

MARITIME DOCTRINE OF SRI LANKA (MDSL)

SLN BR 1



To Nurture a Stable Environment at Sea
2020



SL NAVY



**MARITIME DOCTRINE
OF
SRI LANKA
(MDSL)**

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To Nurture a Stable Environment at Sea
2020

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First Printed : July 2020 at Naval Printing Unit, Welisara, Sri Lanka.

ISBN 978-955-9339-15-1

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First Prime Minister of Sri Lanka Rt. Hon. DS Senanayake inspecting a
Naval Guard of Honour

FOREWORD



The present context of maritime domain is changing rapidly mainly due to; high demand for energy, technological advancement, demographic shifts and globalisation. Since we are a maritime nation, the importance of the oceans remains unchanged as we are heavily depending on maritime trade and commerce.

The Maritime Doctrine of Sri Lanka (MDSL) is the Sri Lanka Navy's (SLN) capstone publication. It is a guide to understanding the unique nature of the SLN's maritime power and the way in which it can be applied in pursuit of the national interests. MDSL shapes the broad contours of employment of maritime power and how the Navy goes about nurturing a stable environment at sea. Nevertheless, it should not be taken as a set of rigid rules. Flexibility and judgement, key attributes of naval forces, should guide the practitioners while interpreting it under a given set of rules.

The Navy exists to see the security of Sri Lanka at and from the seas. Further, SLN will enhance to engage effectively in the Indian Ocean Region in coming years. Therefore, it requires a Navy with the capabilities to operate effectively with other national institutes and international navies. MDSL establishes as a guide to steer the proposed development and employment of SLN for the coming five years.

The MDSL, being first such effort in the public domain, is likely to generate understanding and lot of interest amongst the sister services, general public domain, shape opinions and be instrumental in galvanizing the maritime sector of Sri Lanka.

I commend the Doctrine Development Team in steering and developing a comprehensive Maritime Doctrine for SLN. I especially expect all naval personnel to have a clear understanding of the Doctrine. I wish the Maritime Doctrine of Sri Lanka will serve its purpose and the nation.

A handwritten signature in black ink, appearing to be 'K' followed by a stylized flourish and 'S'.

KKVPH DE SILVA, WWV & Bar, RWP, RSP, VSV, USP, ndu
Vice Admiral
COMMANDER OF THE NAVY

09 July 2020

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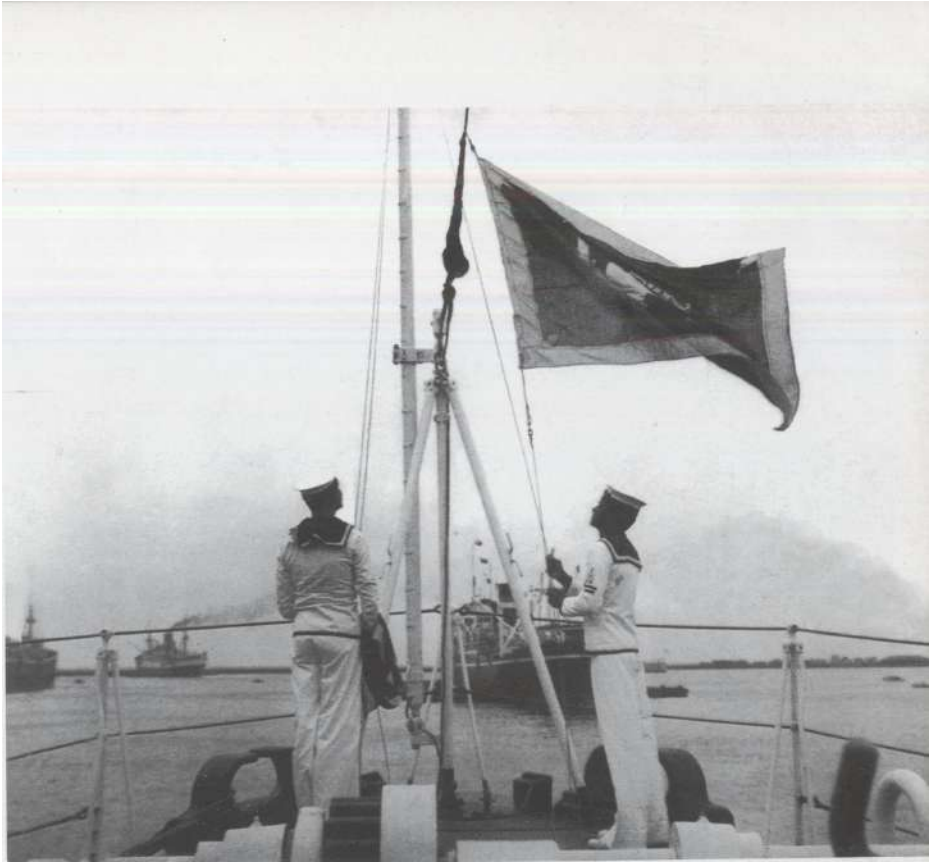
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DOCTRINE DEVELOPMENT TEAM'S INTRODUCTION

The Maritime Doctrine of Sri Lanka (MDSL) is developed to explicate as to what constitutes maritime power and why is it important for the safety, security, well-being and prosperity of Sri Lanka. However, the MDSL deals mainly with the concepts and principles of employment of Sri Lanka's naval power.

MDSL seeks to describe the importance of the sea to all Sri Lankans and sets out the Sri Lanka Navy's (SLN) unique role within. The Doctrine was compiled at the Naval Headquarters, Colombo with wide ranging inputs from serving and retired naval experts, naval institutions and studying Maritime Doctrines of several countries. Further, US Navy Warfare Publication 'Navy Planning NWP 5-01 (Edition December 2013)' and Joint Intelligence Preparation of the Operational Environment (JP 2-01.3, June 2009) were examined to compile Navy Planning (Chapter 11).

MDSL is designed to be read and understood in a logical progression. In first four Chapters, it provides the understanding of maritime doctrine, people and theoretical background to the nature of conflict and concepts of war respectively. Then it explains the geopolitical and geostrategic concerns in Indian Ocean Region in Chapter 5. In Chapter 6, at a fundamental level it explains the importance of maritime fighting power and its components; conceptual, physical and moral. Further, defines armed forces' ability to fight and achieve success in maritime operations. Principles of War are described in Chapter 7. Chapter 8 describes the vital relationship between maritime affairs and international law. Concepts and application of maritime power are described in Chapter 9. Figure 9.3 reflects the role of SLN and describes interrelationship between the three key roles of maritime forces; military, diplomatic and constabulary. Thereafter, Chapter 10 describes the ways in which structure and organisation of SLN support its ability to raise, train and sustain effective maritime force. Naval Planning is included for the better understanding and to comprehend the essence of naval planning and to achieve the operational commander's objectives in Chapter 11. Finally, Chapter 12 sets out the likely challenges and opportunities facing sea power in the future. It explores the potential implications of key technological, social and economic developments for the shape and roles of maritime forces, particularly the ways in which navies may increase their ability to directly influence events on land.



The National Flag is hoisted onboard HMCyS Vijaya - the First Commissioned Ship of Ceylon

CHAPTER 1

UNDERSTANDING MARITIME DOCTRINE

Historical Preview

Sri Lanka is a country with a rich maritime tradition spanning over 2550 years.

The ship that carried Vijaya the son of Sinhabahu (reigned in Sinhapura, a city in the present Gujarat) is said to have landed at Tambapanni on the very day of the Lord Buddha's Parinirvanaya (passing away). The Buddha, it is said, foresaw that Vijaya would convert this island into an abode of men and that Buddhism would flourish there in the future.¹

The first settlement of Indo-Aryan mariners and emigrants arrived from Northwestern India to Ceylon towards the end of 4th century BC were an agricultural community. The pioneer settlement had encouraged further waves of emigrants to follow this distance by sea which is approximately 1500 miles and none but intrepid seamen in seaworthy ships could have accomplished this succession of outward and return voyages.²

Before these settlements, these mariners who were traders would have made several voyages back and forth carrying our products or their profits which shows the expertness in seafaring, building of sea going vessels, ocean navigation and sustainability at sea and knowledge of winds and currents. Seafaring, in every aspect of its activities, was the forte of these earliest colonists of Ceylon and should have been the inherited skill of their descendants, the Sinhalese. Even in the reign of King Devanampiya Tissa (250-210 BC), it is said that these voyages up to Ganges and back had been made by the king's envoys with gifts to Mauryan Emperor, Asoka.³

In the 3rd century BC, there had been active maritime trade between the Arabs and the Indians. Then, in the 2nd century BC, the Greeks had begun to cut out the Arabs intermediaries and to make coastwise expeditions

themselves to India. A trade boom had begun with the stimulated trade between West and India. Early in the 1st century BC, the great discovery was made of the use of the monsoons to sail direct across the Indian Ocean, and Greek and Roman ships visited South Indian harbours in greater numbers.⁴

With rapidly increasing commerce between the Arabs and Romans with South India led to a struggle between the South Indians and the Sinhalese, for the mastery of the South Indian seas for Ceylon's rich export trade following which the products of Ceylon had to be transported to South Indian ports and sold to Westerners. However, about the year 125 AD, Roman ships began to sail into Ceylon harbours and to deal directly with the Sinhalese. Chinese ships were also trading direct with the Sinhalese at this time and Ceylon became eventually a significant place for trade in the Indian Ocean.⁵

Another most significant evident is the stone inscription existing at the Godawaya temple provides probably one of the oldest evidences on customs duties in the entire world. Ancient internal port had functioned from 2nd century AD to 12th century AD at Godawaya in Southern Sri Lanka near the mouth of the Walawe River. This inscription had been made by King Gajabahu I (114-136) and states that he had ordered the donation of duties collected at the port to the Godawaya Temple for its maintenance. Since then, maritime trade and commerce had been there throughout the history and development of ports and harbours had boost the economy of the country.⁶

In 1164 or 1165, King Parakramabahu I carried out an invasion of Burma. The building of the invasion fleet in the ports of Ceylon took five months. The ships were abundantly provisioned and the health of the troops amply taken care of. Physicians and nurses who accompanied the fleet were provided with medicines of every kind preserved in cow horns and special surgical instruments for extracting arrow heads. The expedition set sail from the port of Palvakki on the Northeast coast. It was commanded by the Damiladhikarin Adicca, his deputy being the Nagaragiri Kitty. King Parakramabahu's next military undertaking across the seas was the invasion of the South Indian kingdom of Pandya.⁷

Two well-known travellers who visited Ceylon after the fall of the Polonnaruwa kingdom were Marco Polo (1233) and Ibn Batuta (1344). The greatest of the Ceylon ports was Mahatittha (Mantai). The other important ports of early time were Gokanna (Trincomalee), Sukaratittha or Huratota (Kayts), Tambapanni (near the mouth of the Aruvi Aru) and Uavela (at the mouth of Kala Oya). When close ties were established between the Malays and Sinhalese, the ports on the South and East coasts, particularly Waligama and Trincomalee, were much used. It was not till about the tenth century that Galle and Colombo came into prominence.⁸

Ceylon was renowned among many countries as a famed destination for trade along the silk route of the Asian continent as well as in the Indian Ocean. Being a trading hub in the past, Sri Lanka had prospered on trade in a variety of products such as spices, gems, pearl and ivory. One of the classic examples for Sri Lanka for being as a maritime hub in the Indian Ocean is that; China had long history on sailing into the Indian Ocean for trade, commercial and diplomatic missions. In the early 1400, China had dispatched seven large diplomatic naval expeditions to the Indian Ocean led by the legendary Admiral Zheng He, who sailed as far as the Persian Gulf, the Red Sea and East Africa with nearly 300 battle ships and 27000 men on board. Admiral Zheng He, had been a true friend of Sri Lanka and visited the country nearly six times during 1405 to 1433. Therefore, historically it is evident that the China has had close ties with the Indian Ocean Region for peaceful coexistence.

The first Europeans to visit Sri Lanka were the Portuguese, who sent the explorer named Lourenco de Almeida, in year 1505. He found the island separated into three different kingdoms, each controlled by a king.

The Portuguese found a port in the area of Colombo and expanded their control throughout the country in 1517. The outcome was that the Sinhalese moved their capital to Kandy to prevent further attacks. Nevertheless, inland warfare continued throughout the 16th century under Portuguese control.

The Dutch went on to fight the Dutch–Portuguese War, which resulted in the Dutch victory. This war occurred because the King of Kandy invited the Dutch to get rid of the Portuguese. Dutch rule in Sri Lanka was done through the Dutch East India Company, a trading company established in 1602 primarily to protect Dutch trade benefits in the Indian Ocean. Although the Dutch first controlled only the coastal lands, the Dutch gradually pushed inland, occupying considerable territory in Southern, Southwestern and Western Sri Lanka. In 1665, they extended to the East coast and thus controlled most of the cinnamon-growing lands and the points of exit and entry on the island.

During the well-known Napoleonic Wars, fearing the French's control of the Netherlands would mean that Sri Lanka would be a French country, the British took over the country in 1796, automatically naming 'Zeylan' to 'Ceylon'. In 1802, by the Treaty of Amiens, which temporarily ended hostilities between the French Republic and the United Kingdom during the French Revolutionary Wars, the Dutch part of the island was bestowed to the British, which then the island became an official crown British colony. In 1803, the British invaded the Kingdom of Kandy in the 1st war of Kandyan War. In 1815, the 2nd Kandyan War resulted in Sri Lanka ending of the independence.

Due to fears of impending war increased the idea of establishing a Volunteer Naval Force emerged. As a result, Navy created for Ceylon and manned by residents of the country, came into being in 1937. In 1937 the Ceylon Naval Volunteer Force (CNVF) was established by CNVF Ordinance No. 1 of 1937. After World War II, CNVF was absorbed into the Royal Navy as, Ceylon Royal Naval Volunteer Reserve (CRNVR). After gaining independence from British rule, a nucleus of 100 officers and men were ready to form the Regular Navy. On 09th December 1950 the Navy Act was enacted (Act No. 34 of 1950) and the Royal Ceylon Navy was formed. In 1972, with the introduction of new constitution the Royal Ceylon Navy was renamed as the Sri Lanka Navy.

The CNVF/CRNVR had originally been conceived as a mainly sea-going force to be deployed in territorial waters only. However, bigger ships joined the fleet, CRNVR ships and men being deployed beyond Ceylon's

territorial waters. It was envisaged peacetime duties of the colonial naval forces mainly would be;⁹

- Coast Guard and customs controls.
- Fisheries protection.
- Port and harbour services.
- Inland water transport.
- Surveying.
- Air-sea rescue.
- Transport of troops to neighbouring islands.
- Keeping the white ensign flying.

The Royal Navy Harbour Tugs had served as training ships in pre-war days and continued to serve CRNVR as commissioned ships after 1938. HMS Flying Fish, a Canadian built 'Algerine' class ocean minesweeper was acquired by Ceylon in 1949 as the Royal Ceylon Navy's first ship. The vessel was officially transferred to the CRNVR. HMS Flying Fish was commissioned as HMCyS Vijaya. Rt. Hon. DS Senanayake, first Ceylonese Prime Minister received the vessel on behalf of the Government of Ceylon.¹⁰

What is Doctrine?

