

CAKAP TAKTIK MARITIM



44th Edition • April 2016

PUSTAKMAR

Piracy in
Malaysian Waters

Managing
The Sea Lines of Communications

**Asymmetric
Warfare**

Sea Basing
Roles and Purposes

**Sonar Performance
Prediction System**





“We will turn the challenges into opportunities” – Admiral Dato’
Seri Panglima Ahmad Kamarulzaman bin Haji
Ahmad Badaruddin

FOREWORD

Captain Mohamad Azuwan bin Harun RMN



WELCOME to the 44th edition of Cakap Taktik Maritim for 2016. We have exclusively found the good and interesting articles for your reading pleasure in this issue. The contributions from The Navy People was always on the good path. We hope these articles can provide you valuable insights and are thought provoking.

As our commitment is to serve you better, PUSTAKMAR is always will strive for continuous improvement and development. This is our benchmark of excellence. At PUSTAKMAR, the doors will always be open as to enable you to explore and experience the highest level of wargaming. We will

attempt to bring the combat theatre closer to you. We seek to create the most ideal working and training environment to develop individual potential at all levels of staff.

We are absolutely line abreast towards our core function to provide a well-organized wargame training continuously including BTT, CTT and ITT. We are confident that through our highly professional and motivated workforce to achieve the target.

Once again my profound gratitude and appreciation for your continuous support and contribution to CAKAP TAKTIK MARITIM. We wish you every success and enjoy reading.

“Fair Winds and following Seas”

CAKAP TAKTIK MARITIM 44th edition April 2016



**ON THE
COVER: KD
KASTURI** on
patrolling the
Straits of
Malacca

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TACTICAL AND STRATEGIC CONTRIBUTION

The wider MAF warfare community is strongly encouraged to submit articles to this publication on issues relating to maritime warfare, which are tactical in nature. To ensure the maximum number of articles you are requested to write about 1000 words. Illustrations are most encouraged. Contact the Editorial Team for advice at Tel: 05-6817853 or Fax: 05-6817868





MARITIME DOMAIN AWARENESS IN COMBATING PIRACY IN MALAYSIAN WATERS

Lt Cdr Segar a/l Muniandy RMN

BEING a littoral state, Malaysia has a vast maritime area encompassing the Straits of Malacca (SOM), South China Sea, the Sulu and Sulawesi Seas. When we mentioned about MDA, it has a very significance relationship between the ocean interdependence of nations which is continue to increase and the importance of information sharing in order to analyse, overcome and neutralise any maritime threats that may hinder the free flow of trade which utilise the sea as medium of transportation.

In the strategic context, Malaysia being a maritime nation views the sea as source of economy multiplier and therefore the security and economic survivability of the nation solely depend upon the sea which on the other hand acts as the first line of defences against any form of threats or adversaries.

The issues regarding the maritime security in the SOM are very complex. Prevailing threats in the straits encompasses a wide spectrum of issues from minor theft incidents in harbour, armed robberies and piracies at sea, environmental pollution, drugs and

Human trafficking and even up to potential maritime terrorism. The fact is that these crimes are considered transnational threats and it further multiplies to the complexity, would cripple or block the strategic passageway rendering economic losses, death and injuries.



A group of pirates spotted in Straits of Malacca.



A human trafficking cases in Malaysian waters.

Although statistics with regards to transnational crimes such as kidnapping, drug trafficking, human smuggling and hijacking shows dramatic drops, it is still poses enormous threat to the safety and security of SOM in the recent years. Nevertheless there is some area which these crimes still persist.

Maritime Domain Awareness

There are various definitions with regards to Maritime Domain Awareness (MDA). However, the International Maritime Organization (IMO) define MDA as the knowledge of whatever associated with maritime world or domain which may manipulate or have the ability to influence the environment, safety and security; and economy. MDA seeks to facilitate the decision makers through bolstering and intensify sharing of information over policies improvements, enhancing situational awareness, intelligence assimilation, sharing of information and preserving the

potential to render a maritime domain which boost benefits and assurance bounded by domestic borders and around the continent.

Therefore, in order for decision makers to make sound judgement at all levels; it requires information which is readily available, easily reachable and

The Straits is safer today than they were a decade ago largely due to the cooperation between the Littoral States, and support from the international community and the private sector

foreseeable. To accomplish this purpose, present maritime information sharing facilities must be strictly protected by the states and at the same time instigating efficient methods to toughen and considerably upgrade them over MDA operational structure.

By addressing the maritime challenges currently faced and promoting further progress in identifying and addressing the challenges, MDA seeks to enable decision-makers by strengthening and enhancing the information sharing environment through the continued development of policies, enhanced situational awareness, intelligence integration and information sharing, and safeguarding capabilities to provide a maritime domain that supports prosperity and security within the domestic borders and around the world.

Present Situation of MDA in Straits of Malacca

Non-traditional maritime security threats have become widespread. Although traditional threats have receded, non-military threats have become lethal and widespread because of the increasing number of non-state actors. As for Malaysia, being a maritime nation that shares the Straits with other neighbours, MDA is a key ingredient in dealing with maritime security issues in the aspect of responding on the urgency during peacetime requirements and act in response during crisis and conflict.

Literally, in an effort to resolve the maritime security issues, it is believed that the mechanisms have performed their part in arranging an avenue for the relevant parties for a better decision making in favour to all Littoral States thus encouraging confidence building and eventually creates the way for a resolution of outstanding and complex maritime issues. As a

result, the cooperative mechanisms which Southeast Asia adapting has enable the sharing of best practices of handing complicated situation, exchange of officers and funding within the agencies, technology and know-how through joint exercises and operations, in the academics and other individuals of member States.

There were several measures taken by Malaysia with the other Littoral States which the main objective is to deter and restraint the maritime security issues and safeguarding the straits from any kind of threats. Following are some of the initiatives:

- The navies of Singapore, Malaysia and Indonesia established MALSINDO, a coordinated patrol scheme in the SOM. Launched in July 2004, this trilateral initiative is a joint special task force by the littoral states to protect the Straits and present efficient policing along the straits.
- A maritime air operation for surveillance over the SOMS called 'Eyes in the Sky' (EIS) initiative. The main focus of this initiative is to detect and deter acts of piracy and transnational criminal activities in the Straits.
- The establishment of

Information Sharing Centre or Changi C2 Centre. This ambitious new facility, the first of its kind in the region, aims to serve as a regional maritime security hub by providing a useful platform for nations to cooperate and respond more flexibly and effectively to a dynamic maritime security environment. Looking further ahead, it has the potential to develop into a strategic hub for a global MDA network.

Achievement

Strategically for Malaysia, the security of the SOM and the ability for vessels to travel freely without any threats will remain important, particularly for the RMN. The Straits is safer today than they were a decade ago largely due to the cooperation between the Littoral States, and support from the international community and the private sector. When the Littoral States of the SOM began working



MT ORKIM HARMONY after the hijacking incident in 2015.

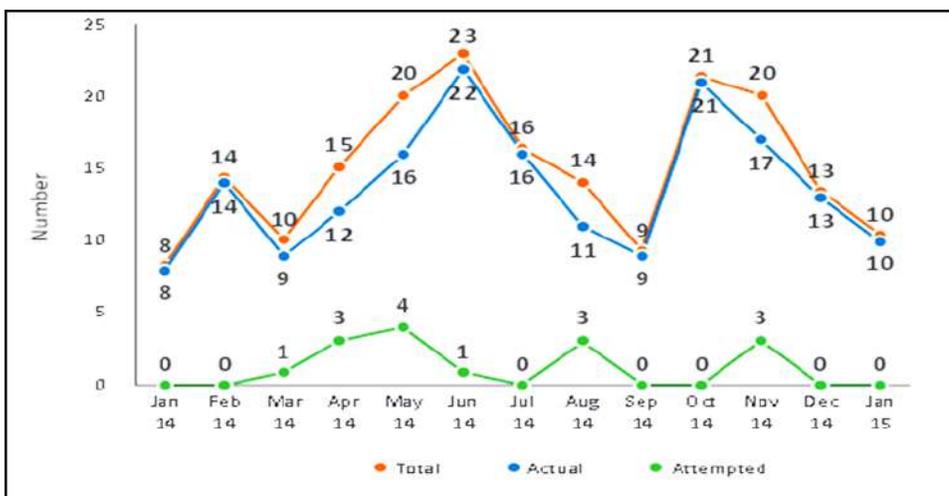
together, the results were dramatic.

