escort, therefore attacks by Somali pirates could eventually lead to a greater threat of widespread starvation than the state is already experiencing.

When analysing NATO's counter-piracy operations, some evidence suggests it lacks a uniform commitment from its members. When NATO agreed to assist in its first counter-piracy missions, it called upon its Standing Naval Maritime Group (SNMG) to take the helm, comprising seven ships from a number of members, including Germany, Greece, Italy, Turkey, the United Kingdom, and the United States. When this operation was put into action, however, only three ships were selected to carry it out: Greece, Italy, and the United Kingdom.

In addition to the different strategic focal points for Alliance members, it is noteworthy that before NATO's counter-piracy operations began, the Alliance had scheduled its SNMG to conduct a series of Gulf port visits under the framework of the Istanbul Cooperation Initiative. When the UN requested NATO assistance, its SNMG was already scheduled to be moving through the area. Under the original initiative, all seven naval vessels were assigned to make port visits, but when counter-piracy became an operational mandate for the Alliance, NATO was only able to provide three naval vessels. In this respect, a case can be made that counter-piracy operations occurred in a somewhat piecemeal fashion, and certainly with a limited naval presence and commitment from the Allies. Operation ALLIED PROTECTOR also had an original mission of making port visits to Southeast Asia. The counter-piracy operation was to be conducted while it was in transit to these ports from 24 March to 29 June 2009. Counter-piracy did not become the first directive of the mission until a marked increase in piracy was seen. On 24 April the piracy threat was moved to the forefront of the mission objective. This policy change marked the first

time that NATO ships were called into the area for the specific purpose of counter-piracy. Since ALLIED PROTECTOR became exclusively about counter-piracy missions, SNMG2 has taken over responsibility for it in the Gulf of Aden.

However, there are also important international reasons for getting involved with the piracy problem. Piracy is an international security threat, international society fears that such actions are only attributing to factors that would further destabilise the country by encouraging the development of other criminal activities such as organised crime. Piracy has an economic impact (threat to global economy) and - not least important - it is a threat to human security.

DRUG SEIZURES IN THE INDIAN OCEAN

Royal Australian Navy

The Royal Australian Navy (RAN) has had a busy year, intercepting drug shipments in international waters in the Indian Ocean. Since September 2013, RAN frigates *Melbourne*, *Darwin* and *Toowoomba* have seized drugs in excess of A$3.5 billion in street value.

The RAN and the navies of other Combined Maritime Force (CMF) coalition partners are focused on disrupting the trade of narcotics, which is a key income source that terrorist organisations use to fund their activities, rather than on criminal prosecutions.

The drug hauls have consisted of heroin, hash and cannabis resin. The drugs have been well hidden within dhows and extremely difficult to access and remove. Seized drugs are destroyed overboard by naval personnel. Disposal at sea is the standard practice for vessels operating with the CMF.

On 22 November 2014, HMAS *Toowoomba's* Commanding Officer Cath Hayes said her team had done a highly professional, efficient job making two heroin busts in 72 hours.

> I am extremely proud of the combined efforts of each of the 191 members of *Toowoomba's* ship's company. Once again our colleagues at Combined Task Force 150 and the Combined Maritime Forces worked with us making sure we were in the right place at the right time to strike and that is what we did recovering approximately 324kg of heroin.

Toowoomba is currently the 58th rotation of a RAN warship to the Middle East Area of Operations (MEAO) since the Gulf War (1990-91) and the 34rd deployment under Operation SLIPPER/MANITOU. Operation MANITOU, as it is currently known, is the Australian Defence Force contribution to the international campaign against terrorism, counter smuggling and counter piracy in the Middle East maritime security environment, an area of over 2,000,000nm^2, encompassing the Red Sea, Gulf of Aden, Persian Gulf, Arabian Sea, Indian Ocean and the Gulf of Oman.

Indian Ocean security is vital to ensure maritime trade flows through it, which is important to global, regional and Australian strategic interests. Australia is partner in the CMF, a multinational naval partnership of 30 nations based in Bahrain: Australia, Bahrain, Belgium, Canada, Denmark, France, Germany, Greece, Italy, Japan, Jordan, Republic of Korea, Kuwait, Malaysia, Netherlands, New Zealand, Norway, Pakistan, Philippines, Portugal, Saudi Arabia, Seychelles, Singapore, Spain, Thailand, Turkey, United Arab Emirates, United Kingdom, United States and Yemen.

INDIAN OCEAN NAVAL SYMPOSIUM: THE HISTORY SO FAR

IONS Secretariat

2008

The inaugural Indian Ocean Naval Symposium (IONS) Seminar and Conclave of Chiefs occurred in New Delhi and Goa, India 14-16 February 2008. In total, 27 nations from across the Indian Ocean gave their support to this new regional initiative.