The word 'doctrine' has originated and derived from the Latin word 'doctrina', which implies 'a set of beliefs', 'particular principles' or 'a body of teachings'. It is also referred to as 'a belief or a system of beliefs accepted as authoritative by a group or party'. It thus serves as guidance for shared understanding, provides a framework of beliefs and teachings that guide a group in its actions.

What is Military Doctrine?

NATO defines doctrine as, 'fundamental principles by which military forces guide their actions in support of objectives. It is authoritative but requires judgment in application.' Essentially, military doctrine guides our armed forces on how to conduct themselves on operations. It is also a body of professional knowledge and a common basis for understanding the nature and conduct of armed conflict.

The Purpose of Maritime Doctrine

Military doctrine is based on in depth analysis and comprehensive understanding of the history of human conflict and military experience.

Maritime doctrine is that component of military doctrine which endures the employment of armed forces at and from the sea. It is derived from the hard won experience of those who have gone and involved in action before. This publication, Maritime Doctrine of Sri Lanka (SLN BR 1), explains the key concepts for the conduct of successful maritime operations. At a fundamental level it explains why Sri Lanka has a Navy.

The Need of Maritime Doctrine

The need for a Maritime Doctrine of Sri Lanka (MDSL) was felt to facilitate:

- All Naval personnel to be conversant and have a sound understanding of basic principles on which the use of maritime forces depend and shared way of thinking.
- Officers and men of the Sri Lanka Army and Sri Lanka Air Force to have an understanding and to better estimate the maritime component of the broader military strategy.
- Better cooperation and coordination with the friendly Navies and alliances/coalition partners.
- Maritime awareness among the people of Sri Lanka so that the greater maritime potential of our nation with rich maritime history can be fully exploited and harnessed.
- Academic, Research Institutions as well as interested members of the general public to obtain an insight into the details of the maritime environment in which maritime forces function.
- Vital familiarity of the international audience with maritime thinking of Sri Lanka.

Benefits of Doctrine

A doctrine will provide following main benefits:

- Common approach.
- Collective action.
- Consistent behaviour.
- Individual initiatives.

Doctrinal Characteristics

Level of doctrine	Scope	Method of adoption	Output	Effect
High-level (strategic)	Describe what you think about (philosophy) and how to think (principles)	Educate and Assimilate	Common framework of understanding A way (not the way) of approaching a problem	External influence
Theatre-level (operational)				Guidance A basic for initiative
Low-level (tactical)	Prescribe what to do (practice) and how to do it (procedures)	Train and Practise	Propagate best practice	Effective conformity
		Standard language and process	Common plane of thought	Synergy

Figure 1.1 – Military Doctrinal Characteristics

How we intend to use our doctrine, and who will use it, defines what it is. The high-level (strategic) approach to military operations cascades down to detailed (tactical) procedures required by units and individuals, with (operational-level) principles and practices linking the two. Figure 1.1 shows the military doctrinal characteristics.¹¹

Doctrine within the hierarchy is mutually supportive, so few publications can be read in isolation. Higher levels of doctrine establish the philosophy and principles underpinning the approach to conflict and military

activity. Such doctrine provides a framework to understand the military instrument and a basis for its practical application. The lower levels of doctrine, which are broader, describe the practices and procedures for that practical application, some of which are also defined by the theatre in which they apply.

Within Strategic, Operational and Tactical levels, doctrine can be further subdivided as follows:¹²

- **Functional Doctrine.** It describes a joint approach and is set at the operational level. Supporting publications provide additional details for each area of functional doctrine.
- **Thematic Doctrine.** Thematic doctrine operationalises functional doctrine within a specific context or for a particular contingency.
- **Environmental Doctrine.** Environmental doctrine draws on functional and thematic doctrine that is specific to the maritime, land, air, space, information (including cyberspace) and electromagnetic environments.

Maritime Power, Strategy and Doctrine

Maritime power is the ability of a nation to use the seas to safeguard and progress its national interests. As such, it is a pillar of national security policy and is a key enabler in the formulation and implementation of viable national and military strategies.

Maritime strategy is the plan by which the maritime power of a state is developed and used for attaining the national objectives, within the sphere of the national strategy.

Maritime Doctrine offers the conceptual framework for formulating such a plan or strategy, pursuing to develop and employ maritime power in pursuit of national security objectives and interests.

‘Maritime’ is an all-encompassing word, including everything that is associated to the seas. The Maritime Doctrine of Sri Lanka, conversely, deals mainly with the concepts and principles of employment of Sri Lanka’s naval power.

Navy and Maritime Doctrine

The Navy is the main instrument and manifestation of the maritime power of a nation-state. The reason Navy to exist is to safeguard the nation's use of the seas for its legitimate sovereign purposes, whilst concurrently guarding against unfriendly use of the sea by others. Maritime Doctrine, therefore, focuses on that dimension of maritime power, which facilitates and enables use of the seas by all stake holders.

National Security Concepts and Military Doctrine



Figure 1.2 – National Security Concepts and Doctrines¹³

National values evolve from a nation's, history and culture. The national aim of Sri Lanka is derived and explained from the Constitution of Democratic Socialist Republic of Sri Lanka and amplified through political directions. The combination of national values and national aim gives shape to National Interests which in turn determine the National Security Objectives.

National Security Policy is formulated by viewing the national security objectives and the components of national power in the domestic and global environment both prevailing and predicted. It provides the policy guidelines development of strategies in the exercise of national power.

National Strategy is the plan for employment of various tools and instruments of national power in accordance with the national security policy, to achieve the desired national security objectives in support of national interests.

National Values

Democratic Socialist Republic of Sri Lanka recognises Freedom, Equality, Justice and fundamental Human Rights as core national values based on the constitution.

National Aim and Interests

National Aim

National aim provides the basis for defining national interests. Sri Lanka's national aim is derived from the Constitution, is the 'creation and preservation of a just and free society guaranteeing the dignity and wellbeing of succeeding generations, with unhindered economic progress, social and cultural order attained, the unity of the country restored and concord established with other nations.'

National Interests

Sri Lanka's national interests are expressed in the Preamble to the Constitution. These are summarised as follows:

- Sovereignty and territorial integrity of the Democratic Socialist Republic of Sri Lanka.
- Democratic, secular and unitary character.
- Secure and resilient Sri Lanka.
- Economic and socio-cultural wellbeing of the nation and its citizens.

National Security Objectives and Policy

National Security Objectives

These flow from the national interests, and may be summarised as follows:

- Protecting and preserving sovereignty and territorial integrity of Sri Lanka.
- Ensuring public safety, security and crisis response.
- Protecting lines of communication.
- Pursuit for sustaining economic prosperity.
- Strengthening partnerships and relations for regional, and international security and stability.
- Upholding democratic institutions and progression of good governance, preserving national values.
- Protecting, managing, preservation and development of natural and physical environment, and national heritage sites.
- Prevention of negative domestic developments and events that could affect communal harmony and co-existence of diverse groups of Sri Lanka.

National Security Policy

National Security Policy (NSP) of Democratic Socialist Republic of Sri Lanka intends to secure sovereignty and territorial integrity of the country, rights of the people and smooth functioning of the democratically elected government, whilst upholding the national values.

National Security Strategy

National Security Strategy (NSS) is creating and orchestrating the instruments of national power in support of National Security Policy objectives. The NSS provides the essence for further development of the Joint Military Strategy, with constituent Land, Maritime and Air Strategies underpinned by the Land, Maritime and Air Doctrines.

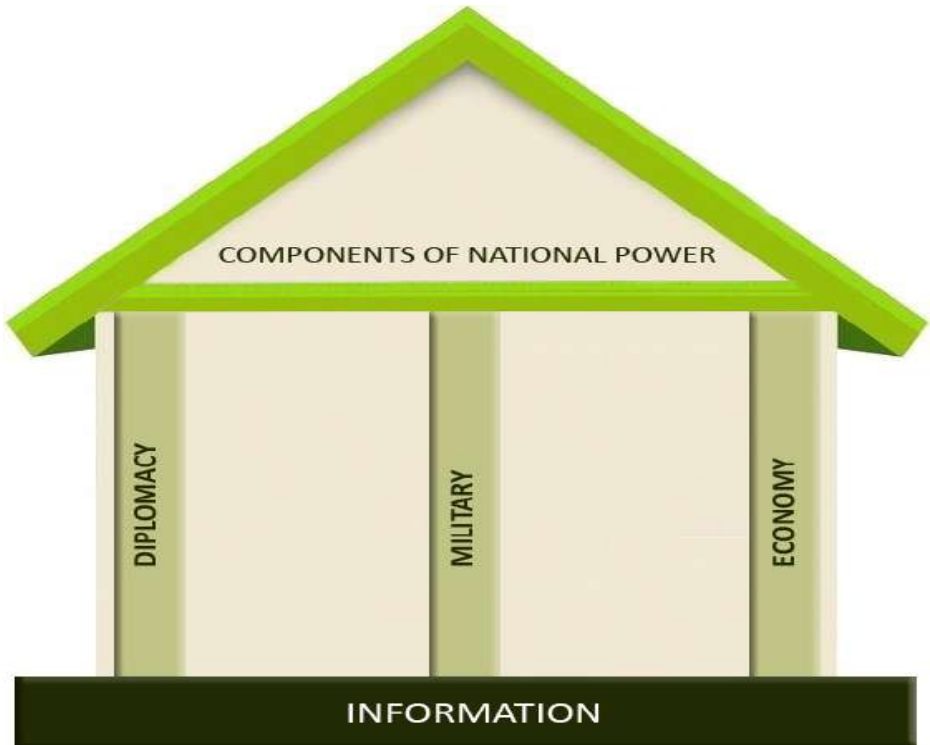


Figure 1.3 – Components of National Power

Maritime and Naval Strategy

A maritime strategy comprehends naval strategy but is broader in nature. Maritime strategy is creating and orchestrating the elements of sea power in the spectrum of conflict (peace and war) to achieve national maritime policy objectives.

A naval strategy deals mainly with the development and employment of naval forces. It is the planning and conduct of war at sea, the naval equivalent of military strategy on land.

Maritime Doctrine of Sri Lanka (MDSL)

MDSL recognises the different levels at which decisions are made and at which operations are conducted. These levels include the Grand Strategic, Military Strategic, Operational and Tactical. MDSL promulgates Maritime Doctrine at the Military Strategic level but in so doing also deliberates relevant facets of the operational level.

Throughout the MDSL, much emphasis is placed upon ways in which naval forces conduct operations at sea and from the sea whilst enable operations ashore. One of the most important features in the Doctrine is the prominence given to the absolute dependence of SLN capability upon the people who serve and support SLN.

CHAPTER 2

THE HUMAN FACTOR

Vision and Mission

The Vision of SLN is ‘To develop into a naval force capable of countering Brown, Green and Blue water¹⁴ challenges with a formidable force structure to achieve National Security Objectives and safeguard Sri Lanka’s Maritime Interests.’

The Maritime Doctrine of Sri Lanka takes its cue from vision statement of SLN and restructured the mission statement as ‘To maintain, train and equip a combat ready naval force capable of achieving National Security Objectives and safeguard Sri Lanka’s Maritime Interests whilst nurturing a stable environment at sea.’

In order to successfully carryout this mission, SLN maintains capability to perform following key functions:

- Conduct of prompt and sustained operations at sea.
- Provide the afloat forces for sealift.
- Provide/obtain air support essential for naval operations.
- Provide naval forces for the conduct of amphibious operations.
- Interdict enemy capabilities through operations at sea.
- Conduct/obtain close air and naval support for land operations.
- Organise, train, equip and provide forces for surveillance and reconnaissance, protection of shipping and mitigate traditional and non-traditional threats.

Ethos

The Navy is developed, organised, trained and supported to deliver combat power at and from the sea in line with SLN’s vision and mission.

Its character is that of a professional fighting force with rich naval traditions and a proud maritime history. Our ethos are the enduring spirit derived from our people's loyalty to their ship, unit or team sustained by high professional standards and strong leadership, that gives us courage in adversary and the determination to fight and win. This ethos might also be summarised as the drive to achieve professional mastery at sea. Essentially, the SLN's professional mastery, together with that of the other two sister Services namely Sri Lanka Army and Sri Lanka Air Force is the critical foundation on which all joint operations are based. Therefore equally, it is incumbent on members of SLN to understand the ethos of land and air forces that may fight with a maritime force.

SLN is a fighting force with a desirable and sound record of operational success during both peace and war. While capable platforms, weapons and sensors are significant, success mainly depends on the moral component and the ethos that underpins naval personnel will to fight and win.

SLN also needs to balance the maintenance of its combat preparedness with the many essential and often conflicting, requirements of enlistment and retention, education and training, peacetime operations and activities, sustainability and future capability development. The successful fulfilment of every one of these elements depends absolutely upon, comprehensive and thoroughly understood 'Maritime Doctrine of Sri Lanka'.

People

"Wars may be fought with weapons, but they are won by men. It is the spirit of the man who follow and of the man who leads, that gain, victory."

General George Patton

It is not merely the ships and craft, weaponry onboard and technology which give the SLN its capability, but the way that these elements are employed. It is therefore naval personnel who generate the real

capabilities that surface ships and support organisations represent. Naval personnel, both uniformed and civilian are thus the most important factor for maintaining the productivity of the Navy. SLN has a considerable history of operational achievements and excellence which provides a firm substance for its modern activities and future progress. However, this foundation is one that can swiftly be diminished if we do not give priority to the entire naval family.

Life at Sea

“A smooth sea never made a skillful sailor.”

Franklin D. Roosevelt

The maritime environment is undistinguished, strenuous and challenging. Forms of life during peacetime exercises differ little from those during hostilities. Historically, maritime warfare has been characterised by long periods of surveillance and search followed by short eruptions of intense combat. It is inherently dangerous and it is the notion of the uncompromising sea as the mariner’s first and common adversary which underlies the sense of fellowship experienced by sailors around the world. In consequence, all seafarers must be constantly alert to the possibility of emergencies and the unforeseen events. Even in harbour, ships still require substantial level of monitoring to ensure their physical integrity and security.

Peacetime operations require virtually the same degree of commitment and effort, and are similarly demanding and relentless. Even the biggest ships are relatively confined and all living within are subject to the continuous effects of weather and sea state. Constant monitoring of work practices is essential to reduce and manage the risks associated with fatigue.

Discipline

It follows from the nature of life at sea that naval discipline is as much self-discipline as it is externally imposed. There are occasions on which orders need to be obeyed instantly and without question, but the key elements of naval discipline are cooperation and teamwork. Naval

discipline at its best is the result of a clear understanding of the code of behaviour required in a war fighting and seagoing service. It provides the framework by which personnel can operate effectively under the strain, shock and fear of maritime combat.

Good discipline cannot be turned on and off; it must be applied consistently and is essential for war fighting. During periods of danger, good discipline is a powerful antidote for fear and along with loyalty and trust, it helps to hold a team together when threatened. The best type of discipline is self-discipline. This comes from a sense of commitment and the readiness to put the needs of others and the mission ahead of self-interest.