According to ReCAAP (Graph 1), a total of 10 incidents of robbery on board ships were reported in Asia in January 2015. However no piracy incidents were reported. There has been a continued decrease in the number of incidents reported in the past 3 consecutive months. Refer to Graph 1 on the number of incidents reported every month between January 2014 and January 2015.

While the number of incidents involving piracy decreased over the years, and this was attributed to timely reporting by shipping industries, vigilant exercise by master and crew, enhanced enforcements and speedy responses by the authorities; as half of the total number of incidents reported in January 2015 occurred on board bulk carrier, container ships, tug boats towing barges while underway in Traffic Separation Scheme of SOM. Hence, these warrants continue enforcements and surveillance by Littoral States; and exercising extra vigilance by master and crew.

Recommendation

The challenges facing the RMN have changed dramatically over the past decade and have made MDA increasingly complicated and uncertain needing ways to improve its MDA capabilities.



Graph Number of Incidents (January 2014 –January 2015) Source: ReCAAP January 2015 Report

- RMN Capability Enhancement – more with less. Being a small navy, the RMN needs to evolve to remain relevant. It has to create a credible force encompassing an integrated system of ships, aircraft, submarines and well trained personnel, to ensure MDA capabilities. The RMN has to do more with less. In other words, one of the RMN challenges is to stay ahead by achieving improvement through the application of creative and innovative solutions and making all round improvements continuously.
- Intelligence as the Means. To have an effective MDA, it must consist of two key components: information and intelligence. These components will combine in the Common Operating Picture (COP) to create a substantive, layered presentation of the global maritime environment.
- Greater Information Sharing towards Actionable Information. Sharing information is absolutely essential if this growing network is to effectively detect, identify and track the most dangerous threats to MDA. Awareness generated through information sharing will enhance understanding of the MDA, including adjacent ungoverned areas in which terrorists operate, thereby providing opportunities to deal with threats as far away from SOM as possible.
- Establish MDA Concept of Operations in accord with RMN Roles. A document must be made available to provide an overarching guidance for the development and application of Maritime Domain Awareness (MDA) across all levels of command for the RMN. It must

provide the conceptual framework to prioritize MDA efforts across the RMN, ensure alignment with external MDA initiatives, and inform the Fleet MDA Concept of Operations (CONOPS).

- Strengthening Existing Cooperation among Littoral States. To enhance MDA capabilities in the SOM, the trilateral Malacca Strait Sea Patrol (MSSP) must ensure the participating states conduct co-ordinated patrols while facilitating the sharing of information between ships and the Monitoring and Action Agency (MAA) in a more serious manner.

Conclusion

The security of the SOM and the ability to travel freely will remain of strategic importance to Littoral States and user states for the foreseeable future. The Straits is safer today than they were a decade ago largely due to the effective management and cooperation between the Littoral States, and support from the international community and the private sector. In charting the future for the SOM, further discussion and research still need to be undertaken to address various issues confronting the sea lane. The Littoral States must continue to face a plethora of challenges, existing and emerging, to manage the Straits in the years ahead. They must have their work cut out to

assure safe passageway in the waterway while balancing their own national and regional interests with those of the international community. Only persistent MDA of the Straits will help ensure a comprehensive security environment for this vital passage. The international community must put its money where their mouth is and match words with deeds to help Littoral States address the security MDA concerns in Straits in a cooperative manner that does not infringe upon the sovereignty of the states. There is certainly a demand and need for Littoral States to be more proactive and less reactive to these issues. As countries in the region share significant maritime interest, the need to create a stable maritime regime through bilateral and multilateral co-operation must remain high on the regional political agenda. **CTM**

About Author



Lt Cdr Segar a/l Muniandy RMN joined Royal Malaysian Navy in 9 June 1999 as Cadet Intake 49. He has served on various ashore as well as sea going appointments including Commanding Officer of KD LEDANG and currently appointed Staff Officer of Research & Development, PUSTAKMAR. Graduated from UNITAR with Honour in Degree of Business Administration (BBA) and continue expanding his knowledge after attending Naval Command and Staff Course, China in the year of 2014/2015.

THE MANAGEMENT OF THE SEA LANES OF COMMUNICATION IN SOUTH EAST ASIA

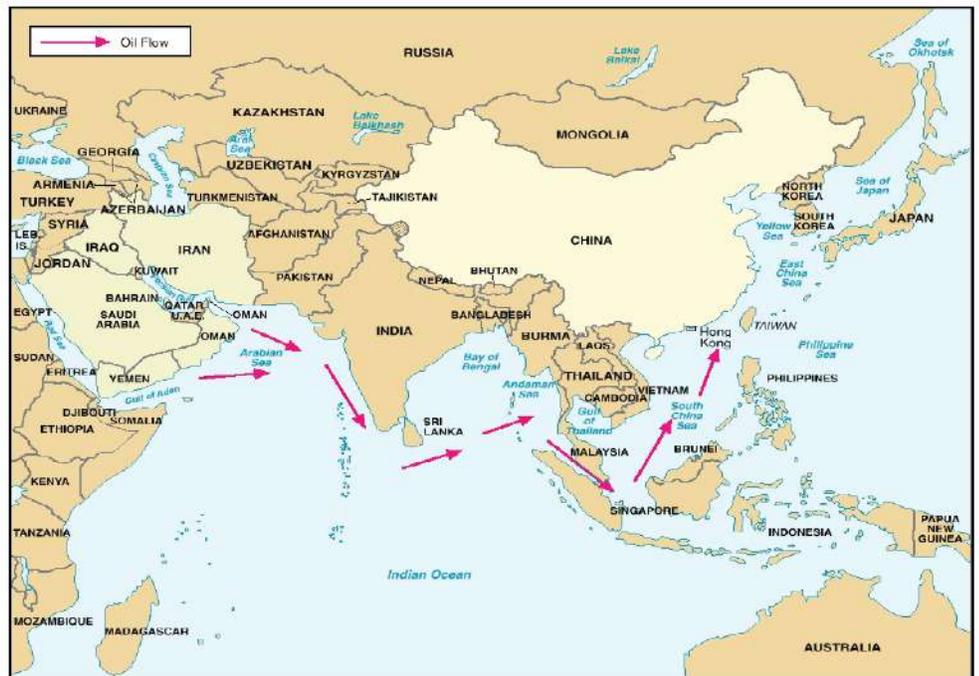
Lt Mohd Farid Ikhwan bin Adinan RMN



SEA Lanes of Communication (SLOC) is a term which describes the primary maritime routes between ports, trades, logistics and naval forces. The importance of the SLOC in the Southeast Asian region flows from the nature and the complexities of the geographical environment, as well as their effects on other countries and major powers. Given the distribution of water and land, the region has one of the most complex structures on earth. Topographical features such as shallow continental shelves, deep-sea basins, troughs, trenches, continental slopes and volcanic and coral islands are found in the region. There are numerous large and small islands, which divide the waters into different seas connected with many channels, passages and straits. The increasing significance of maritime issues - natural resources, marine environment, accidents at sea, search and rescue

issues, and the propensity of illegal activities - piracy, the narcotics trade, smuggling, refugee flows, and disputes - that occur at sea, render

the issue of management of the SLOCs, a substantial concern for the policies of the regional states including the major powers.



Oil routes from Middle East through Malacca Straits.

International sea lanes through Southeast Asia are important to the economic and political livelihood of Malaysia. The commercial and strategic significance of the South China Sea requires little elaboration. The sea is a major source of food for the region, and the sea lanes are the lifeline of East Asian economies heavily dependent on unimpeded access to raw materials, as well as market and investment opportunities throughout the region. As the interdependence of nations' grow the issue of solid co-operation and communication for the management and safeguarding of these passages has become indispensable in the political agenda of different states and institutions.