The seminar covered: an overview of Indian Ocean region maritime scenarios, contemporary maritime challenges, maritime cooperative approaches, and commonalities in maritime challenges and options for a cooperative regional maritime security structure. The proceedings were published in Ravi Vohra, PK Ghosh, D Chakraborty (eds), *Contemporary Transnational Challenges: International Maritime Connectivities*, KW Publishers/National Maritime Foundation, New Delhi, 2008.

Discussion at the Conclave of Chiefs focused on a draft Charter of Business and it was agreed to rotate the IONS chairmanship every two years.

In 2008 the Indian Navy launched the IONS Essay Competition with the topic of 'Sustaining the IONS initiative: practical solutions'; the winner was Commander N Malhotra (Indian Navy).

2009

In May 2009, Sri Lanka hosted an operational workshop on 'Practical cooperative-mechanisms for technical-support within the Indian Ocean region'. The workshop provided a useful opportunity to exchange knowledge and information amongst member navies.

In October 2009, Kenya hosted the IONS preparatory workshop in readiness for the 2010 Conclave of Chiefs. The preparatory workshop provided the opportunity for the staff officers of IONS nations to openly discuss business matters, including the Charter of Business and forward activities.

The United Arab Emirates conducted the 2009 essay competition with the topic 'Cooperative EEZ surveillance: options and initiatives'; the winner was Lieutenant Commander M Samad (Bangladesh Navy).

2010

The United Arab Emirates assumed chairmanship of IONS in May 2010. The second IONS Seminar and Conclave of Chiefs held in Abu Dhabi was attended by delegations from 29 nations.

Plenary sessions included discussion on: regional stability and good order at sea, cooperative efforts to enhance maritime security, experiences and challenges of regional capacity-building and capability

enhancement, and combating piracy and maritime crime. A workshop was also conducted and covered treatments, risks and vulnerabilities, leading to a new common maritime security strategy, regional medical and humanitarian maritime missions and new technologies to the service of interoperability in the fields of surveillance and information exchange.

The Conclave of Chiefs supported the development of an IONS website (to be hosted by India). South Africa volunteered to conduct the IONS Essay Competition for three years.

The topic for 2010 essay competition was 'Islands and chokepoints: a cooperative model for security'; the winner was Commander S Kumar (Indian Navy)

Two operational workshops were conducted in October 2010. Bangladesh hosted a humanitarian assistance and disaster relief logistics workshop. Indonesia hosted a workshop on counter-piracy concepts, and this workshop coincided with the IONS preparatory workshop.

2011

The topic for the 2011 essay competition was 'Towards enhancing maritime capability in the Indian Ocean rim'; the winner was Lieutenant Commander Y Athawale (Mauritius).

2012

In February 2012 Sri Lanka hosted a workshop on the 'Importance of coordinating and sharing resources for efficient maritime operations in Indian Ocean region'.

The third IONS Seminar and Conclave of Chiefs was held in Cape Town, South Africa in April 2012, where South Africa assumed the IONS chairmanship for the following two years.

The IONS essay competition continued with a choice of three topics and the winner was Lieutenant S Bates (Royal Australian Navy).

India launched the IONS website (http://ions.gov.in/) in 2012 and the first edition of IONSPHERE: the Indian Ocean Naval Symposium newsletter.

2013

India published the second edition of IONSPHERE in July 2013.

In 2013, India hosted the preparatory workshop and an operational workshop, which included panel discussions on the role of emerging navies and maritime security forces in collective prosperity in the Indian Ocean region, challenges and opportunities for maritime cooperation among Indian Ocean region navies and essential interfaces required for strengthening naval cooperation, interoperability and confidence building initiatives amongst IONS maritime forces.

2014

India published the third edition of IONSPHERE in January 2014.

The fourth IONS Seminar and Conclave of Chiefs was held in Perth, Australia in March 2014 and 22 nations attended. Australia assumed the IONS chairmanship (http://www.navy.gov.au/ions) for the following two years.

The seminar theme focused on the maritime economics of the Indian Ocean and was published as Andrew Forbes (ed), *Protecting the Ability to Trade in the Indian Ocean Maritime Economy*, Sea Power Series No 3, Sea Power Centre - Australia, Canberra 2014.

The Conclave of Chiefs agreed the IONS Charter of Business, which paved the way for China and Japan to become the first IONS Observers.

To assist the further maturity of IONS, working groups were established matching the agreed IONS deliverables: humanitarian assistance and disaster relief, counter-piracy, and information sharing and interoperability.

In 2014 the IONS Essay Competition recommenced in line with the IONS chairmanship. Competitors have again been given a choice of three essay topics and the winner will be announced in March 2015.

In December 2014 Australia published the 4th edition of IONSPHERE.


INDIAN OCEAN NAVAL SYMPOSIUM