Morale

Morale may be understood as the state of mind of a group of people as reflected by their behaviour under all conditions. Although it is a collective quality, in developing morale it is necessary to start with the individual as the way to stabilise the group. The creation of high morale depends upon a way of life. Naval training must focus on the development of the qualities needed to create a spirit which, sustained by professional mastery and leadership.

The maintenance of good morale is one of the principles of war. It is based on recognition of the needs of the individuals who collectively form the team and it manifests itself in the will to win. Morale promotes the offensive spirit and determination to achieve the aim. Good morale is based on: a shared sense of purpose; clear understanding of, and belief in, the aim; discipline and self-respect; confidence in equipment; training; and well merited mutual trust and respect between those in and under command.

Leadership

“Duty is the great business of a sea officer; all private considerations must give way to it, however painful it may be.”

Admiral Lord Nelson

Military leadership is the projection of personality and character to get subordinates to do what is required of them and to engender within them the confidence that breeds initiative and the acceptance of risk and responsibility. Born leaders are rare, but leadership potential can be developed by training, experience, study of the methods of great leaders in the past and a sound knowledge of the military profession. Through these, individuals develop their own style of leadership and will necessarily lead in exactly the same way.

The exercise of leadership at sea reflects the unique nature of the environment. The focus at sea is on the effort of the entire crew to place the combat instrument, which is the ship, into the control of the directing mind of the commander. No shell is fired and no missile can be launched without specific command direction. With very few exceptions this applies even in the most intense of combat situations and it is never widely delegated. By contrast, the infantry commander must lead their soldiers as individuals to make their singular contributions to the combat effort in accordance with their intent. Likewise the air commander must rely on each of their pilots to complete the mission allocated. It is a fair generalisation to say that the aim of leadership at sea is the moulding of the ship's company and their ship as a fighting instrument, while on land and in the air leadership is focused on the individual as a fighting instrument. Notwithstanding the push towards greater automation, there remain many physically demanding activities in seagoing units.

Leadership starts with self-discipline. It is a continuous process throughout training and daily life. Leaders promote this amongst their subordinates by: decisive action; clear direction and guidance; precept

and example; advice, encouragement and admonishment; and by giving subordinates every opportunity of contributing to mission success through sensible delegation of authority.

Command at Sea: The Prestige, Privilege and Burden of Command

Only a seaman realizes to what great extent **an entire ship reflects the personality and ability of one individual**, her Commanding Officer. To a landsman, this is not understandable - and sometimes it is even difficult for us to comprehend - but it is so;

A ship at sea is a different world in herself, and in consideration of the protracted and distant operations of the fleet units, the Navy must place **great power, responsibility and trust in the hands of those leaders** chosen for command.

In each ship there is one man who, in the hour of emergency or peril at sea, **can turn to no other** man. There is one who alone is **ultimately responsible** for the safe navigation, engineering performance, accurate gunfire and morale of the ship. He is the Commanding Officer. He is the ship;

This is the most difficult and demanding assignment in the Navy. There is not an instant during his tour as Commanding Officer that **he can escape the grasp of command responsibility**. His privileges, in view of his obligations, are almost ludicrously small; nevertheless, this is the spur which has given the Navy its great leaders.

It is a duty which richly deserves the highest, time-honoured title of the seafaring world - Captain.

Joseph Conrad

Management

Management is no substitute for leadership but is a vital element of the moral component. It is about making the best use of resources. It is an attribute of command that cannot be overlooked because it is fundamental to effectiveness and, of course, relates to principles of war, economy of effort and sustainability. Every commander must know how hard to drive his force; he must not be spurred beyond the limits at which people lose their powers of recovery. This is achieved through a combination of effective management of resources (people and equipment) and good leadership. Management is regarded as an element of the moral component, rather than the physical, because without good management of resources and the provision of sufficient administrative support, the maintenance of morale and the motivation of the force would be rendered considerably more difficult.

The measure of good management is the achievement of the right balance, neither overabundance nor a shortage of resources, either of which would undermine the concentration of effort on the main objective.

Professionalism

Continued success in future operations depends on high professional standards, sustained by a desire for continued improvement and innovation to ensure a fighting edge over potential adversaries. To that end, the SLN must be structured to fight and not structured for the convenience of administration in peace.

SLN Maritime Strategy 2025 states 'Professionalism is built on a foundation of professional men with the highest standards and values, who are trained and educated to maintain the fighting edge; able to operate at and from the sea with a strong team ethos, cohesion and identity. They should be unique in their ability to adapt to a wide range of operational roles at sea, on land and in the air. SLN needs to be necessarily human centric, supported by strong leadership at every level, who will deliver the winning advantages.'

Teamwork, Cohesion and Empowerment

“Character is the bedrock on which the edifice of leadership rests. . . Without [character], particularly in the military profession, failure in peace, disaster in war or, at best, mediocrity in both will result.”

Gen Matthew Ridgway

Leadership at sea depends vitally upon deep professional competence, but it in no way diminishes the importance of the human element. A mission effective warship is one in which the commander regularly harnesses the different professional skills and diversity of their ship’s company to develop and empower them into a high performing team. One advantage that the leader at sea possesses is that risk is shared by the whole ship’s crew on board the ship involved in combat. The need for teamwork and leadership are vital considering the arduous nature of maritime operations. The greatest naval leaders possessed the ability to generate enthusiasm, commitment and devotion among their subordinates at every level which is a basic element of success in battle.

Strong teamwork is essential to success and is the component that brings all our individual efforts together. It is the understanding, devotion and commitment to work with each other, whatever the function, to provide maximum unity of effort at all levels. Shared pride in success essentially comes from good teamwork.

Mutual Respect

Respect for men and women in SLN goes both up and down the chain of command as well as sideways amongst peers. It means treating each other with fairness and dignity, and acknowledging every individual’s contribution to the full. As operating conditions become more demanding respect for each other is doubly important, as is the forging of those close bonds of professional and personal trust that will withstand the stress of battle. Mutual respect mainly grows from trust and understanding.

Training and Education

The processes by which men and women are trained and educated for maritime war fighting involve both individual and collective efforts. The intricacies of contemporary warships and the systems that they carry mean that naval personnel of all ranks and specialisations require good intelligence and a high level of education from the outset to hone and maintain core competencies.

Even with increasingly realistic simulators, the individual's training as a sailor will not be completed until after he or she has had first-hand seagoing experience. Units newly commissioned or operational after extended periods of maintenance, both of which often involve considerable changeover of personnel, cannot be estimated to conduct operations with any high degree of effectiveness and efficiency. Therefore, ships in these environments undertake harbour training and system checks before they go to sea to achieve minimum standards of safety and work up to attain the operational capability required. The level of such capability set for achievement will depend upon the operational requirement, but even in peacetime no unit will be deployed by a commander until it has reached a specified minimum level of operational capability. Certain threats or exigencies will require priority to be given to particular warfare areas or techniques, while others can be held at designated peacetime criterions. This focusing allows the most efficient allocation of resources, as well as ensuring that effective forces are provided to operational commanders as swiftly as possible.

Work Life Balance

Every member of the SLN has a commitment to serve at sea and shore. SLN personnel in an environment that is stressful, tiring and isolated from family, friends and many of the comforts and activities. In order to ensure our naval personnel live well, work well and be well; a work life balance is essential. This balance is aided through recognition of family commitments and the establishment of flexible working arrangements and cycles of employment designed to ensure that every member has an opportunity to have a break from extended periods at sea, remote areas

or sustained operations. Flexible employment options contribute to improved morale, motivation, job satisfaction and ultimately retention.



Family Affection

Navy Values

“The safety, honour and welfare of your country come first, always and every time. The honour, welfare and comfort of the men you command come next. Your own ease, comfort and safety come last, always and every time.”

Field Marshal Sir Philip Chetwode

A Naval Officer

“It is by no means enough that an officer of the Navy should be capable mariner. He must be that of course, but also a great deal more. He should be, as well, a gentleman of liberal education, refined manner, punctilious courtesy and the nicest sense of personal honour. He should be the Soul of Tact, Patience, Justice, Firmness and Charity. No meritorious act of a subordinate should escape his attention or be left to pass without its reward, if even the reward be only one word of approval. Conversely he should not be blind to a single fault in any subordinate, though; at the same time he should be quick and unflinching to distinguish Error from Malice, Thoughtfulness from Incompetency and well-meant shortcoming from weed-less or stupid blunder. As he should be Universal and Impartial in his rewards and Approval of Merit, so should he be Judicial and Unbending in his punishment and reproof of misconduct.”

John Paul Jones

All officers other than the warrant officers and subordinate officers shall be appointed by commissions under the hand of His/Her Excellency the President of Democratic Socialist Republic of Sri Lanka in accordance with the Part II Article 9 (1) of the Sri Lanka Navy Act (Act No 34 of 1950), keeping exceptional honour and trust, on recommended candidates main qualities of honesty, integrity, loyalty and courage by H.E. the President. These expected qualities are mentioned in the Commissioning Warrant (Fig. 2.1)

Human factors of SLN are mainly shaped by the values puts forth as being its core and common sense being the driving tenant. Therefore, the SLN core values are Honour, Honesty, Integrity, Loyalty and Courage.

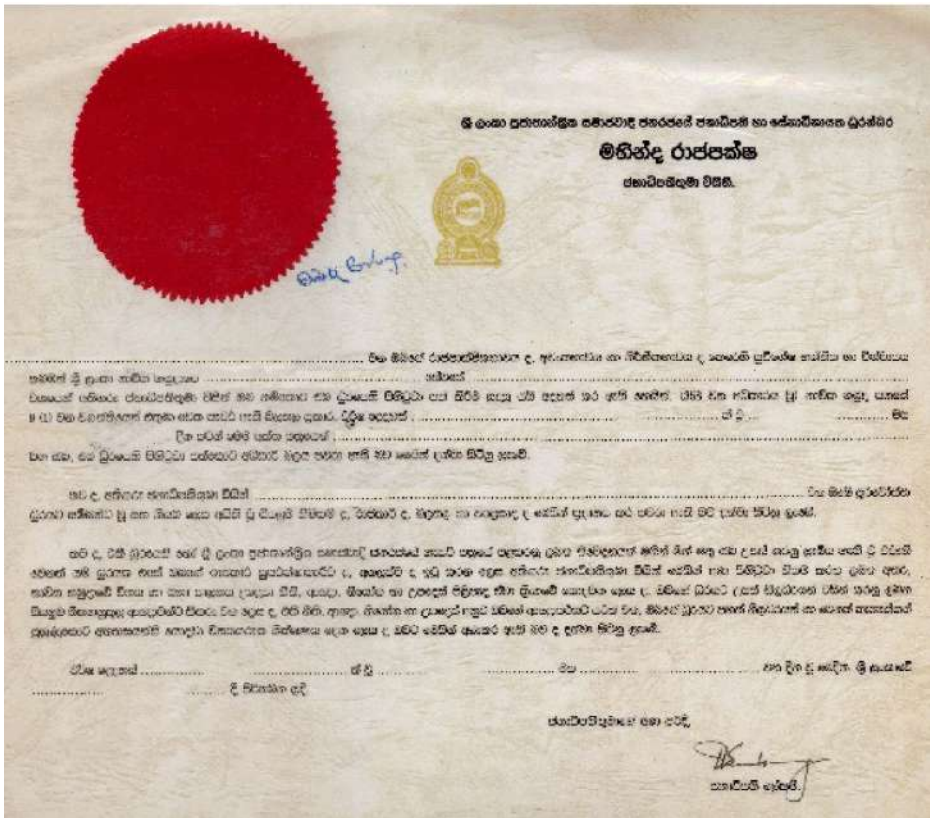


Figure 2.1: Specimen Commissioning Warrant

These values reflect:

- What the Navy collectively stands for and what brings its members together.
- What is considered acceptable or unacceptable in the naval environment and culture.
- What are the main objectives of the Navy and therefore what we should jointly work towards.
- How to act and interact in various levels; ship’s crew, colleagues, superiors, subordinates, Defence partners or the broader community.
- What we can reasonably expect of others and what they will expect of us.

- How to make rational decisions based on principles rather than needing a standard rule for every situation.
- Trust and understanding on its members.

Honour

Honour is the vital value on which the Navy's and each person's reputation depends. It reflects our moral and ethical standards. Honour demands strength of will and inspires physical effort and selfless service. Honour guides our actions in a way explicit rules cannot; it shapes our morality and defines our self-respect, notions of pride and indignity.

Honesty

Honesty is always being true to self, ship's crew and our colleagues. Honesty demands us to face our shortcomings. We must be open and upfront with each other and ourselves. Honesty drives personal and professional development. A lack of honesty deters improvement, allows incompetence to be hidden under the carpet and encourages failings to be ignored. Honesty enables us to serve with a clear conscience, sincerity and selflessness.

Integrity

Integrity is being committed to always doing what is right, no matter what the consequences. Our integrity defines our moral power and underpins our fighting spirit. As people of integrity we confront and overcome wrong regardless of personal cost. The integrity will be suspected if one's personal, financial and moral conduct falls below the accepted standards. We must be sincere, impartial and straightforward and sense of purpose must never be in doubt. Further, we must act with a sense of fair play and in keeping with the principles of natural justice.

Loyalty

Loyalty is being committed to each other and to our duty of service to the country. Loyalty is a reciprocal obligation of our shared and mutual commitments to each other and to the nation. It requires we acknowledge commendable effort and the knowledge that one will always support

the others. It promotes trust and confidence in fellow members that we accept responsibility and accountability for our actions and for those of our subordinates.

Courage

Courage is the ability to control our fear in a dangerous or difficult situation and strength of character to do what is right in the face of adversity. Courage demands unwavering obedience to moral principles. Courage drives responsibility, humility and personal example. No amount of education and experience can overcome a deficiency of courage.

Courage, both physical and moral, forms the foundation upon which bravery, fighting spirit and success depends: Physical courage means being prepared for tasks that, either directly or indirectly, involve the use of lethal force while being in harm's way. During these periods of heightened danger, it is likely that an individual's faith will become increasingly important. Whenever possible, religious advice should be available for support.

Moral courage is equally important. This is the courage to do what is right even though it may be unpopular and the personal cost is high. It is also the courage that allows one to admit mistakes, to accept blame and responsibility, thereby improving effectiveness for the whole.

CHAPTER 3

THE SPECTRUM OF CONFLICT

“War is the continuation of politics by other means.”

Carl Von Clausewitz

The spectrum of conflict signifies the full range of situations in which military forces may be called upon to operate, ranging from stable peace to full scale warfighting. The spectrum of conflict may be diagrammatically denoted as follows:



Figure 3.1 – The Spectrum of Conflict

Peace and Conflict

Any nation or state can be said at any one time to be at peace or in conflict. Peace remains the goal above all to be prized. In reality the current security environment places all countries somewhere in this spectrum of conflict. Many are actually in situations of conflict other than war and some are at conflict itself. The edges of peace and conflict are concealed and overlapped.

Peace

Peace is a condition that exists in the relations between groups, classes or states when there is an absence of direct or indirect violence or the threat of violence. Military activities discharged during peace are likely to be based on the need for training and may also include military aid to the civil authority.