The largest SLOC is the South China Sea. It stretches 1,800 nautical miles from Sumatra to Taiwan and is home to four principal island groups and three major zones of petroleum exploration. It also provides the Sea-lanes connecting

Northeast Asia with Southeast Asia and the Middle East. Regional powers, in terms of regional maritime security stability and seaborne trade, consider the Strait of Malacca and the South China Sea to be the most important. The Straits of Malacca and Singapore are considered to be the busiest in the world. In 1995, more than 104,000 vessels called at Singapore and about

China Sea have been considered very important as possible bases for control over the SLOCs between the Indian and the Pacific oceans. This is one of the reasons why the South China Sea is may be considered strategically volatile due to the maritime boundary disputes between adjoining nations.

States like the United States and Russia, are strong supporters for the internationalization of the above mentioned Straits, as their navies have global missions that depend on passages through them. In the case of Japan, its concern with the passage in the straits is essentially economic, since the Strait of Malacca is considered a vital lifeline for its international trade. The value and importance of the two-way international trade that passes through these sea-lanes is enormous. A regime which has sets of implicit or explicit guidelines, principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations. In other words, a stable maritime regime pre-supposes a clear understanding on what is the common interests and what should be norms applicable to the management affairs of SLOCs.

It should be noted that the recent downturn of the Southeast Asian economies and the abrupt devaluation of regional currencies are developments, which disturb regional stability. Any marked change in living standards and employment in regional countries, such as Indonesia, Malaysia and Thailand, could possibly lead to levels of tension, affecting any SLOC management policy.

International sea lanes through South East Asia are important to the economic and political

300 used both the Straits of Malacca and Singapore every day. As for the South China Sea, it is very important for economic reasons, due to oil and gas deposits, in the Spratly area, as well as fisheries and eco-tourism potential of the islands. For strategic reasons, the islands in the South



USS George Washington in formation with KD JEBAT and KD LEKIU.



Aerial view of Tanjung Pelepas Port.

Vital offshore oil and gas installations and ships carrying hazardous and dangerous cargoes could appear as attractive targets. In order to consider any inter-state co-operation, be it on a bilateral, multilateral, regional or international basis, and to ensure the maintenance of peace and stability in the region, one has to start by defining the form or kind of threats that exist.

One may also classify the forms of threat from the point of view of those who security and interests are likely to be jeopardized. There are threats to the interests of both the coastal states and the external powers, on one hand, for example grounding, collision and piracy. On the other hand, only

threats to the security and interests of the coastal states, for example illegal border crossing, pollution. Given the possibility of mutual or common perception and understanding of the forms of such threat (risks, problems) to the security of the sea

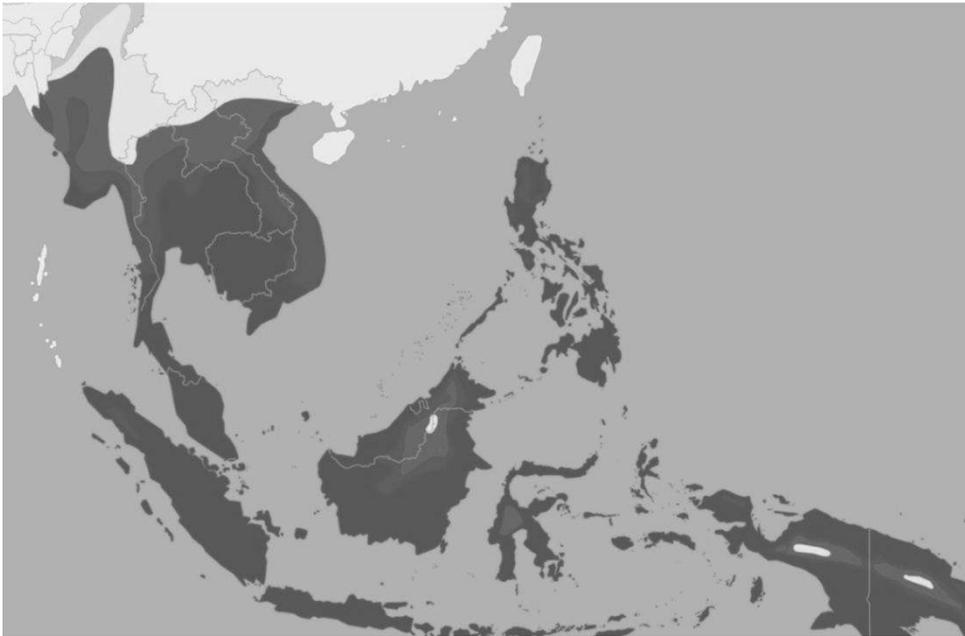
considered improper for the sake of accountability. Discussions about enhancing security revolve around the concepts of "measure" and "mechanisms". In these sub-regions, it is not enough to trust and confide in just the words of the other party.



A fleet of merchant vessel in Malacca Straits.

lanes in the ASEAN region, it may help to determine not only the forms of inter-state security co-operation, but also the possible areas to be covered and the countries to be involved accordingly.

South East Asian culture is the offspring of the concept of harmony. Consensus has become routine in reconciling differences, in which the informality of the process is very much appreciated. The Southeast Asian approach is diametrically different from that adopted by other sub-regions. In other sub-regions any approach or process must be framed in a formal structure. Informality is



The waterways through the region are strategically important for both merchant and naval vessels

The common interest for all nations is a stable and peaceful environment which allows the unimpeded passage through the vital SLOCs. Other maritime issues, such as piracy and territorial disputes, also have an economic dimension. Therefore, these are common concerns for all nations, such as the uninterrupted flow of sea-borne trade, which sustains economic prosperity. Economic integration has brought interdependence and a shared destiny to the region. The present economic disintegration and decline that most of the regional countries are facing, with effects beyond ASEAN, adds to the instability fears. Australia is alarmed with the instability afflicting its northern neighbours. Much of Japan's trade, including critical oil supplies passes through the regional straits. American warships that have long helped ensure that the region's sea-lanes stay open depend on unimpeded passage through Indonesian-controlled waters.

Lastly, in the South East Asian region, maritime developments play a large role in the emerging regional strategic architecture. The security environment of East Asia is essentially maritime. Many of the

countries in the region are islands or island chains. Others, such as China and South Korea, have long coastlines. Southeast Asia lies at the junction of the Pacific and Indian Oceans. In terms of shipping movements, its seas and straits - the South China Sea, the Gulf of Thailand, the Java Sea, the Strait of Malacca, the Sunda Strait, the Ombai-Wetar Straits and the Makassar Strait - are among the busiest in the world. Security in the region is very much concerned with maritime issues and capabilities. The waterways through the region are strategically important for both merchant and naval vessels. Coastal and off-shore resources provide a principal means of livelihood for many of the countries in the region. For many countries, military threats can come only from the sea. **CTM**

About Author



Lt Mohd Farid Ikhwan bin Adinan RMN has joined the Royal Malaysian Navy on 10th May 2005 and now as Above Water Warfare Officer of KD HANDALAN. He was served in several units such as KD JERONG, MAWILLA 1, PROTELA Kuantan and PSTL Kuantan. He had an opportunity to undergo Principal Warfare Officer Course in KD SULTAN IDRIS I.



ASYMMETRIC WARFARE

A Few More Thoughts

LCDR Christopher Watson RAN

IN the December 2014 issue of *CAKAP TAKTIK I* described some of the issues raised by First Admiral Ong Thiam Hock, Royal Malaysian Navy (RMN), at the Asian Naval Warfare Conference. In his speech he looked to the future for naval doctrine and tactics in Asia and considered the nature of high intensity conflict in comparison with asymmetric warfare. The recent

discovery of a video showing ongoing work in a “Jihadi technical

college” laboratory belonging to Daesh or the so called Islamic State of Iraq and the Levant (IS), serves to highlight the speed and accessibility of technological advance as well the widespread availability of skills to develop and exploit new technologies. Private enterprise with available funding and terrorist or criminally focussed groups with illegal but substantial finances are demonstrably capable of developing new techniques to circumvent or remain one step ahead of larger bureaucratic and state organisations.