Peace can also be categorised into three main areas:

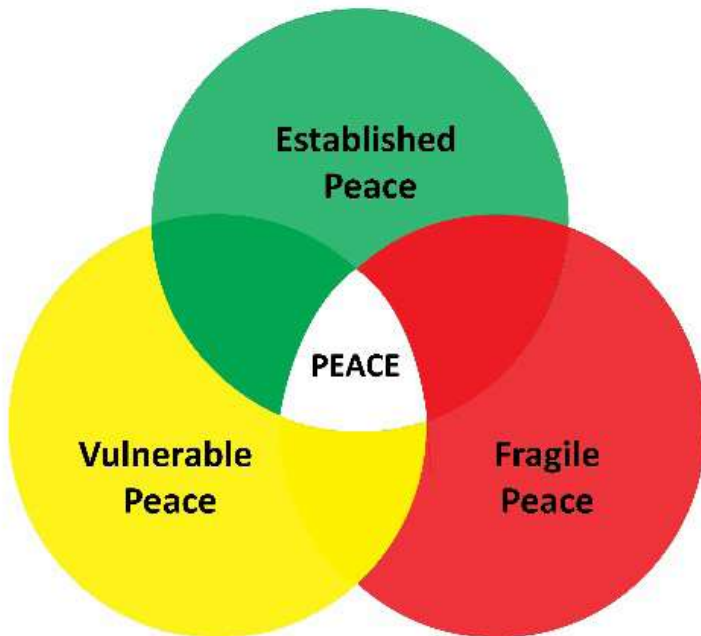


Figure 3.2 – Stages of Peace

- **Established Peace.** There is no threat or actual violence. However, this is a transitory condition, generally not enjoyed for long.
- **Vulnerable Peace.** In circumstances where peace is threatened it could be termed as vulnerable peace. In such a scenario, disputes that threaten to dissolve into conflict will be apparent. Violence will come as an inevitable outcome and the boundary to conflict will be crossed.



SLN Troops Deployed for Internal Security Duties to Assist Department of Police

- **Fragile Peace.** In a situation following a conflict; if the basic causes and effects have not been fully dealt with or restored, the peace that exists will be fragile and will demand careful steps to rebuild and consolidate.



SLNS Gajabahu Conducting Firing Practices to Maintain Combat Readiness

Conflict

Conflict occurs as one potential outcome of political competition between human wills, and can rapidly escalate into armed hostilities between adversaries in the international system. Between the diametrically opposite categories of war and peace, nations remain in a constant state of competition, characterised by a wide range of direct, indirect, accommodating, coercive, engaging and deterring behaviours. Competition can escalate into open conflict with little warning. Competition and conflict can also occur between non-state entities acting against one another, against a government and/or as a proxy for other nation-states.

A spectrum of conflict has been developed which describes the full range of political behaviours from stable peace through to competition, irregular conflict to overt war between nation-states. The spectrum of conflict provides a conceptual foundation to aid understanding of the nature of conflict between adversaries, informing the development and prosecution of military operations. An informed comprehension of the nature of conflict that exists or may exist between protagonists informs the formulation of strategic objectives and guides operational design to achieve those objectives.

Australian Army Land Warfare Doctrine 3-0, Operations,
2018

A conflict is a situation in which violence is either manifested or threatened. It is a struggle or a clash between contending wishes. A conflict could be inter-state which is between states or intra-state which is within states or among people. In analysing the causes of conflict this can be broadly broken down into two main categories as follows:

- **Interest Based Conflict.** A conflict arising from a dispute over trade, resources, international or regional status is considered to be interest based.

Iran-Iraq War over Oil in the Persian Gulf (1980 - 1988)

The War began on 22 September 1980, when Iraq invaded Iran and it terminated on 20 August 1988, when Iraq accepted the UN-brokered ceasefire. The war also followed a long history of border disputes and Iraq planned to annex the oil-rich Khuzestan Province and the east bank of the Arvand Rud (Shatt al-Arab).

- **Value Based Conflict.** A conflict arising from a dispute relating to territory or resulting from religious or ethnic rivalry can be considered to be value based.

The Conflict between Eritrea and Ethiopia (1998 - 2018)

The Eritrean-Ethiopian War, one of the conflicts in the Horn of Africa, took place between Ethiopia and Eritrea from May 1998 to June 2000, with the final peace only agreed to in 2018. Eritrea and Ethiopia, two of the world's poorest countries, spent hundreds of millions of dollars on the war. It had suffered tens of thousands of casualties as a direct result of the conflict, where only minor border changes resulted.

Military Response to Conflict

Military response to conflict will require armed forces to be deployed according to the level of the conflict. Here we have to understand that during peace, armed forces are deployed to carry out military activities in peace. When there is conflict other than war the armed forces are deployed for operations other than war.

At the same time when there is a regional conflict, limited war or general war, the armed forces will be deployed for war fighting. It is therefore useful to consider conflict as a spectrum.

The spectrum extends from full scale war fighting at one end, to the use of armed forces in extremely constrained circumstances at the other end. Sandwiched between general war and peace, that is operations other than war.

Regional Conflict

The term regional conflict describes a limited conflict arising out of regional issues in a specific geographical area. This may be the only limitation that applies since there is no implication that the size of the force deployed, the types of weapons employed, the duration or the intensity of the fighting which will in any way be limited.

The Gulf War (1990 - 1991)

The Gulf War (02 August 1990 to 28 February 1991), Codenamed Operation Desert Shield (02 August 1990 to 17 January 1991) for operations leading to the build-up of troops and defence of Saudi Arabia and Operation Desert Storm (17 January 1991 to 28 February 1991) in its combat phase, was a war waged by coalition forces from 35 nations led by the United States against Iraq in response to Iraq's invasion and annexation of Kuwait arising from oil pricing and production disputes.

Limited War

This is a cold war term and was principally used to distinguish international conflict in which it was thought there would be no way out to nuclear weapons. The Korean War is probably the best example of limited war during this period. However with the demise of the cold war this term is probably no longer relevant since forces engaged in regional conflict will invariably be subject to limitations and constraints.

The Korean War (1950 - 1953)

Korean War, conflict between the Democratic People's Republic of Korea (North Korea) and the Republic of Korea (South Korea) in which at nearly 2.5 million personnel lost their lives. The war reached international proportion in June 1950 when North Korea, invaded the South.

Total War or General War

This is commonly used to define major unrestricted conflict in which national survival is at stake. The definition is; General War implies a total national effort in, which all elements of society will be involved.

The Second World War (1939 - 1945)

Second World War was a global war that lasted from 1939 to 1945. The vast majority of the world's countries including all the great powers formed to opposing military alliances; the Allies and the Axis. A state of total war emerged, directly involving more than 100 million people from more than 30 countries. The major participants threw their entire economic, scientific and industrial capabilities behind the war effort.

RANGE OF MILITARY OPERATIONS		
Military Operations	General Goals	Representative Examples
COMBAT	War	Fight & Win Large Scale Combat Operations Attack / Defend / Blockade
	NONCOMBAT Military Operations Other Than War	Deter War & Resolve Conflict
Promote Peace & Support Civil Authorities		Freedom of Navigation Counterdrug Humanitarian Assistance Protection of Shipping Civil Support

Figure 3.3 - Military Operations Other Than War Highlighted¹⁵

In American and British doctrines, operations other than war embrace peace support operations within which is peacekeeping, peace enforcement, conflict prevention, peace-making, peace building, humanitarian operations and counter insurgency, which is abbreviated as COIN within which is subversion, terrorism and armed insurrection.

Levels of War

The levels of warfare provide a framework to rationalise and categorise military activity. There are three levels of war addressed by national and naval planners for determining the quantum and manner in which national power in general and maritime power in particular, is to be applied. These are strategic, operational and tactical levels of war.

This framework, also clarifies the interrelationships between the various levels, although these should not be seen as discrete, as the levels often overlap. The framework of strategic, operational and tactical levels

recognises the inevitable compression and blurring between them and reflects their dynamic interrelationship and non-linear interaction. The relationship between what is tactical, operational and strategic is both fluid and contextual. Tactical gains and losses may have far greater strategic effects than that which is immediately obvious.

CHAPTER 4

CONCEPTS OF WAR

“War is more than a mere chameleon that slightly adapts its characteristics to the given case. As a total phenomenon its dominant tendencies always make war a paradoxical trinity - composed of primordial violence, hatred and enmity...; of the play of chance and probability...; and of its element of subordination, as an instrument of policy, which makes its objects to reason alone.”

Carl von Clausewitz

War

War could be simply defined as a clash between organised groups characterised by the use of military force, established nation-states or non-state groups. A violent struggle between two hostile, independent and irreconcilable wills, each trying to impose itself on the other.¹⁶

Similarly, war has an enduring nature that demonstrates four continuities; such as a political dimension, a human dimension, the existence of uncertainty and a context of wills.¹⁷ According to the theory of Clausewitz, ‘On war’, all wars involve passion and often lying with the hostile feelings of the people. Further it is highlighted that war is always a matter of policy as ‘the political objective’.

Conversely, warfare has a constantly changing character. Technology has a significant influence on warfare apart from the other influences such as doctrine and military posture. Therefore, such changes clearly influence the employment of units, weapons and operational art to link military objectives to achieve strategic ends.

The object in war is to impose our will on our enemy. In order to fulfil this object, either it is the organised application or threat of violence by military force.

“There is no instance of a nation benefitting from prolonged warfare.”

Sun Tzu

Attributes in War

Friction, Uncertainty, Fluidity, Disorder, Complexity and Danger

Friction

Friction is the element that amalgamates to form the atmosphere of war and turn into a medium which hampers activity. Simply it is a struggle between two or more opposing concepts or wills. Conduct of war becomes extremely difficult due to the various factors. These factors are called as friction. It makes the simple task difficult and difficult task impossible. Friction could be mental as in decision over a course of action. Similarly, it could be physical due to effective enemy fire or physical obstacles placed by enemy in terrain (Sea). Sometimes, friction could be self-imposed such as undefined goals, poor coordination, complicated plans, complicated task organisations, top-down relationships or complex technologies.¹⁸

‘Friction will always have a psychological and physical impact.’

Will of the human component is the key to overcome the friction. Therefore, it is essential to strive ourselves to overcome the effects of friction and ensure to impose the friction of our enemy to a level that weakens his will to fight. Friction makes defence forces less effective in combat and it’s prescription is experience. Therefore, only with thorough

experience we would be able to enhance the will power necessary to overcome the friction.

In this context SLN have acquired considerable experiences in conduct of Insurgency, Guerrilla warfare or semi conventional or conventional type of warfare since independence. Those experiences are unquestionably beneficial as the Navy prepares for future conflicts and leaders assume responsibilities at the operational and strategic levels.

Hence, training should be arranged to simulate the near conditions of war. However, it is required to note that it is highly impossible to fully create exact conditions to experience the level of friction of real war.

Uncertainty

‘Uncertainty’ or ‘Fog of War’ is another pervasive attribute of war. It is obvious that all actions in war take place in an uncertain atmosphere. Uncertainty creates in the form of unconfirmed/unknown facts on the enemy, about the environment and own and friendly situations. In order to reduce the uncertainty, gathering information is the only way out. However, it is kept in mind that, it is very difficult to eliminate and war is in its nature make certainty impossible as all actions in war will be based on incomplete, inaccurate or contradictory information.¹⁹

Therefore, maritime forces must be able to determine possibilities and probabilities. This enhances our standard of military judgment. Thereby judging possibilities and probabilities we make assumptions of our enemy’s core capabilities and actions to reduce uncertainty of war.

“All warfare is based on deception.”

Sun Tzu

By utilizing Navy Planning Process (NPP), we could make our judgment effectively to reduce uncertainty. It helps to develop simple, flexible plans including of likely contingencies and fostering initiative among subordinates.

Uncertainty leads to estimation and acceptance of risk. Risk is an inherent quality in war. The risk is equally present in action and inaction. Therefore, it is necessary to accept the risk in war. However, it is required to bear in mind that the acceptance of the risk does not guarantee the entire likelihood of success.

“Fog of War - Uncertainty and confusion generated in wartime by a combination of limited, incomplete, inaccurate and contradictory information, deliberate deception and the mayhem and stress caused by combat.”

On War - Clausewitz

Fluidity

Fluidity is an inherent attribute of war. Each phase of a war is the temporary result of exclusive combination of circumstances, producing a unique set of problems which requires an original solution. In addition, each phase is the combination of past and future actions shaped by the previous actions and shaping the condition for the future action. Therefore, conduct of war requires flexibility of thoughts. Hence, success will be determined on the ability in adaptation, proactively shaping the events to our advantage and reacting to constantly changing conditions.²⁰

Tempo of the activities in war will influence the success. However, it is impossible to continue and sustain high tempo activities for a longer period even at the time of our advantage over the enemy. Time and space could influence the tempo of war but need not to curtail our action. Nevertheless, it is necessary to develop competitive tempo between each other to influence and exploit enemy's tempo to obtain an advantage over them by continuously creating events.²¹

Navy will mass to concentrate her combat power against the enemy action. However, the massing of naval combat power is vulnerable for enemy action. Therefore, competitive action required to be developed by dispersing and concentrating to avail the vulnerability to enemy combat action.

Disorder

Disorder is also another attribute of war especially due to the environment of friction, uncertainty and fluidity. It is a fact that due to the intensity of the war, set plans will be ineffective, instructions and information will be distorted, misunderstood and communication will be failed resulting mistakes and unpredicted events will take over the arranged plans.

The contemporary naval battlefields are particularly disorder due to the fact of range, lethality of modern weapons and composition of fighting power. However, advance communication technology with information technology, the disorder could be limited and achieved positive control.²²

Disorder in naval battlefields may lead to unoccupied areas, gaps and exposed flanks for enemy to exploit. Hence, it is required to impose a general framework which influences the flow of action rather than controlling of each event. However, we cannot eliminate the disorder and we must fight effectively in a disorderly environment. It is also vital to generate disorder and use it as a weapon against our enemy.

Complexity

War in its nature is a complex affair. In the Navy, fighting force comprises with different units or squadrons and requires close cooperation with each individual unit for the accomplishment of the common goal. At the same time, each unit has its own mission and must adapt to its own situation. Thereby, each unit acts with friction, uncertainty, and disorder with friendly and enemy forces.²³

War is not governed by individual actions or individual decisions at sea. Collective behaviour and multiple actions will decide the success or failure of the military action. Therefore, military action necessarily involves interrelated decisions and actions among all the units take part throughout the operation.²⁴

Danger

The means of war is force, applied in the form of organised violence and its immediate result is bloodshed, destruction and suffering. Since, violence is present, it is embedded with fear and it has significant impact on the conduct of war. Fear resulted to eliminate the will. Therefore, leaders must foster courage to overcome fear. Leaders must study and understand fear and be prepared to counter it. Leaders should develop cohesion, teamwork and the self-confidence of individuals to conquer fear.²⁵

‘Courage is not the absence of fear; rather, it is the strength to overcome fear.’