Only all-out state on state conflict seems to bring the impetus of speed to state-sponsored or affiliated defence technological evolution such as was observed in Nazi Germany during World War Two. As noted previously the World Economic Forum report for 2015

assessed the likelihood of interstate conflict as the number one global risk and as I type this in early 2016 the situation in the Middle East, especially between Saudi Arabia and Iran shows little sign of improvement.

However, a number of states have declared war on IS and many Arab and Western countries alike see the IS scourge as an existential threat. It would seem however that none are prepared to react to what is in effect a fledgling nation state by placing their own nation unconditionally on a war footing. The official United States policy definition of Asymmetric Warfare is:

“In military operations the application of dissimilar strategies, tactics, capabilities and methods to circumvent or negate an opponent’s strengths while exploiting his weaknesses.”

While there are elements of IS’s tactics in its ground offensive which would not be considered Asymmetric it is its use of social media and the asymmetry of its brutality which have largely wrong

“In military operations the application of dissimilar strategies, tactics, capabilities and methods to circumvent or negate an opponent’s strengths while exploiting his weaknesses.”

footed its opponents. “It seems ISIS has been paying close attention to the West’s “best practices” in employing violence in media and entertainment—the adept use of music, cultural tropes, special effects, cinematography and gaming—to engage its audience. They seem to have figured out how to unleash violence’s intoxicating neurochemical cocktail with a mix of Spielberg’s realism in *Saving Private Ryan*, the psychological immersion of Kathryn Bigelow’s *Hurt Locker* and the “excitement” of *Grand Theft Auto*—except it’s all real.”



IS personnel continuous training.

with GBU-12 Paveway II. These attacks also employed aircraft from the carrier *Charles de Gaulle*.

its largest airstrike of the bombing campaign sending 12 planes, including 10 fighters, that dropped 20 bombs in training camps and ammunition facilities in Raqqa, Syria, the *de facto* capital of IS.



French Rafale launched from carrier *Charles de Gaulle*.

La Belle France declared ‘war’ following the Paris atrocities. It has faced this type of asymmetric threat before, during the Algerian War of Independence. In this anti-colonial conflict it experienced the impact of asymmetric warfare by Algerian nationalists on influencing public opinion. Yet today, other than covert (and therefore unreported) SF insertions, the French Operation Chammal has consisted only of aerial attacks since 19 September 2014 when the French Air Force carried out their first airstrike using two Rafale jets armed

Following the Paris attacks in November 2015, France employed

Contrast this paltry effort with the close to 1,000 aircraft operating mainly from bases in Italy and aircraft carriers stationed in the Adriatic during the Kosovo War. Between 24 March to 11 June 1999, with the exception of Greece, all NATO members were involved to some degree. Over the ten weeks of the conflict, NATO aircraft flew over 38,000 combat missions. The attacks by IS on Paris did not invoke Article 5 of the NATO treaty. The principle of collective defence is at the very heart of NATO’s founding



Typical scenario at Palestine.

treaty and Article 5 was invoked only once before after the Attacks on New York and Washington on 2001. While Article 5 responses in support of France would be dependent on individual NATO countries, the solidarity and symbology of invoking Article 5 should not be understated.

In December 2015 the Saudis announced an Islamic military alliance. A coalition of 34 nations to coordinate the fight against terrorist organisations. Of course one man's terrorist is another man's freedom fighter but the Saudi Foreign Minister said "It is time that the Islamic world take a stand, and they have done that by creating a coalition to push back and confront the terrorists and those who promote their violent ideologies." Talk is cheap and while smart bombing even on a small scale is expensive neither will defeat IS. Smart bombing, while asymmetric given the US definition, is a very small part of a permanent solution although it may tick the political boxes with a French public crying out for a reaction.

As Christopher Stevens describes: "The West and Russia



A coalition of 34 nations to coordinate the fight against terrorist organisations.

cannot "win this war" solely with air strikes and military actions. They must also use complementary approaches to counter the appeal and the attraction to those individuals drawn to ISIS radical and religious extremist ideology." Unfortunately the Saudis have excluded Iran, Iraq and Syria from their coalition and military actions on the ground have so far been to niggardly to prevent the spread of IS-affiliated groups in other vulnerable countries.

A great fear for any nation state is that a terrorist group will develop and employ biological or nuclear materials. While intelligence agencies are proactive, it is not possible to achieve 100 percent

"It is time that the Islamic world take a stand, and they have done that by creating a coalition to push back and confront the terrorists and those who promote their violent ideologies."

success in detecting the intent of the terrorist or organised crime. Therefore it behoves nations under threat to plan and train for the worst.

When is the last time the Navy in Lumut exercised against the unthinkable? An armed incursion taking over a married quarters block, perhaps leading to a hostage situation; the intentional release of radioactive materials on a ship, perhaps one without a citadel; the



IS continuous mission.



The Lahad Datu incident in Sabah was a continuous Asymmetric cases occurred in Malaysia.

prevention of a USS Cole style attack on the berths? On September 12 2001 thousands of metaphorical stable doors were firmly shut across America. In Texas at Lackland Airforce Base after queuing for two hours to get into work, the author like thousands of others gave up and went home. Is the MAF prepared for Asymmetric attacks in Malaysia?

which radiated human like body temperatures. With no chance of overpowering the military might and sophistication of their enemy, the weaker actor in an asymmetric war must rely simply on strategies and tactics that will inevitably break the political will of the superior power. Today there is no physical barrier to prevent an Oklahoma style

threat. Penetration by intelligence community assets is essential as is the flow of intelligence information between interested parties. For example could closer integration of Belgian and French intelligence analysis have prevented the Paris atrocities? Fighting and winning the Information war against an asymmetric foe that has established its dominance exploiting the internet and through exploiting media of all descriptions must also be another key objective. All of these, including air strikes and a “boots on the ground” mentality (hopefully predominately from the Saudi led coalition in the case of IS) require threatened nations to focus on areas which need to be brought to a war footing before it is too late. **CTM**



Airstrike on Syria.

The IS developing a remotely controlled IED bearing vehicle. To fool any IR sensors at a base guard post they had also built a dummy

attack on the heart of the Malaysian Fleet – it’s headquarters building. Small Arms fire at a reinforced lorry driver’s cab would in all likelihood be ineffective.

So one way to defend against the asymmetric threat is to out-think the perpetrators and within the necessary risk and cost analyses take steps to neutralise the potential

LCDR Chris Watson RAN transferred to the RAN from the Royal Navy. A Principal Warfare Officer and Ex-Cold War diplomat in the USSR and Poland. He has been XO of HMS IRON DUKE and First Lieutenant of the helicopter carrier HMS OCEAN. Ashore he has contributed to IO NATO, WEU and the ADF ranging un diversity from the global war on terror, West Africa, The Balkans, Iraq, East Timor, Solomon Islands and the NATO IO Working Group in Brussels.

About Author



KIDNAPPING and threats of aggression in Eastern Sabah waters are occurring in greater frequency. The Malaysian Government and society, particularly those living in that region, are becoming increasingly concerned at this critical security issue. The Royal Malaysian Navy (RMN) has increased its operational tempo in the area in order to tackle the issue and provide peace and stability to the region. Concurrently, the Malaysian Armed Forces (ATM) have developed an operation named “Sea Basing assignments” (base at sea). This new concept is one of many measures to improve operational effectiveness in that particular area.

The Defense Minister, Datuk Seri Hishammuddin Hussein, in his speech said “Sea-basing, a naval capability that provides commanders the ability to conduct selected functions and tasks at sea without relying on infrastructure ashore, will enable strategic deployment of assets in tightening the security off Sabah waters”. The Defense Minister said the concept,

which was originally proposed by the Royal Malaysian Navy, would enable security forces to give prompt aid in any emergency or incident.

*“Sea-basing, a naval capability that provides commanders the ability to conduct selected functions and tasks at sea without relying on infrastructure ashore, will enable strategic deployment of assets in tightening the security off Sabah waters” –
Defense Minister*

Sea basing involves the placement of naval vessels and personnel, including the creation of a small naval base offshore, with the purpose of intercepting unknown ships or potentially hostile intruders far from the country’s coastline. Additionally, MPCSS would be the main platform for resupply of fuel and water to the supporting RMN ships thus reducing the time for



Datuk Seri Hishammuddin – Defense Minister.

replenishment. They can also provide medical aid and function as operational HQ on the frontline. This system will enable more strategic deployment of military assets, and create a better state of readiness for any situation.

About MPCSS Squadron

31st MPCSS Squadron consists of two ships which commissioned between 1980 to 1983. They are KD SRI INDERA SAKTI (1503) and KD MAHAWANGSA (1504). This paper will describe each ship separately as they are different classes, and as such, different in nature and purpose.



OP SEA BASING

The Roles of KD SRI INDERA SAKTI

Lt M Muhamamd Faiz bin Musa RMN



KD SRI INDERA SAKTI

This ship was built to support a squadron of up to six small ships, including mine counter measure vessels and patrol craft, in operational areas away from a traditional naval base. The vessel has various storage and container facilities, amenities, accommodation and workshops that are capable of rendering ample support for all classes of ship at sea.

The ship is 100m in length, breadth 15m, draught 4.75m, can embark up to 4459 tons (is this tonnage or what it can carry>??), and has a maximum speed of 16.5kn. Its endurance at sea is approximately two months and is armed with Bofors 57 mm as the A-Gun. The ship is also equipped with a 15T crane and a helicopter platform capable of embarking a RMN Super Lynx, Fennec or its equivalent. The vessel can carry up to 750T fuel and 70T of fresh water.

The ship has the capacity for the short haulage of up to 250 men with its existing messing and toilet facilities, and camp-beds. A Sick Bay comprising a Medical Office,



The deployment of military personnel at sea.

examination room and up to 10 beds is also available. It is also fitted with an operation table, adequate lighting and necessary cabinets and lockers for storage of medical kits, instrument and medicines. A canteen, catering to the requirements of the crew, sell items such as snacks, drinks, confectionary and toiletries. A barber shop and a sail-loft are also located on this messing deck. A large briefing room with capacity of 50 seats is available on the Senior Officers accommodation deck. This room also fitted with a projection screen, white board,

display board and dimmable lighting. Desks are also available as a class-room for training if required.

The ship has workshops to provide second line maintenance and repair support for small ships. All these are located below the funnel and helicopter decks. There is a Shipwright Workshop for ferrous and non-ferrous metal fabrication, Carpenters Workshop for all wood work, Mechanical Workshop for machinery components and mechanical repair, and an Electrical Electronic Workshop for testing and repair of electronic components. The workshops are located in a way that allows the seamless transfer equipment for repair from ships berthed outboard it. Standard machine tools, hand tools, general (non-specific) tests equipment and power supplies are provided.

Operation

The principle task of 31st MPCSS is to deliver support and sustainment to combat units and their support equipment, as well as deployed forces, conducting single and joint operations.



KD SRI INDERA SAKTI in formation with KD LEKIR and USS Chung-Hoon.



PASKAL climbing the freeboard.

This ship is purposely built to function in a command role and is able to remain in an operational area, or in vicinity of the operational area, for a long period. Notwithstanding, the equipment and other facilities required to carry out the command function are yet to be approved.

This squadron will use a cargo ship for the deployment of military assets, such as weapons, vehicles, military personnel, and supplies, in order to enhance a state's ability to project power. This ship falls into the 'dry cargo freighters' and 'passengers or troop ships' categories. During joint operations, the squadron may transport equipment and supplies required to conduct and sustain the operation. The ship will carry personnel to the theatre and if necessary, conduct the evacuation of non-combatants for those in need of medical aid.

The squadron is a potential target that an adversary may wish to attack in order to achieve their mission. During war time, this squadron must be protected by other warships due to its speed limitation, maneuverability and weapon capability. The method of deployment for the MPCSS Squadron will be governed by their capabilities and limitations. When utilized under the RMN Fleet's concept of operations (as stipulated in P.O.A. Article 401), this squadron is essentially supporting the RMN's



PASKAL deployment from the ship.

strategy of sealift and logistic support.

During peacetime, 31st MPCSS Squadron will carry out surveillance and intelligence, support other Malaysian Government Agencies, and participate in Bilateral and Five Power Defense Arrangement (FPDA) exercises. During war time, MPCSS can be a Command Platform and Multi-Purpose Support Ship, conduct surveillance, mobile support and sealift, seaward defence, and amphibious support as it has a car deck which can be used for landing support.

Based on the design features and capabilities, this ship plays a very important role in providing assistance and logistics for other ships involved in operations and exercises. Additionally, the ship will also serve as a platform for delivery of logistics and spare parts to all Navy Marine Region Headquarters. To accomplish an allocated mission, careful planning is required between aircraft and ground logistics units.

So that effective assistance is provided in a timely and efficient manner, inland logistics units that require additional logistics need to plan well in advance.

Sea Basing

Sea basing is a naval capability to conduct selected functions and tasks at sea without reliance on infrastructure ashore. Sea basing can sustain large military forces during operations at large distances from traditional logistics centers. Sea-basing system entails deployment of military assets in the middle of the ocean to rapidly conduct operations in the coastal waters off Sabah.

The requirement for afloat forces to provide seamless support to the task force during the period in which its logistics system is primarily sea based, has a significant influence on logistics planning for the operations. Like all logistics systems, the task force logistics systems must be responsive, simple, flexible, economical, attainable, sustainable and survivable. Development of effective logistics



Fast roping from RMN Super Lynx.

systems must be considered during the operational planning process.

The concept of sea basing was started by the Minister of Defense based on the lessons learned in the Lahad Datu invasion by the Army of the Sultanate of Sulu in February 2013. This incident was a significant turning point in the concept of sea basing. Sea basing was introduced as a counter-resistance measure.

The main objective of sea basing is to support Joint Task Force Headquarters 2 (Mk ATB 2), patrol ships and all Allies, including commando, maritime agencies, and police marine, who are involved in the operation. It is consistent with the Strategy National Blue Ocean which was announced by the *Polis Di Raja Malaysia* (PDRM).

The second point is to implement resistance to combat terrorist aggression including preventing, detecting, denial and response. Activities in this area focus on the motivations of individuals who engage in, or have the potential to engage in, terrorist activity at home and abroad. The emphasis will be on addressing the factors that may motivate individuals to engage in terrorist activities. This element focuses on identifying terrorists, terrorist organizations and their supporters, their capabilities and the nature of their plans. This is done through investigation, intelligence operations, and analysis, which can also lead to criminal prosecutions. Strong intelligence capabilities and a solid understanding of the changing threat environment is key. This involves extensive collaboration and information sharing with domestic and international partners.

The final critical task of sea basing is to maximise intelligence collection. Intelligence and law enforcement actions can deny terrorists the means and opportunities to pursue terrorist activities. This involves mitigating vulnerabilities and aggressively intervening in terrorist planning, including prosecuting individuals involved in terrorist related criminal activities.



Arial view of KD SRI INDERA SAKTI.

Conclusion

In conclusion, KD SRI INDERA SAKTI is one of the best assets available to carry out the sea basing operation. Defence of the nation is a critical responsibility to ensure peace by deterring and preventing intrusions of foreign elements. However, the task is not an easy one, and is something we as a military need to understand, resource and support. **CTM**