Concept on Use of Force

Destruction and Attrition

Physically destroying of enemy’s war fighting capabilities such as their military hardware, troops, command and control facilities mostly by using military force is termed as destruction. Gradual but, steadily destruction of enemy’s war fighting capabilities in order to degrade the war-waging ability is termed as attrition. In the context of maritime warfare, naval forces are determined to achieve both destruction and attrition by applying their multi-dimensional naval capabilities.²⁶

The destruction of ten LTTE logistics ships (floating warehouses) by SLN in 2006/2007 which were stationed in high seas loaded with warlike materiel, effectively cut off the supply of arms and ammunitions for the fighting cadres on land was a significant factor in degrading the war waging capability of the adversary and finally ultimate defeat in 2009.

Compellance

Achieving the change of behaviour of enemy by inducement using own military force and its capabilities is termed as compellance. In order to induce the enemy's behaviours, a superior force is requested with better communication and correct leadership to control the enemy's use of force.²⁷

"The skilful commander imposes his will on the enemy by making the enemy come to him instead of being brought to the enemy."

Sun Tzu

Coercion

The use of own military capabilities as threat against the enemy to hinder their will to fight and achieve superiority over them is termed as coercion. In this context, psychological pressure build up on the enemy is more appropriate than the physical pressure imposed on them. Thereby, own forces will be able to destroy enemy's will to continue the aggression.²⁸

"The supreme art of war is to subdue the enemy without fighting."

Sun Tzu

Deterrence

Deterrence is preventing aggression by convincing a potential aggressor that the cost of coercion would be more than its likely gain. This could be achieved by raising the cost (deterrence by punishment) or denying the gains (deterrence by denial). Similarly, deterrence could be define as passive deterrence which is implicit in the maintenance of military capability, strategy and active deterrence requires a more overt posture in terms of deployment and readiness.²⁹

Intense use of underwater explosions by means of scare charges of varying sizes at random intervals both day and night in all harbours by SLN, dissuaded the LTTE in attempting to gain access to the ports disguised as underwater saboteurs to destroy ships by either placing mines or by suicidal explosions to cripple the war fighting capability and the economy.

Disruption

The actions of the enemy to disturb and unable the effective function of the cohesiveness of the troops in combat is termed as disruption. Disruption could be achieved by enemy through disturbing or targeting mainly own command and control elements, communication facilities, logistics network, surveillance and network centric operations. In the naval context, enemy is capable of disrupting the war fighting capability through economic warfare and dislocating its military-strategic infrastructure in the littoral areas through shore strike.³⁰

During Eelam War II, the LTTE effectively jammed the VHF communication channels used by tri-services, thereby disrupting the command and control, and morale of the troops especially during times of attack until secure communication was made available for the tri-services.

Escalation

Increasing the intensity of the conflict during the course of an operation is termed as escalation. Escalation could be achieved through an increase of quantity and quality of force used and their targets. Increase of geographical area of operation is called as Horizontal Escalation and increase of violence indicate the Vertical Escalation.³¹

Horizontal escalation

Deployment of SLN fleet for hunting floating warehouses hundreds or sometimes thousands of nautical miles from land - expanding the geographic scope of a conflict.

Vertical escalation

LTTE attacking SLN craft with 23mm guns fitted on their platforms much before SLN started using same and SLN changing its strategy from a brown water confrontations to pursuing and engaging LTTE ships (floating warehouses) in international waters towards the latter stages of the conflict – increasing the intensity of the conflict by employing types of weapons not previously used in the conflict or attacking new categories of targets.

Embroidment

It is a situation where conditions are altered to use of force to attain political objectives by a large scale, of greater intensity or longer duration than it had predicted or was prepared at the initial stages.³²

Persuasion and Dissuasion

Persuasion is convincing another state, by diplomatic means without the threat or use of force to carry out certain actions that are in its own interests, by emphasising the benefits of the actions to that state. Dissuasion is convincing another state by diplomatic means without the threat or use of force to abstain from carrying out certain actions that are harmful to own interests. In this context, naval forces with its inherent attributes and capabilities are ideal to carryout persuasion and dissuasion.³³

“Man of war is the best ambassador.”

Oliver Cromwell
Lord Protector of the Commonwealth of
England

CHAPTER 5

NEW DYNAMICS OF THE INDIAN OCEAN REGION

Introduction

The Indian Ocean is a sea of immense distances and incredible size covering 20% of earth. The lateral separation across the ocean is more than 5000nm between South Africa and Australia and it covers seventeen million square Nautical Miles. Above everything, it is the sheer immensity of the Indian Ocean which has enabled it to defy domination by any one power in the past and new struggle in the present.³⁴

Geographically, the Indian Ocean has two different features; the oceanic area and the surrounding land area. Its Eastern border covers Singapore, the Indonesian Islands and Australia up to the longitude of 147° East including Tasmania. To the North, it borders to the Asian continent covering from Suez to Malay Peninsula. Western border is the African continent up to longitudes 20° East. However in the South it runs up to latitude 60° South as determined by the Antarctic Treaty of 1959.³⁵

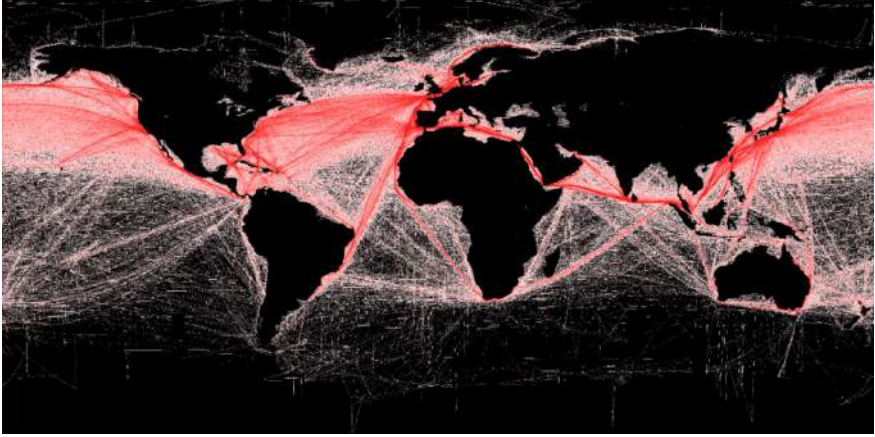
Indian Ocean Region (IOR) accounts for more than one third of the global population.³⁶ It has a population of nearly 2.6 billion which represents 39 percent of the global population and consists of vast and diverse political, cultural and economic ethnicities.³⁷ According to the prediction, by 2030, population will grow by more than 27 percent, adding another 689 million people.³⁸ This will create many difficulties to the regional countries in terms of providing basic needs and achieving sustainable development.

Maritime Routes

Ranking the third-largest water body in the world, Indian Ocean is home to one of the most important sea lanes in the world. These sea lanes are crucial in sustaining many global as well as regional economic giants.

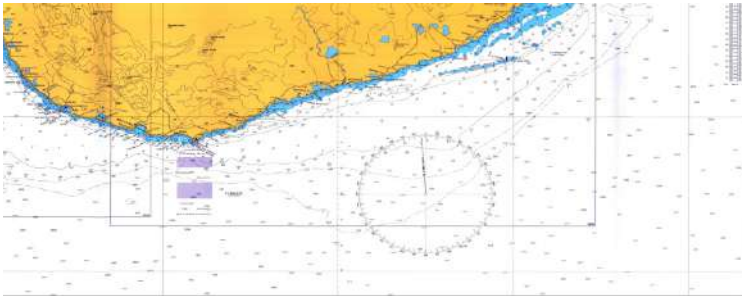
These vital maritime traffic lanes link the Middle East, Africa, and East Asia with Europe and the Americas. This sea routes are congested with heavy traffic of ships which carries energy and petroleum products from the oil rich countries of the Persian Gulf and Indonesia. The Indian Ocean is responsible for many strategically important choke points, such as the Strait of Hormuz, the Strait of Malacca, Lombok and the Sunda Straits. In case of any disorder in the smooth traffic flow over these key points, catastrophic results could be created. Any type of action like a terrorist activity or break out of a war could be led to the shutting down of the Strait of Hormuz. This would cut off Gulf oil supplies to the West. Likewise, the closing of the Strait of Malacca passage, through which nearly 9.4 million barrels of oil flow per day can extremely impend the economies of Southeast Asia, China and Japan.³⁹ Furthermore, the distance from Sri Lanka to Strait of Hormuz and the Strait of Malacca is approximately 2000nm meaning that Sri Lanka is centrally located in the most important maritime route between Persian Gulf and Indonesia paving the way for any support and quick response for the SLOC and littorals of the IOR.

The sea trade is not a new concept for the countries of the IOR. It goes back to many centuries where traders and seafarers transported commodities from East to West and vice versa. At present 90 percent of world trade take place at sea. One half of the entire world's container traffic is passing through IOR.⁴⁰ The sea lines of communication (SLOC) in IOR is strategically very important to the entire world. Any disturbance or interruption to unimpeded flow of this traffic would create a huge influence to the world economy.



Satellite Image of Shipping Lanes

The SLOC running from the West to East and vice versa pass through the Southern coast of Sri Lanka just 5nm (9.5km) from Dondra point and this geographical position has made ample opportunities and potentialities to make Sri Lanka an Asian maritime hub in the world, competing with other prominent hubs such as Dubai and Singapore. If this unmatched strategic location is harnessed, Sri Lanka could potentially be the focal point of shifting the strategic calculus from the West to the East.



Traffic Separation Scheme Established at South of Hambanthota

Undersea Communication

Underwater (submarine) cables have been part of international communications since mid 19th century. Strategic importance of the vital infrastructure crossing IOR has never been more critical than it is today. In the present marine environment there is extensive and growing trend for network laying. Therefore, it is very important to pay attention and provide security for undersea cables crucial to global communications and commerce, and vital to our national interests.

Oceanic Resources

The IOR is rich in energy resources and minerals such as gold, tin, uranium, cobalt, nickel, aluminium and cadmium.⁴¹ Nearly 55 percent of known oil reserves and 40 percent of gas reserves are in the IOR. The required amount of energy to the demand heartland (China, India and Japan) is huge. According to the current usage, the oil import dependence of India is expected to reach 91.6 percent by 2020.⁴² China will be responsible for 76.9 percent, while for rest of South Asia it will be 96.1 percent.⁴³ Since hydrocarbon would continue to remain as a fuel up to 2040, it is vital to safeguard the SLOC, thus the energy security will remain as the most focused and highly expensive event in the IOR.

The oceans are considered as an unfailing source of food, minerals, energy and marine life. Yet, at present, human can reach only an extremely small part of these resources as it does not have a complete knowledge of the oceans. New technological inventions and global population growth have increased the competition between the countries for marine resources. Exploring and drawing upon the ocean's resources require a heavy investment initially. The exploitation of marine resources in the form of fish, oil, minerals and other elements is already possible with the available technology. Yet competition for the distribution of resources is drastically varies due to the continual, rapid economic and industrial growth and global developments.



Some of Oceanic Resources

Regional and Extra Regional Powers in IOR

“Whoever controls the Indian Ocean dominates Asia. This ocean is the key to seven seas. In the 21st century, the destiny of the world will be decided on its waters.”

Admiral Alfred Thayer Mahan (1840-1914)

The Indian ocean is a theatre where the great naval powers seek to extend their power projection in pursuit of their respective national interests. The emerging geopolitical landscape of the ‘Indo-Pacific’ and the intense strategic focus thereon by the major powers, both regional and extra-regional, have added complexity and tension to countries like Sri Lanka. The situation will remain quite a challengeable due to strategic outreach of major maritime powers in IOR. The IOR has had a long history of extra-regional influence and perhaps it could be argued that some of the many remaining legacies of this, which are evident

around the region, are potential sources of stability. Apart from Indian Ocean states, all major industrial powers and energy suppliers have an innate interest in Indian Ocean security and stability. India plays a vital role in maritime security in the IOR. In addition, China, France, UK and the US also play important role in assuring maritime security in IOR.

With its military modernisation, China's influence in IOR is expanding rapidly with increasing naval presence in blue waters and its expanding economic influence in countries of the IOR. The safety and stability of the Indian ocean is critical for China's energy security as Chinese economic development will demand more resources from Western and Gulf countries while requiring its finished goods to be exported to the Western market through IOR. China will continue to assist and develop diplomatic relationship with IOR states in the future. The modernisation of various fields which support Chinese economic development will continue rapidly and steadily in the future as well. Therefore, the Chinese presence in the IOR could be seen mainly from their interest in advancing their economic engagements and ensuring safety of their maritime trade, especially oil.

India is the pre-eminent naval power in the region, and has a vital role to play with regard to the future of the Indian Ocean. The rapid growing economy of India depends on the maritime security and safety of IOR. Timely arrival of inbound resources from various places of the world and effective shipment of outgoing products to their destination will be crucial for the development of India. Further, India depends on huge amount of marine resources from IOR. India's commitment to develop cooperative and collaborative effort with neighbouring countries of the region to develop maritime security will be continued in future. Therefore, India will play major role in developing maritime security and safety of the IOR.

US presence secures the vital sea lanes of the Indo-Pacific that underpin global commerce and prosperity. As history has demonstrated and the future necessitates, the US will continue to play a key role as a force for regional stability in the Indo-Pacific in support of US diplomatic and economic aspirations. US will strength the diplomatic ties between IOR

states as they require for their unhindered presence in the region. US will form coalitions with regional powers whose interests are, preferably, aligned with its own but generally not opposed to them.⁴⁴

Japan also has recently begun to play a more proactive and assertive role in the IOR with visits by its naval fleet and participation in naval exercises/dialogues with countries in the IOR. Due to China's expanding presence in the region, the security situation in the Indian Ocean has always been concern for Japan .

Maritime Threats in IOR

The world economies, which are interconnected and interdependent through the sea routes, has been the driving factor in this pivotal process and the geo-political view of the affairs of the ocean has become significant. However, securing these SLOC from various threats possess a challenge, as non-traditional threats are developing the tension in the IOR.

It has been argued that the Indian Ocean is fast becoming a nuclear ocean. Initially, IOR is regarded as a 'Zone of Peace'. However, with the development of nuclear power by littoral countries of IOR, this concept has changed. Further, extra regional nuclear powers also are present in the IOR and hence has become a highly congested nuclear ocean.

While traditional threats confines to conventional forms, non-traditional threats prevail developing the tension in the IOR. The non-traditional challenges continue to confront the world maritime domain and joint efforts are taken globally. Countering piracy off East Africa and West Arabian Sea, and cooperate sea patrols in the Strait of Malacca are good examples for successful cooperative efforts. However, there are still gaps for effective security mechanism, allowing non-traditional threats to grow unchecked and demanding more effective cooperate solutions.

Environmental Security

Environmental security in IOR is of paramount importance in the present day context. The serious effects of climatic change, environmental

degradation and over exploitation of ocean resources affect the development and the future of the regional countries. Severe weather changes and rising of sea level will adversely affect the natural cycles of the environment and its inhabitants. Rising of sea temperature is also one of the key environmental issues in the region. These factors could cause a considerable damage to the environment and to the society.