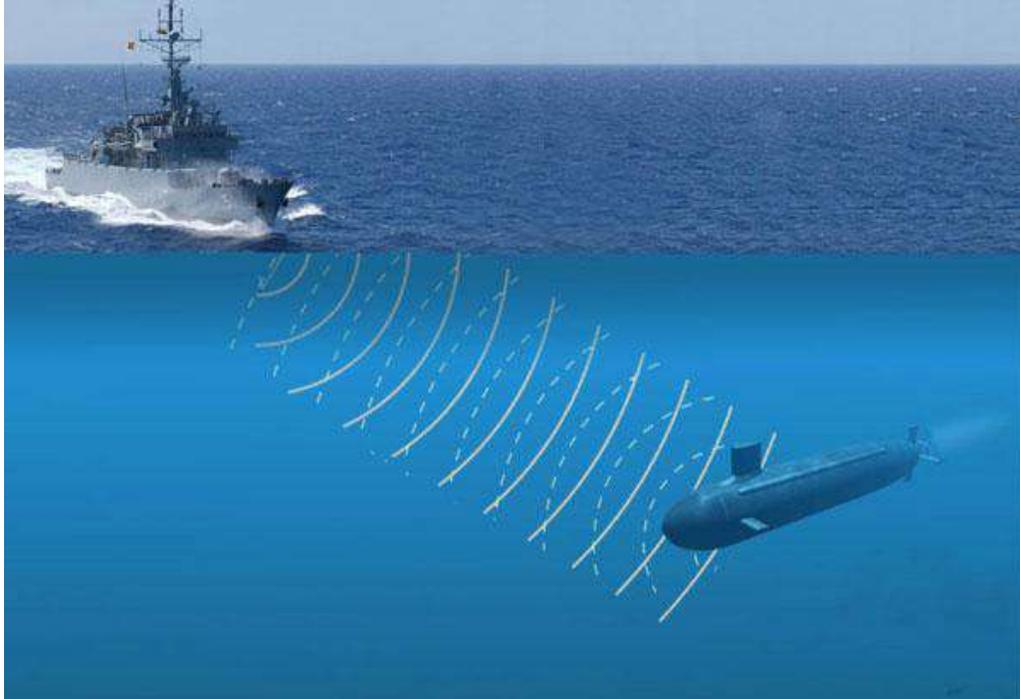
About Author



Sub Lieutenant Muhammad Faiz Bin Musa RMN joined the Royal Malaysian Navy in 2nd of June 2010. He was served in KD YU and KD SRI INDERA SAKTI during his training. He had just completed in Graduate Application Course 7/14 in last April and now his first compliment at KD MAHAWANGSA. This young officer has just started his career in RMN and hope to gain the supreme experience in the ocean.

Sonar Prediction Performance Systems: An Aid for Underwater Detection

Lt Cdr Mohd Syamir Mohamad Shokri RMN



SPPS is the abbreviation for Sonar Performance Prediction System, that was introduced in the RMN in 2006, and began support in 2007. SPPS uses the WADER 32 system, which was developed by Ocean Acoustic Developments Ltd, in the United Kingdom.

WADER32 System

WADER32 is a sonar range prediction and Global Ocean Information System (GOIS) which uses global environmental data (sea state, water column and bathymetry), together with user-supplied acoustic parameters, to generate propagation loss data & calculate probability of detection. Designed for operational users of all abilities, the propagation loss data is generated in real time in an easily understood graphical form. This can be used as bitmaps for briefings, exported in text format for further processing or in GeoTIFF for overlay on GIS systems.

WADER32 procedures can be carried out either manually or automatically to ensure accurate sonar performance prediction. For example, both users and shore side support staff may define the sonar database, thus speeding up the process and reducing the likelihood of input errors.

The system is sufficiently robust and reliable enough to enable use by a less experienced operator, while still allowing an experienced professional to take advantage of more advanced features without significantly increasing the workload or complexity.

This system provides 2D and 360 degree probability of detection and tactical display in order to maximise the operator analysis of sonar performance

Essentially, the user only needs to know their position or

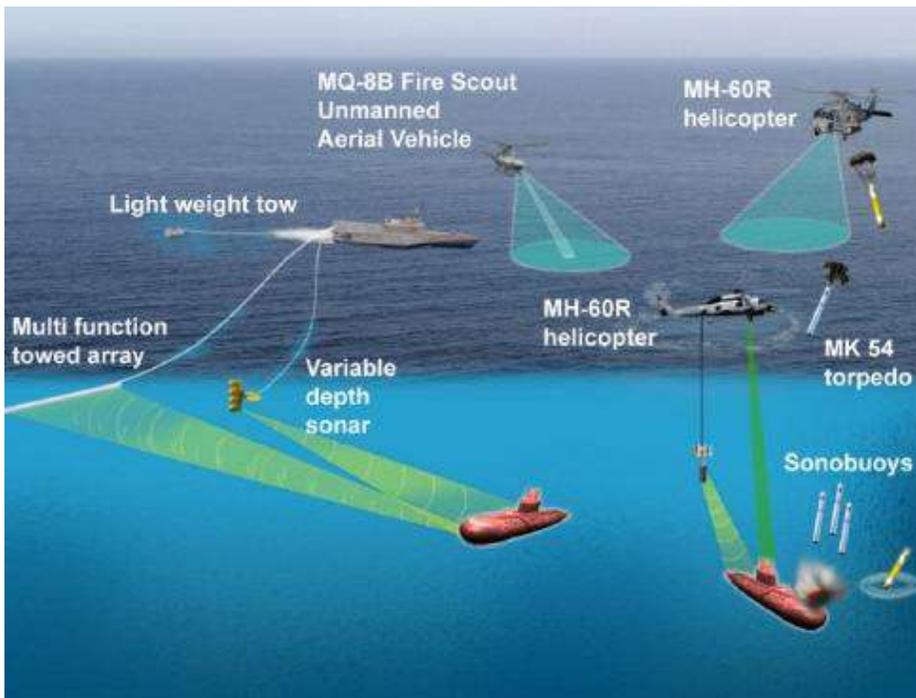
location, type of sonar, and target type and depth, so that a range prediction can be produced quickly and easily. The process is rapid, reliable and simple. A range prediction can usually be created in a few seconds when conducted by a competent user.

WADER32 was developed over 20 years ago and the Graphical User Interface (GUI) is the result of Ocean Acoustic Developments Ltd design effort and substantial feedback from informed users in the military and civilian research communities. WADER32 is aimed at operational users and environments where it is advantageous to shield the users from the complexities of underwater acoustics and underwater acoustic modeling.

Applications include research, training, teaching about environmental effects on submarine sonar, operational range prediction, underwater warfare, anti-submarine warfare (ASW) and post-mission acoustic analysis.

SPPS WADER32 Features

The WADER32 provides a Global environmental database with Multi-plot function for multiple range predictions on one screen. It also has dedicated low and high frequency



Anti Submarine Warfare package overview.

models working in unison that give operators comparison analysis of the frequency choosing. WADER32 is embedded with a built in Figure of Merit (FOM) calculator to make the task of FOM production as easy and error free as possible. It also has multiple choices of display palletete to make an easy recognition for operators to select the chart type. Operators can obtain spot data and separate spot depth function to get instant oceanographic information. WADER32 has varieties of chart and profile displays and a very user friendly interface. Pre-programmed training sonar database can be set for operator training and can be conducted at differing levels of competency. This system provides 2D and 360 degree probability of detection and tactical display in order to maximise the operator analysis of sonar performance.

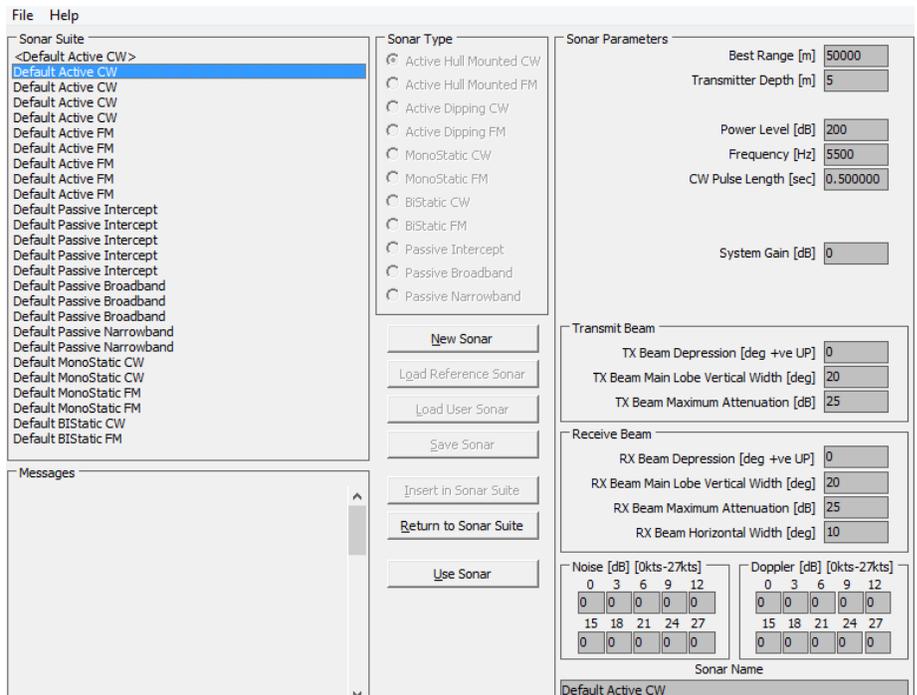
The Sonar Editor is where users define detailed parameters for their own and other sonar systems. A full range of parameters can be defined from basic source levels to transducer beam parameters (depression, width and side lobe level). This is where the accuracy of performance prediction can be

increased by having accurate technical data. This data can be supplied by the user at run time or by shore side support staff in advance. WADER32 is provided with a dedicated storage area which the program code will always treat as 'read only' so that baseline data cannot be corrupted. SPUTS (Sonar Parameters for Unclassified Training Scenarios) are a set of fictitious