Climate change is likely to influence maritime environment in the IOR. The growing unpredictability in climate and weather patterns is having a disproportionate impact over the IOR. Not only is the region predicted to bear the brunt of future climatic changes, it is also likely to face strong constraints in meeting the coming threats. It has been estimated that Indian Ocean states are responsible for approximately 40 percent of global greenhouse gas emissions where all the world community is highly concerned about in the present day's context.

Environmental degradation and over exploitation of ocean resources directly affect the economy of a country. Degradation of coastal and marine environment endangers natural and vital ecosystems. This leads to the loss of marine resources. Perhaps fisheries are the most famous natural resource of the ocean. Most economies of the region heavily depend on the fishing industry. The increase of environmental degradation in the ocean, has threatened the marine life including the edible fishes enormously. On the other hand, the high demand for fish has led to the over exploitation the resource.

The heavy traffic that prevails in the maritime trade routes can be regarded as another serious issue. Most of the ships that travel through the region carry oil and hazardous material. In case of an accident, an oil spill is inevitable and this could bring destructive effects to the marine environment. Therefore, lot of assets and commitments are required to maintain the safety of marine environment.

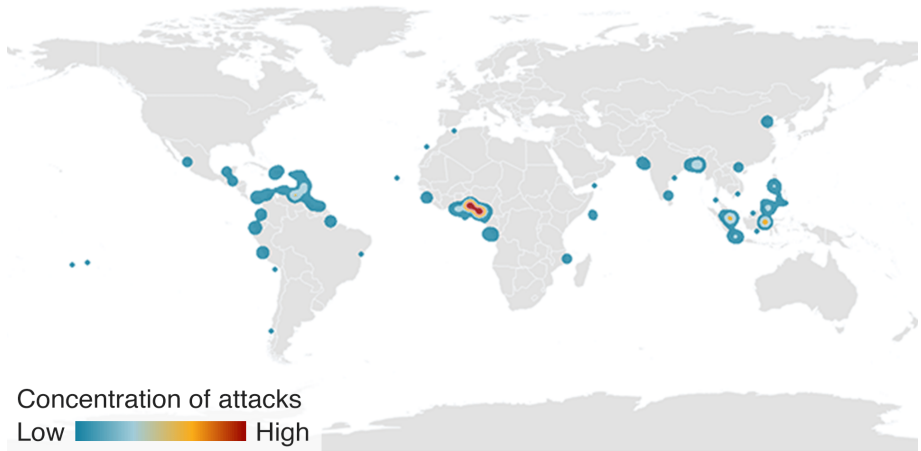


Marine Pollution Affects Natural Eco Systems

Some of the unique environmental and geo physical characteristics of the IOR include having 30% of world's coral reefs, 40,000 square kilometres of mangrove and nine of the largest marine eco systems of the world. The natural balance of the marine eco systems of the region is deteriorating due to land based pollutions like plastic, polyethylene, sewage, drainage discharge, marine-based pollutions caused by shipping (spillage, ballast water), drilling and mining. Some reports estimate that nearly 40 trillion litres of sewage and 4 trillion litres of industrial effluents enter the region's coastal waters every year.⁴⁵ As the region is congested with the involvement of nuclear powered nations, the presence of nuclear submarines and also the transportation of nuclear material create a huge risk for the security of the maritime environment due to vulnerability of accidents. Similarly dumping of high amount of nuclear waste to ocean is also creating an impact on environmental security. The significant amount of maritime traffic in the region generates a very high risk of pollution, and their consequences for the environment and the aquatic resources, could be disastrous for eco systems and tourism. The effect on local communities and traditional fishing villages could be catastrophic and thus it is bound to generate political and security consequences as well.

Maritime Piracy

Maritime piracy is a one of the key security issues of the IOR. Since the region is strategically important as a route that links the East and the West, it has become one of the busiest shipping routes in the world. This has made it a highly vulnerable place for piracy. These illegal activities are common in the areas like Gulf of Aden and the Strait of Malacca which are considered as the gate ways to the IOR. The safety and the security of these two sea routes are important to world maritime trade and it is essential to ensure the security of the routes by the regional states.



Piracy and Armed Robbery Incidents at Sea 2018

Until 2004 the focus of piracy was on Singapore/Malacca Straits and due to the initiation of a tripartite naval cooperation between Malaysia, Singapore and Indonesia (MALSINDO) safety of ships transiting this straits has been ensured.

The combine effort of different nations has achieved a considerable amount of success in mitigating the piracy activities even in the Gulf of Aden in the past and has dropped sharply by 2014. Deployment of capital ships by various countries as a combined maritime force for

improved surveillance and effective legal mechanism where Global Maritime Crime Programme (GMCP) of UNODC made a pivotal role and having Onboard Security Teams (OBST) have greatly contributed to curb piracy in this region.

However, still the possibility of growing piracy activities in the region cannot be ruled out. As unimpeded SLOC in the IOR is strategically important for East-West trade. Therefore, the security of this region is a matter of global concern.

Even though there are no reported acts of piracy in Sri Lankan waters, an Act to provide for the suppression of piracy in Sri Lanka is in place since 2001, to legally defend with prospective offenders.

Maritime Terrorism

Continuous strengthening of non-state actors has created an asymmetric type of threat to the IOR. Non-state actors like extremist ideology groups, crime syndicates, insurgents and terrorist groups act freely and have links with each other due to poor governance, weak border control and inadequate coastal protection of the region.

Attack on naval and commercial shipping by Sea Tiger Wing of Liberation Tigers of Tamil Eelam (LTTE) using surface attack craft, suicide craft, sea mines in the form of moored mines, ground mines, drifting mines, limpet mines, floating omni-directional claymores, human torpedoes and suicide divers caused huge lost in both human and financial resources. In addition the asymmetric tactics used by LTTE posed a threat to the maritime security in IOR until their defeat in 2009.⁴⁶



Some IED's Developed and Used by LTTE



LTTE Suicide Craft

After the attack of USS Cole by Al Qaeda in Yemen port in year 2000 which is considered as a similar attack on SLN Surveillance Command Ship SLNS Abeetha by the LTTE in 1991, the giant volcano of maritime terrorism irrupted in the IOR. Two years later in 2002, terrorist struck on French oil tanker MV Limburg in the Gulf of Aden followed by the attack on Super Ferry 14 off the coast of Philipines in 2004 and Mumbai attack in 2008 by another terrorist group. The attack on a Japanese tanker M-STAR in 2010 and attempt hijacking of Pakistani frigate PNS Zulfiqar in 2014 to attack the US Navy fleet also reemphasized the maritime threat to the safety of the IOR.⁴⁷

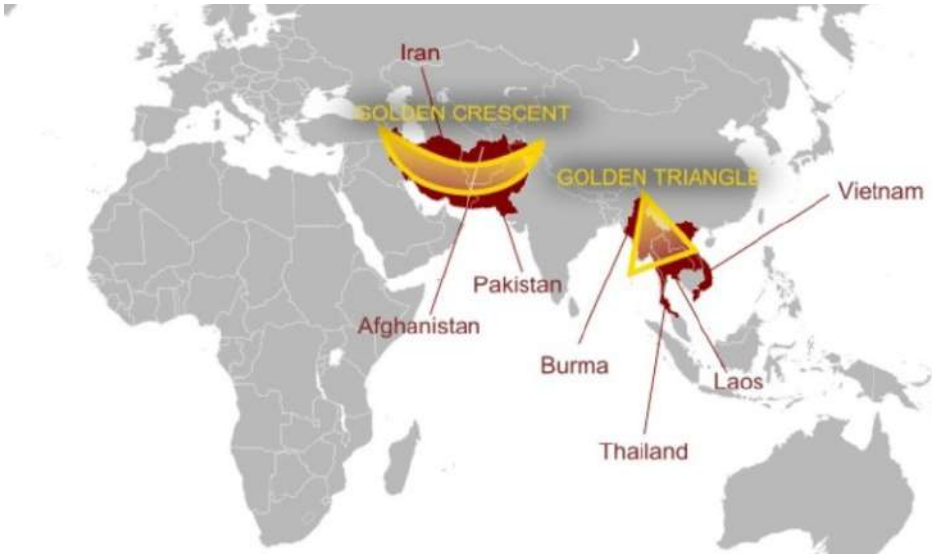


Mumbai Attack

With the increase of large and small container transfer in the sea, proliferation of WMD is a concern in ensuring maritime security. Despite of introduction of various international regulating mechanism and container security initiatives, terrorist may resort to transport WMD in container through sea ports.

Drug Trafficking and Gunrunning

The IOR is highly vulnerable for the scourge of small arms and light weapons smuggling. Further, the huge size of the ocean area has become a challenge to conduct policing activities. The famous world drug dealing regions of 'Golden Crescent' and the 'Golden Triangle'⁴⁸ are also situated in IOR and this has opened gateways to the arms and drug dealers. The Arabian Sea and the Bay of Bengal are being extensively used to transfer the illegal commodities by the drug traffickers. Though local statistics indicate that the annual consumption of heroin by addicts is minimal, apprehensions made during an year at ports, airports and on fishing vessels is significant and alarming.



Golden Crescent and Golden Triangle: One of the Largest Opium Producing Areas

Small arms support regional terrorism, armed conflicts and organised crimes. They have become easy accessible and the cheapest means in the sphere of violence. Lack of credible systems to account for small arms is one of the key issues in the regional countries. Further, in certain countries of the region, absence of law and order and lack of good governance have helped for proliferation of small arms. There is enough evidence to prove the links these weapon smuggling groups have with pirates, human smugglers, terrorists, drug traffickers, document fraud , money laundering and various other transnational crimes.

Human Trafficking

The threats of non-state actors could emerge due to state policy, state incompetence, state fragility and state failure. The state's lack of competence in governing its territory could create windows of opportunity to raise non-state actors. The major drawback of this situation is that some of the citizens of these countries try to escape as refugees and asylum seekers as their homeland is unsafe to live. Most often, the escape roots are through the sea. This creates security issues as terrorists, combatants and war criminals can disguise themselves as

refugees and travel across the region. Similarly, this could create an opportunity for the human trafficking gangs to conduct their activities freely.

Some of the states in IOR are used by criminals to organise human trafficking and illegal emigration from one place to another. Above the ethical necessity to fight these trafficking, the situation is worrying regarding navigation risks of unsecured ships crossing important maritime routes for a very long transit, in particular in the Sri Lanka's Search and Rescue Region.

More recently even multi-day fishing trawlers have been used for this illegal transfer to Australia which is a dangerous journey taking 15-20 days to reach Cocos or Christmas island. However, bilateral dialogues have taken place at very high levels between the two countries and operational cooperation through the sharing of information between the two respective Navies, Coast Guards and law enforcement agencies have done a great deal to significantly curb this trend.

Initiatives have also been taken and in progress to establish a fully-fledged Maritime Rescue Coordinating Centre (MRCC) by The Government of Sri Lanka, where Navy is taking a leading role among all other stake holders.

Illegal Unreported and Unregulated (IUU) Fishing

IUU includes all fishing that breaks fisheries laws and regulations or occurs outside their reach. Illegal fishing usually means without a licence, in an area where fishing is banned, with prohibited gear, over a quota, or for protected species. Unreported and under-reported catches by licenced vessels looking to flout quotas or catch prohibited species. Unregulated fishing occurs beyond 200nm of coastal states on the high seas which cover almost 45% of our planet. Inadequate regulations and enforcement mechanism in this vast area allow uncontrolled IUU fishing.

The IUU fishing contributes to overexploitation of fish stocks and is a hindrance to the recovery of fish populations and ecosystems. This problem represents a major loss of revenue, particularly to some of the developing or under developed countries in the world where

dependency on fisheries for food, livelihoods and revenues is high. The illegal methods use for fishing cause a detrimental effect due to over exploitation.

The IUU fishing is a major threat to the economy and natural resource management of a country. It is estimated that 75 percent of global fishing stocks are already fully exploited or overexploited.⁴⁹ On the other hand, fishing communities and their livelihood is severely affected by this kind of illegal activities. Many coastal littoral states in the IOR have faced a key issue as foreign fishermen illegally enter the local water which is rich in marine resources and exploit the stocks. In such context, policing activities of the EEZ of littoral states has become more challenging than ever.

Fishing vessels engaged in illegal fishing activities such as bottom trawling is detrimental to the fishing growth and existence of bio diversity. Hence, SLN engages in policing of such fishing vessels which come under IUU fishing and continue to enforce regional and international rules and regulations.



IUU Fishing

Illegal Movement of Weapons of Mass Destruction (WMD)

Globalisation, which hinges mainly on the free flow of international seaborne trade, also open up economic opportunities for populations. However, rogues and terrorists also capitalise on such opportunities, using seaborne trade to illegally transport WMD material. While diplomacy may be used as a primary weapon to battle proliferation, containment will require an answer. The efforts to mitigate such activities in the IOR are limited by the existing Law of the Sea.

Natural Disasters

The IOR is sometimes called the ‘World’s Hazard Belt’ as it is prone to disasters, both natural and man-made. Natural disasters under the group of Climatological (cyclones and droughts), Geological and Tectonic (earthquakes and Tsunamis) and Hydrological (floods and tidal surges) origins are very common and reoccurring phenomena in the region. The year 2018 and 2019 saw Tsunamis and earthquakes in Indonesia, severe droughts in Madagascar, floods and landslides in India, seasonal cyclones in the islands of the Indian Ocean, and many more calamities. The Tsunami in 2004 December and 2008 super cyclone in Myanmar have created huge impact to Sri Lanka and Myanmar respectively. Among the Asian countries that affected by frequent natural disasters Sri Lanka is also classified as a disaster-prone country. The most common natural disasters impacting Sri Lanka are the hydro-meteorological disasters which includes floods, droughts and cyclones.

Since no nation is able to stop these impacts, building resilience, adaptations, enhanced preparedness, early warning and quick response would be some of the best possible options to handle natural disasters by minimizing damage. Disaster Management Centre (DMC) which was established under the Sri Lanka Disaster Management Act No.13 of 2005 is the apex body for planning, co-coordinating and implementing disaster management activities in the country. Disaster preparedness, emergency reponse, mitigation of impacts and recovery for marine base disasters are some of the key functions undertaken by DMC.

It is universally accepted that the armed forces are best suited to respond to major disasters. Thus need for IOR Navies to respond promptly in order to provide Humanitarian Assistance and Disaster Relief (HADR) operations demand regional maritime cooperation.



Natural Disasters will be more frequent in IOR Littorals in Future

Future Challenges

IOR will continue to have many traditional and non-traditional threats in the 21st century. It will be the true nexus of world powers and conflicts in the coming years. It is here that the fight for democracy, energy, independence and religious freedom will be lost or won. Sri Lanka will have to face with some unavoidable challenges such as how to avoid being the focus of rivalry or competition among major powers. Sri Lanka is a small nation that is nevertheless very strategically placed, at a critical location within the Indian Ocean and this has focused the attention of many powers. In this context, SLN should determine to maintain progressive, positive relations with all the concern stakeholders in maritime operations in line with our national interests.