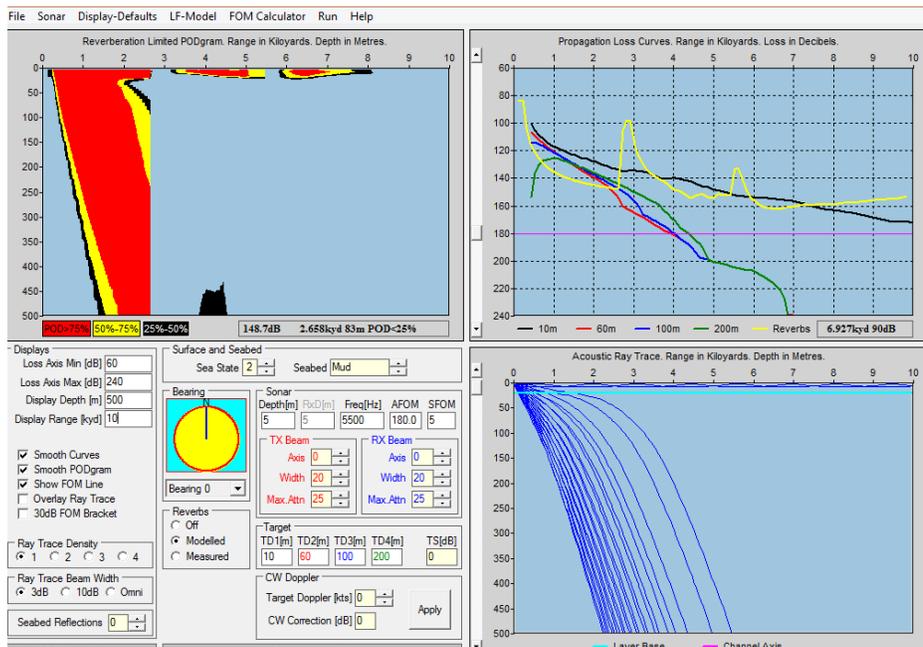
sonars which WADER32 is supplied with that behave like their real counterparts and can be used for training.

The analysis screen is a vital step in the range prediction process. It displays the results obtained from running the propagation and reverberation loss models using the data supplied in the Sonar Editor, Main Screen and Environment Screen. After this step, the system will show the Probability of Detection diagram (PODgram) which provides a colour coded summary of sonar ranges against targets at different depths. Ranges are presented as percentage of Probability of Detection - 25%, 50% and 75%. This is the important part where the operator can analyse and determine Predicted Sonar Range (PSR) for a particular ship at the particular area and with variety of sonar settings. Thus the Tactical Sonar Range (TSR) for tactical ASW can be calculated.

WADER32 also provide the propagation and reverberation loss curves for up to four target depths that can be determined by operator.



Sonar Editor for operator to fill according to the technical data of own ship sonar.



The Analysis Screen includes Reverberation Limited PODgram (shows Sonar Detection Range and Performance Prediction), Propagation Loss Curves Diagram, Displays Option, Surface and Seabed, Sonar and Target Modification Options and Acoustic Ray Trace.

The use of reverberation loss curves is a unique WADER32 feature and allows a direct comparison between received propagation loss and reverberation that allows the operator to analyse.

Operators can modify a range of parameters such as frequency, target depths, sonar depths, sea state and beam patterns. In addition, the effect of reverberation may be evaluated by turning the reverberation module off. The acoustic ray trace (with separate traces for the transmitter and receiver) can be shown in this system. These can be used to change the transmitter and receiver depths and produce a real time ray trace update. This allows the operator to change the depth of the transmitter to get the best depth for detection complying with the Sonic Layer Depth for Variable Depth Sonar (VDS). The result, when combined with the layer depth and channel markers, provides a powerful tool in both

operational and teaching environments.

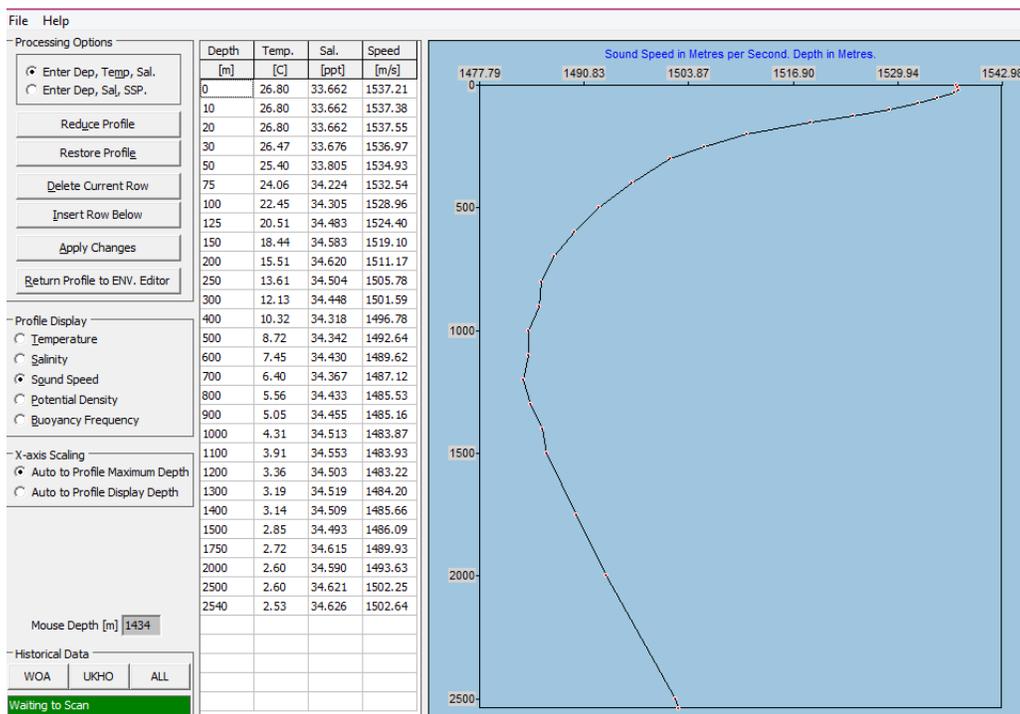
The Importance of SPSS in Underwater Operations

In ASW and mine hunting, it is essential for the operator to predict the sonar performance by SPSS to

determine the Predicted Sonar Range. This is very important to have Pre-Mission Planning by getting all related information to know our underwater detection performance in relation to the environment. WADER32 can help the Commander to determine the best position to deploy their ASW assets with regards to the environment by maximizing their sonar capability.

Future Plan

The RMN currently has 35 WADER32 laptops for various purpose. Every ship that has an underwater detection system (such as frigate, corvette, MCMV, and submarines), has a WADER 32 laptop. While shore establishments use this system for operational planning and training (such as HQ FC, HQ DMW, KDSI I and KD PELANDOK), PUSTAKMAR also has local WADER32 instructors among its officers to ensure the continuity of training and effective use of the systems, not only relying on outsourced trainers. Since 2010, over 100 officers and enlisted personnel have attended Basic,



Profile Editor can be used to measure accurate Sound Velocity Profile using real time or in-situ sea temperature, salinity and/or depth data information.