The strategic demarcation between Indian and Pacific Oceans are converging into Indo- Pacific and a new security framework has evolved and gaining prominence that could help mitigate the impact of strategic competition in the region. Nevertheless, it is increasingly becoming a necessity to have a comprehensive security architecture for IOR which all states should become an integral part of the binding fabric of such maritime security order. Non-traditional threats are emerging in different

dimensions and threatening the IOR security. Huge sea area and the economic, social and religious differences are the barriers to root out the threats. Environmental degradation, climatic changes and natural disasters have been emerging as burning issues in the region over the years. The involvement of different groups with different ideologies has generated a complicated environment and due to this, authorities have found it really difficult to find concrete solutions. Terrorist, drug trafficking and arms smuggling gangs are inter linked and operate both inland and the sea. Their modus operandi is difficult to spot and also, they fuel the non-state actors to rise against legitimate governments. All these activities ultimately affect the security of the major SLOC which bridge the East-West trade across the IOR.

Countries in the IOR are heavily dependent on the sea routes for their trade activities, thus established various means of Maritime Domain Awareness (MDA). From the Sri Lanka's perspective, like many other states, it shares vital maritime information by interacting through various means such as participating in regional maritime joint exercises, discussions and conferences such as the Indian Ocean Rim-Association for Regional Cooperation (IOR-ARC), Indian Ocean Naval Symposium (IONS), the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) conducting international maritime conferences such as 'Galle Dialogue' and entering into white shipping agreements with other countries.

The issues and threats in IOR will continue to evolve and many of the government and non-government organisations are involved in the process for securing better environment for all the states and seafarers. Yet the mechanism for implementation is required to strengthen with the policies formulated covering all the requirements for monitoring maritime activities through collective surveillance. There are many individuals and regional groups that continue to work in the domain awareness, but global analysis as how to integrate the common and critical requirements need to be addressed in order to enhance the shared MDA.

The traditional demarcations between geographical boundaries need to be merged together in terms of security for a common ocean. Therefore, there is no competition but only a need for collaboration and seamless corporation for a quick response across the domains and boundaries, hence a strong networking is a must. It is understood that no country is capable of handling maritime security threats and challenges in isolation, no matter how advance and developed it might be as the illegal actors themselves are networked, technologically sound and exploits whatever loopholes that exist to their advantage. The need is to focus globally and engage in structural cooperative mechanisms in order to effectively address the maritime security threats and challenges.

The vastness of the sea area of the IOR that SLN need to protect is huge. Hence, the country alone cannot maintain continuous surveillance in this vast sea area.

The global environment will continue to be marked by change, entailing challenge and risk. The invaluable geographical location of Sri Lanka will become an economic asset with a well-articulated foreign policy posture crafted by the country. The emerging new dynamics of the Indian Ocean will demand SLN to modernise its naval force in terms of shaping our naval fleet, sensors and training in order to undertake various threats by understanding ways and acquiring means to face the challenges in future.



A Vigilant Sailor

CHAPTER 6

MARITIME FIGHTING POWER

Maritime fighting power and war fighting specialty – both allow our credibility and utility. When required, we are called upon to protect our country from internal and external aggression.

Naval forces have marvellous military power within them. It is this military power that enables them to perform desired roles spanning the entire spectrum of conflict. For this, it is essential that the SLN maintains the required level of combat power and state of readiness at all times. Combat power is a Navy's effectiveness in any military application. It is a combination of both tangible and intangible factors. If ships/craft, weapons and high-tech equipment are the hardware by which a navy performs its roles, the personnel behind the machines provide the energy that drives this hardware, while sound doctrines, operating philosophies and practices provide the structure that develops this potential. Understanding the cultural and historical features of a situation and incorporating that into planning and training, will give us key insights into how we can best apply fighting power.

Maritime fighting power defines our ability to fight and achieve success in maritime operations. It is made up of an essential mix of three inter-related components as follows:⁵⁰

- Conceptual component (the thought process).
- Moral component (the ability to get people to fight).
- Physical component (the means to fight).

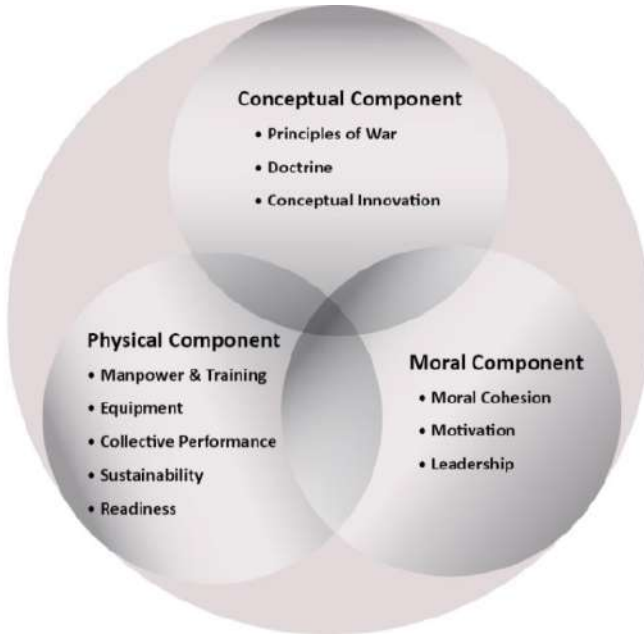


Figure 6.1- The Components of Maritime Fighting Power⁵¹

The conceptual component sits over the moral and physical components, not because it is necessarily more important, but because it defines the direction and shape of the others.

Conceptual Component

The conceptual component provides a framework of thinking within which military personnel can develop understanding about both their profession and the activities that they may have to undertake. This component provides commanders with the ability to understand the context within which they operate and serves as the foundation upon which creativity, ingenuity and initiative may be exercised in complex situations. The conceptual component comprises three elements; the Principles of War, Doctrine and Conceptual Innovation.

Principles of War

The principles of war influence the conduct of war in its widest sense. At the strategic level they provide criteria against which courses of action affecting the national interests or the planning of a campaign may be tested. At lower level they provide a guide for the planning and conduct of operations on the battlefield. They are not rules of a game but act as guides to action or fundamental tenets forming a basis for appreciating a situation and planning, whilst their applicability and relative importance change with the circumstances. Although framed in relation to war, they also apply in every form of military activity, whether in war or peace. Underpinned by ‘understanding’, ‘mission command’ and the ‘manoeuvrist approach’. They represent enduring principles, whose expression and emphasis change in relation to context. The principles of war is comprehensively dealt in Chapter 7 of MDSL.

Doctrine

Doctrine deals with laying down processes, procedures and methodology of employment of resources (forces) for various operations of war under different conditions. It is based upon historical experiences of successes and failures in battles and wars. It governs the coordinated action towards common objectives. As such, it is primarily oriented towards the operational level of warfare. Naval doctrine will first consider war fighting aspects but will eventually include military operations other than war. Within the broader guidelines of national strategy, doctrine provides the basis for mutual understanding and trust within our naval service as well as with sister services. MDSL is the SLN’s foremost doctrinal publication. It is a guide to understanding the unique nature of SLN’s contribution to national security and how the SLN goes about its business. MDSL provides an authoritative guide to current naval thinking and is thus a vital component of the training and education of all the SLN personnel. It is fundamental to improve own knowledge and own service. Likewise, a key element in ensuring that all Sri Lankans’ to understand better, the continuing importance of their notion of the sea and maritime power.

Conceptual Innovation

To meet government policies, SLN required to develop future defence capabilities, 'Out of the Box' concepts and ideas bring an element of uniqueness into operations and must be encouraged during the doctrine development process, for the innovative application of combat power. SLN maintains a progressive programme of intellectual and academic engagement, education and experimentation. Understanding the doctrine contributes directly to the conceptual component. The conceptual component is also updated by conceptual innovation, capturing how our thinking changes over time in response to new technologies, structures and challenges.

By early 1990s LTTE had developed suicide boats, since they were unable to operate at a very high speed at the time, our Fast Attack Craft could outmanoeuvre them. However, LTTE improved their suicide craft, using multiple engines with higher horse power during the ceasefire from 2002 to 2006. With these improvements they were able to actually threaten the Fast Attack Craft. This became very evident when the hostilities began in 2006. So we had to look for an alternative to the new scenario. The Sea Tiger boats were capable of doing 40 knots which is about 80 km/h. We had to develop a counter strategy. Our answer was the small boat concept. Thus, SLN developed a low profile small boat with superior speed, high manoeuvrability and lethal fire power similar to the weapon outfit of a Fast Attack Craft. Squadrons of these craft were stationed in strategic locations. This small boat concept was successful in effectively countering LTTE suicide craft threat.

The Man behind The NAVAL STRATEGY -
VICE ADMIRAL WASANTHA KARANNAGODA
(BUSINESS TODAY February 2009)

Moral Component

The moral component concerns the human aspect of maritime fighting power. Warfare is a human activity and the moral component exerts a decisive psychological influence, both individually and collectively. While morals (principles of right and wrong) are one aspect which enhances cohesion and morale (a sense of confidence and well-being) is another which promotes courage and commitment. The moral component is considerably broader.

The moral component of fighting power is about ability to get people to fight. It comprises following three interrelated functions:⁵²

- Moral cohesion (prepared to fight).
- Motivation (enthused to fight).
- Leadership (inspired to fight).

Moral Cohesion

Moral is the sense of shared identity and a determined purpose that gives a force the will to fight and succeed. Moral integrity supports cohesion. Cohesion occurs when individuals work together, share tasks and rewards, and provide mutual support to achieve a common aim. Moral cohesion is built on shared experiences, a common sense of worth, appropriate discipline and collective identity and;

- Sustained by shared common values and standards. SLN core values were evolved and inculcated over a period of 69 years and these values define what is important to the Navy as a whole and to its people individually. Our values guide our behaviour, they bind us together and is a source of strength and a source of moral courage to help shape our actions. Values are the rules which we make decisions about right and wrong, good and bad, should and shouldnot.
- Embodies genuine and profound comradeship that endures even as the experience of violence and fear of death and injury begin to pervade an individual's conscious and subconscious.

- A feeling of pride and mutual loyalty uniting the members of a group, an esprit de corps, reinforces unit identity and cements moral cohesion. Leaders should give due consideration for professional ethos, self-esteem and tradition.

Motivation

Motivation is a process of stimulating people to accomplish desired goals. It is mainly a product of training, confidence in equipment, leadership, management, reward, discipline and mutual respect. Motivation requires an understanding of both what is going on and what is required. Motivation and high morale (the will to fight and a confidence in succeeding) are interdependent.

Leadership

Leadership is of paramount importance in the military related activities to work as a team in order to obtain desired results. Since military activities are dealt more often with life and death, there should not be a slightest possibility of making mistakes and misunderstanding. Hence, it is compulsory to have proper understanding and cooperation with one another in the SLN. Leadership is not the preserve of senior officers. Decisive leadership must be practiced at every level and mandatory for the success of any operation. The exercise of leadership is related to individual and group dynamics and the context within which assigned missions and tasks have to be achieved. While born leaders are rare, training and experience can develop latent potentials.

Physical Component

The physical component of maritime fighting power provides the means to fight. This component consists of manpower and training, equipment, collective performance, sustainability and readiness.

Manpower and Training

‘Manpower’ is the most important constituent of the ‘force structure’, the other being the ‘military hardware’. As technological and equipment superiority is never guaranteed, SLN invests in its people to provide

the decisive edge. The core strength of the armed forces is the human resource; the officers, men and women. It is essential that we invest in our people to ensure there are sufficient numbers who are capable and motivated. A sustainable workforce demands investment in recruiting, developing and retaining high-quality personnel. As a consequence, the need to recruit the right quantity with requisite level of quality, pre/post induction training and subsequent retention assume importance for military planners. The human resource of SLN is sourced from a cross-section of the Sri Lanka populace and from varying socio-economic backgrounds. The selection process of SLN ensures the selected personnel have the requisite physical, mental and intellectual potential.

Human capability needs to be regarded as a key resource and should be fully integrated into defence planning. SLN, apart from contributing to Defence and Security also provides a distinctive strand in the multi-hued fabric of our nation through high standards of integrity, professionalism and excellence. Rather than simply relying on fire power and technical capabilities, our commanders must seek out, develop and exploit human qualities such as positive thinking, resilience, adaptability and empathy to build the agility which Defence will need in the future operating environment. Commanders should also be the champions of innovative practices.

Manpower undoubtedly is the most expensive resource of an organisation and it could be easily misused or underutilised, hence management and controls are paramount.

The ability of an organisation to maintain the human resource highly motivated and effective, largely dependent on providing opportunities to each and every individual to develop fully, to utilise his/her abilities to the full, and to find continuing job satisfaction. Development of human resource, therefore, has to be a persistent process and continuous professional development (CPD) can be considered as a means to achieve the objective.

The next human component which is training which builds confidence to fight and success at war. Training demands that the personnel inducted

into the complex network of war fighting, must be taught and exercised appropriately to overcome the rigours that accompany the job profile. Training is to be used to impart technical skills and knowledge about the organisation and its external environment. Training programmes should include conceptual and interpersonal skills, besides technical skills and include development of attitudes as well. To condition naval cadets and recruits for the hardship and challenges of operations, each undergoes a comprehensive initial training process at various training establishments in SLN and General Sir John Kotelawala Defence University. The revolutionised pace of development of advanced military technologies and concepts demand a higher degree of professionalism than ever before. While conventional class-room instructions are necessary to achieve this, complementing these with training and exercises both at sea and land is indispensable. This imperative stems from the fact that the operational complexities, the effect of weather on operations and the high stress levels in the maritime environment can only be appreciated through experience at sea. SLN therefore, places very high emphasis on selectivity when making appointments and experience at sea and land which is duly supported by focused training. For more advanced and specialised training naval personnel are sent abroad especially to countries in the region and a few western countries. Finally, training should shape our fleet into a professionally competent and a dynamic force capable of implementing the national maritime strategy.



Developing of Core Competencies

Executive Branch

The path to command is through the Executive or the Seaman branch. Only sea-going officers of the Executive Branch can exercise command of ships. The officers and sailors of this branch consist of most of the seagoing occupations and can specialise in any of the following disciplines:

- Navigation and Direction.
- Gunnery.
- Anti - Submarine Warfare.
- Communication.
- Hydrography.
- Diving.
- Physical Training Instructor.
- Naval Observer/Aviator.

The Executive branch officers are specialised in Navigation, Communication, Anti-Submarine, Gunnery, Diving and Hydrography. We are proud of our sailors going to sea under trying conditions to safeguard the nation. They proved their skills, professionalism by crushing sea

tigers in brown, green and even in blue waters with the effective support of other branch naval personnel onboard. It would not be wrong to say that after the Falkland War in 1982, after a period of 25 years, it was the officers and sailors of SLN that fought a battle at sea approximately 1835nm (3400km) away from home.

Engineering Branch

SLN has a professional team of expertise in Marine, Mechanical, Hull Repair (Shipwright), Automobile Engineers and sailors which comprise the Engineering branch whose primary role is to maintain/upkeep of a varied and increasing fleet of modern ships/ craft while ensuring the technical seaworthiness of the fleet. Basically, the focus of this branch is to keep the fleet at sea. Further, they are involved in design and construction of naval ships/craft. This branch also maintains slipways, most machinery and vehicles in SLN. In addition, operators of naval vehicles including heavy machinery are also assigned to this branch. The cradle of the Engineering branch is the Naval Dockyard in Trincomalee.