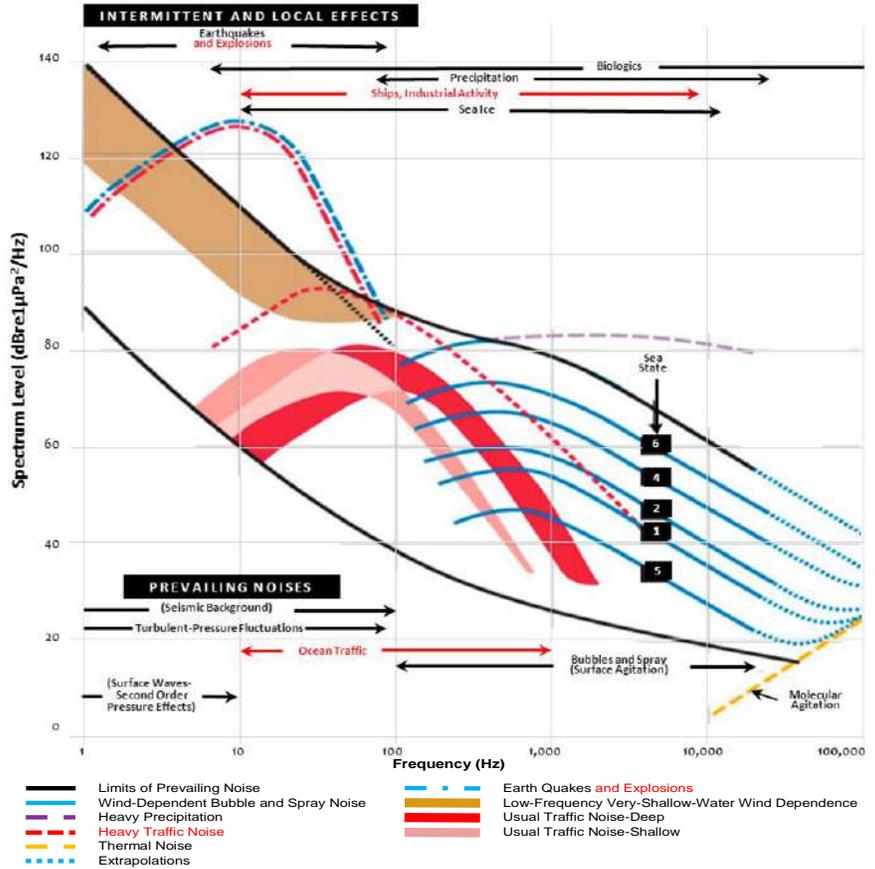


Author in his action to drop Expendable Mobile ASW Training Target (EMATT) for ASW Exercise during his tour as ASW Officer onboard KD LEKIU.

Intermediate and Advanced course for WADER32 System conducted by PUSTAKMAR. This number is always increasing. PUSTAKMAR has forecast to have officers qualified in WADER32 Train the Trainer course in order to maximise the use of this system in underwater operations. Basic, Intermediate and Advance WADER 32, as well as Train the Trainer course, are planned to commence in April 2016.

Conclusion

The usage of WADER 32 system for underwater operations is still at the minimum level, especially in the surface force. Principle Warfare Officers need to demand the information and increased awareness of the SPPS. Good planning for underwater ops/training can ensure effectiveness for underwater detection and determine the success of the underwater warfare. **CTM**



The Wenz Curve is use to determine Ambient Noise cause by various environmental factors.

About Author



Lt Kdr Mohd Syamir bin Mohamad Shokri RMN joined the Royal Malaysian Navy in 27 Mar 2003 (UPNM 9). His present appointment is the Anti Submarine Warfare (Training) Officer at PUSTAKMAR. He has served in various units, including being appointed twice as the Anti Submarine Warfare Officer of KD LEKIU. He was also appointed as ASW Instructor in KD SULTAN IDRIS I between 2012-15. He attended Principal Warfare Officer Course in 2010 and had an opportunity to attend Anti Submarine Warfare Course in INS Venduruthy, India in 2011.

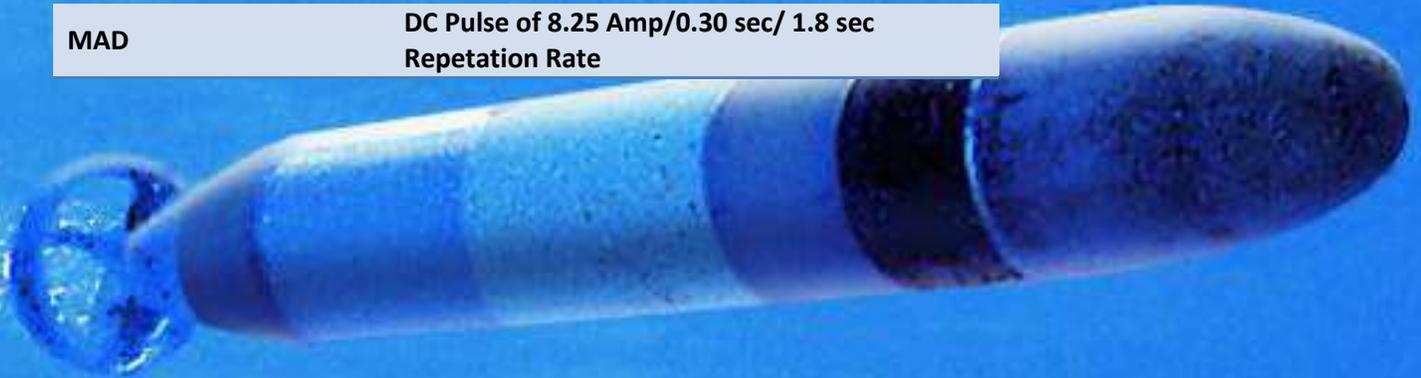
Mk39 Expendable Mobile ASW Training Target and Field Programmability System (EMATT)

A Small, Dynamic Submarine-Like Target



EMATT Mk 39

Length	915mm
Diameter	124mm
Weight	Approx 10 Kg
Bouyancy	Approx 0.91Kg Negative
Speed	3-8 Knots (less 1 Knot with MAD deployed) (minimum 5 Knots with MAD deployed)
Endurance	3-6 Hours (speed/tonal dependent)
Operating Limit (Depth)	23-183 Meters
Power Source	Lithium –Sulfur Dioxide Cells
Course Control	Preprogrammed Microprocessor/ Fluxgate Compass/Bang-Bang Control
Acoustics	Active: Echo Repeat 3.0 KHz to 13.5 KHz Passive: 450, 600, 720, 900Hz, amplitude selectable
MAD	DC Pulse of 8.25 Amp/0.30 sec/ 1.8 sec Repetition Rate



Project 877 Paltus

A series of Russian-made diesel-electric submarines

Design	Rubin design bureau
Production	1982–2000
NATO classification	Kilo class
Total built	44

Project 877EKM is an export version of Kilo-class submarines. A total of 18 subs have been delivered to Iran, China, India, Poland, Romania and Algeria. INS Sindhurakshak, an Indian Navy Project 877EKM sub that was handed back to India

in January 2013 after a major refit at Russia's Zvezdochka shipyard, sank in the port of Mumbai on August 14 following a fire and a series of explosions on board



Project 877EKM specifications

Length, m	73.8	Displacement (submerged)	3,076 tons	Maximum diving depth, m	250
Width, m	9.9	Speed (surfaced/submerged): knots	10/19	Endurance, days	45
Draft, m	6.2	Crew	52		

Propulsion

Diesel-electric	Main electric propulsion motor, hp	1x4050	Fuel storage capacity	172 metric tons
Two 1,500kW diesel generators	Reserve electric propulsion systems	2x102		

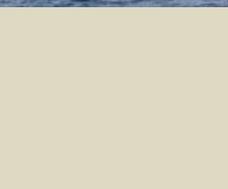
Armament

Missiles	Club-S	Torpedoes or mines	18 or 24
Six 533mm torpedo tubes		Strela-3 or Iglu surface-to-air missiles	

KILO Class submarine have very low noise emission and they have been dubbed by the US Navy as “black holes in the ocean” because they are nearly undetectable when submerged.







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