Logistics Branch

A sound logistics support is one of the key elements of any professional Navy. No war can be fought without an effective logistic support. Logistics sustain the required tempo of operations. It is the logistics branch that provides a silent service to execute battle design and takes care of logistic support of SLN. It is involved in planning, forecasting and execution of the budget, supply chain management, information technology and inventory management of fuel, spare parts and other items required for day to day running of ships and establishments. In addition, logistics branch is entrusted with meeting the food and clothing requirements of the naval personnel, which play a crucial role in maintaining their morale. Applied correctly, logistic support can produce a force multiplying effect out of all proportion to the scale of resources involved.

Electrical & Electronic Engineering Branch

A warship is a mini-floating city with an integral power generation system, complex communication equipment, various electronic and

navigation equipment. For a ship to be able to fight effectively, all these equipment and machinery must keep working at peak efficiency. This department's special contribution during the conflict came in the form of not just technical support but as an active solution provider by speedily acquiring and deploying network centric surveillance systems such as over the horizon high frequency surface wave radars, day/night cameras, AIS, CCTV, special small target tracker radars which were installed in vulnerable points and remotely providing the battle picture to command Headquarters/Naval Headquarters for real time decision making. In the context of modern warfare with network centric operations, electrical and electronic engineering branch personnel will play a vital role and responsibility to meet the challenging tasks.

Medical Branch

Physical and mental health of naval personnel is imperative for an efficient Navy. The medical branch functions as a fully-fledged branch that executes its responsibility of maintaining the general health of all naval personnel in war and peace. This branch consists of Medical and Dental personnel. They also undertake combat, sports and diving medicine.

Naval Infantry Branch

The Naval Infantry constitutes the land fighting component of SLN to conduct combat operations on land. Initially when this branch formed in 1983 with mere 11 men, it was called the Naval Patrolmen branch as there was a requirement of a separate branch to defend the naval bases and release more seaman and technical branch sailors for the classical naval role. With the escalation of terrorist activities in July the same year this branch expanded rapidly as it necessitated the protection of outlying Naval Detachments such as the Naval Livestock and Agricultural Project (NALP) and protection of naval road convoys where additional skills in land fighting and man power were needed. When the Sri Lanka Army launched the offensive operation in Wannai, three battalions of this branch was formed to take over the security of land areas liberated and also to provide security for the islands in the North where new bases

were established.

The Naval Infantry functions as a fully-fledged branch that could be utilized for any infantry and amphibious mission. Naval Infantry branch consists of Navy Infantry and Marines. It is responsible for conducting land operations, providing protection to harbours, shore establishments and coastal belt security by integrating other support and technical elements. The Marines is the force that is recently designed and capable to carryout amphibious operations in the littoral waters operating from different type of ships/craft or helicopters and secure strategic points to considerable distance inland or as far as shipborne logistics could be provided.

Band Branch

SLN Band has its history dating back to the days of Royal Ceylon Navy and the branch had been initially established in 1956 with a western orientation. Since then, it caters to the musical requirement of the services as well as the public sector. It promotes Sri Lankan unique culture within SLN, local and overseas. SLN band comprises of the Ceremonial band, Programme band, Dance band, Pipe band, Beat group, Cultural troupe, Oriental orchestra and the Calypso band. It caters to the musical requirements of the service mainly; presidential inaugurations, parades, banquets, special ceremonies for foreign dignitaries, state functions, international parades and sports festivals.

Provost Branch

The Naval Provost branch of is one of the youngest branches in SLN, which was established in year 2000. It is entrusted with the responsibility of maintaining discipline, accountability and enforcement of law and order among the naval personnel by prevention of crimes, detection of crimes, apprehension of offenders, conducting preliminary investigations for necessary disciplinary action and providing assistance to all naval authorities in war and peace on all disciplinary related matters.

Information Technology Branch

The Information Technology branch established in year 2001 endeavours to support the naval administrative functions to be carried out efficiently during operations and helps decision-making by providing speedy access to required information. The personnel serving in this branch maintains a high level of effective technical support while enhancing productivity, promoting IT education and enhancing user satisfaction. In addition, it involves in designing and implanting secure and critical networks including manning of security operations and network centric operation centres.

Civil Engineering Branch

Officers of the Civil Engineering branch includes officers qualified in architecture and together with sailors of this branch contribute immensely in the sphere of designing and construction of varying magnitude and variety; such as jetties/piers, multi storeyed buildings, roads, swimming pools, water purification and distribution projects and other marine infrastructure and also holds the responsibility in maintaining them periodically. In addition, sailors of Volunteer Special Scheme (VSS) who excel in different skills of the construction field of this branch are involved in nation building work in great proportions saving a colossal sum of money, since the end of the conflict. With the development of the Navy and the expansion, Civil Engineering branch separated in to an independent directorate in year 2004, prior to which it was functioning as an entity under the Directorate of Engineering.

Legal Branch

The Legal branch of the SLN is responsible for advising the command on routine legal issues and procedure arising from administrative and disciplinary matters and functions under the Director General Services. The directorate of naval legal services was formed in year 2005 and headed by a senior state counsel in the Attorney General's department commissioned in the VNF for better knowledge and experience gained through legal practice. While the legal officers shoulder a proactive responsibility of educating naval personnel on Law of the Sea, Laws of War,

Human Rights, Criminal Law, Fundamental Rights and in general, the legal consequences of violation of any such laws during military operations, its main function remains to be prosecutions before court martials, negotiating and drafting agreements pertaining to procurements and advice command on issues which may arise with duties connected with safeguarding the territorial integrity with other stakeholders, within the framework of domestic and international law while satisfying provisions of LOSC, Geneva Conventions and its protocols.

Special Boat Squadron (SBS)

Formerly inaugurated in 1993, SBS consists of the most versatile and highly trained waterborne elite naval troops who are tasked for small scale clandestine covert or overt special operations on land and sea. With time, the force grew from its original amphibious force concept to clandestine operations in coastal and deep interior, long range reconnaissance patrol, anti-ship hijack and hostage rescue, beach survey, riverine operations, VIP protection, rappelling and heli-borne operations with improved competencies. In addition, to many successful brown water battles fought in the Northwestern coast, the Eastern coast and the Jaffna lagoon, the battle for Muthur (Trincomalee) in year 2006 and the successful first line barrier carried out by this force along with RABS as part of the strategy of the Navy to prevent the enemy leadership from fleeing through the sea during the final days of the Humanitarian Operation in the year 2009 are some of the key milestones of this squadron. SBS are the invisible raiders of the Navy who are trained with the US Seals and capable of carrying out combat operations on land, sea and air. Today, SBS shares their hard earned knowledge on Asymmetric Warfare (AW) to other nations through AW courses conducted in Sri Lanka.



SBS in Action

Rapid Action Boat Squadron (RABS)

The RABS came into being specializing in small boat combat tactics during the final phase of the Humanitarian Operation when coastal strongholds of the LTTE was defeated and SLN filling the vacuum by moving in small boats for coastal domination and guarding the sea water flank for the operations in progress. The Squadron is based on swarming tactics in which a flotilla of small boats, operating as swarm confronts enemy craft. Together with SBS, the RABS engaged with many close quarter significant encounters with the enemy up to the final days of the war in preventing the enemy leadership from escaping the barrier and compassionately assisting those civilians escaping from the clutches of the enemy.

With the increasing demand for supporting the civilian population in times of frequent natural disasters occurring in our country, the role of the RABS has been reviewed and restructured after the conflict to suit these challenges. Accordingly, this squadron has been divided in to two main units as the Rapid Action Boat Unit (RABU) which will be the offensive boat component of RABS for exercising sea control and sea denial in limited maritime domains either as a standalone unit or in company

of other offensive formations and the other as Rapid Response Rescue and Relief Unit (4RU) which will undertake Humanitarian Assistance and Disaster Relief (HADR) activities to support civilian population primarily for rescue and relief duties during water related disasters.



SWARM Tactics of RABS

Sri Lanka Volunteer Naval Force

Sri Lanka Volunteer Naval Force (SLVNF) was renamed and formed on 22nd May 1972. SLVNF has contributed and supported the regular force of the SLN in various ways in fighting against insurgency and in HADR operations. Today, SLVNF personnel are supplementing the regular naval force in operational, administrative, technical, training and nation building endeavours. Apart from that, they are immensely contributing to healthcare and sports in SLN.

Civilian Administration

Civil administration of SLN dates back to the Royal Ceylon Navy when most of the workshops and financial matters were handled by the civilian staff. The civilian manpower force of SLN from the inception has been engaged in various occupations within the Navy and was part and parcel of SLN. Further, their uniform counterparts they contributed immensely

to the progression of the Navy. They are diverse and cover virtually a wide range of occupations from ordinary labourer to a medical surgeon in order to optimising the workforce. The Civil Administrative Officer and Director Finance are responsible for handling all administrative aspects of civilian staff and financial matters respectively.

Equipment

A credible fighting force depends upon sufficient and effective equipment, optimized and scaled according to likely challenges. Our equipment should match the envisaged scale and intensity of use and easily accommodate human, system and platform requirements. They form the hardware that ultimately delivers combat power through its physical form to project a country's military might, technological prowess and combat readiness. Following are the key equipment:

Major Vessels

These ships are designed to operate independently in most navigable areas of regional/extra regional oceans. They are capable to operate extended periods at sea by replenishing supplies including fuel, water, provisions and ammunition while underway. Though these vessels have lesser combat power, they have high endurance and good surveillance capabilities. SLN possesses different types of major vessels acquired from different countries and deployed mostly for surveillance in EEZ.



SLNS Parakramabahu

Patrol Craft

Smaller vessels are designed to operate for much shorter periods. Their tasking is usually to cover the maritime jurisdiction of the country. Patrol craft are small, fast and robust vessels armed with medium and short ranged surface and anti-air weapons. With a relatively lesser draught and high manoeuvrability, these craft are optimized for coastal and offshore defence and also suitable for constabulary tasks closer to the coast or other shallow areas where the larger patrol vessels are constrained by their draught. SLN possesses with different types of patrol craft and deployed mostly in island's territorial waters and her EEZ.



Fast Attack Craft

Auxiliaries

These vessels are specifically designed to support other ships with limited self-sustainment capacity. They carry and have the ability to lift personnel, deliver provisions, general stores and replenish fuel.



A 543

Amphibious Ships

These vessels are designed to embark land forces and their equipment and have an inherent; although limited, capacity to sustain land operations. These vessels typically have a large radius of action, material handling equipment to embark and disembark troops and some capacity to support other ships.



SLNS Shakthi

Diving Tender

SLN possess one converted Diving Tender. It mainly utilized for Diving and Salvage operations.

Disaster Response Unit (DRU)

The main objective of DRU is to provide infrastructure facilities to disaster relief teams in face of disasters. Moreover, DRU acts as a unit capable to store and maintain important disaster response equipment in operational condition at a centralised location in order to distribute among disaster relief teams swiftly in time.



Facilities Available in DRU

Naval Aviation

Many regional Navies have naval aviation as a force multiplier. Development of dedicated air wing for maritime surveillance is a necessity considering the dynamics in the IOR. The present strategic environment requires timely and speedy information gathering and real time information sharing. Therefore, it is timely that SLN recommence the endeavour of forming the Naval Air Arm. At present SLN possesses five helicopter landing platforms and few more to include in the inventory with the advancement of SLN Maritime Strategy 2025. Training is already

underway with the assistance of Sri Lanka Air Force. In addition, steps have been taken to acquire UAVs to commence limited air surveillances.



SLNS Sindurala

Collective Performance

The third, equally vital, component is collective performance. This envisages that all branches of SLN and departments in a ship are developed as one team. It facilitates a common and clear purpose, and understanding. No naval operation or any other activity can be achieved successfully without coordinated teamwork. Successful conduct of naval operations, at any level, necessarily involves synergized efforts of various disciplines. This requires the personnel to understand and identify with the organisational goals and wilfully contribute their part in achievement of the task at hand. To achieve collective performance, leaders at all levels, must maintain an open mind towards suggestions and encourage free thoughts and ideas. Each member of the team must feel proud and responsible. This can be achieved only by self-discipline and giving due considerations to subordinates' views and aspirations and at the same time educating them to understand and identify with the organisational goals. Leaders must create conditions conducive for effective teambuilding within the organisation and nurture the teams to achieve the set goals.

Sustainability

When a nation operates in forward areas at the end of long supply lines without a significant land – based supply structure, it needs the ability to re-supply at sea. Consequently, naval forces carry their own ammunition, spares, and consumables as well as support and repair facilities for use early in a crisis or throughout a protracted conflict. This self-sustainability provides the Navy to create an environment that will bring success. The ships are designed to travel significant distances without replenishment. Therefore, sustainability is a critical element that provides us effective fighting power. It is enabled by combining;

- Logistics.
- Personnel and administrative force structures.
- Training and equipment.
- Infrastructure.
- Communications and information management.

Readiness

To be effective instruments of power, the naval forces must be available and credible not just when crises occur, but daily wherever one's presence manifests and wherever potential adversaries must perceive one's firm commitment to defend our interests. The naval forces have been consistently made to be readily available to defend one's vital interests. Naval forces at first used to be deployed to protect SLOC from adversaries. Even today, the national economic interests are tied directly with sea-based commerce. The readiness of naval forces promote regional stability and safeguard the flow of resources amongst trading partners, helping preserve one's national well-being. The SLN holds forces at varying states of readiness consistent with the assessed risks and threats. Some of the readiness postures are;

- Maintain balance force structure along with available resources to meet any contingency.

- Deployed naval forces to demonstrate that SLN is involved and committed to shaping events in the best interest of the country.
- Provide initial crisis response wherever necessary.

CHAPTER 7

PRINCIPLES OF WAR

The days back in the inception of human being existed in the ancient world there was an uncertainty in dealings amongst them, danger in relations, friction and struggle one another for human will. This condition prevails to date and appears to be continued in the future. This paradox along with organised society created the second oldest profession in the world, which is said to be the 'Profession of Arms'. The development of technology with the organised societies led to dominate over the individuals and other organised societies to suppress human will over the others in order to sustain own. This mechanism added new concept called warfare.⁵³

The word war derived from the old high German language 'werran' meaning to say; to confuse or to cause confusion. The same meaning continued to exist in the English language word 'werre' or war.⁵⁴ Sun Tzu wrote the Art of War in 5th Century BC and endorsed the similar meaning saying that "All warfare is based on deception."

Warfare strategically framed mainly based on the human will, political objectives, economical might, information, diplomacy, human, machine, equipment and technological interaction, logistics, traditions, norms, customs, laws. Summarily Diplomacy, Information, Military and Economy (DIME) are identified as main instruments of national power to protect own interest whilst influencing the interest of others. National policy objectives are achieved through the coherent and effective application of Diplomacy, Military and Economy of national power underpinned by Information. Full spectrum of approach is the strongest position/condition one can gain in the face of any given situation to achieve national interests.

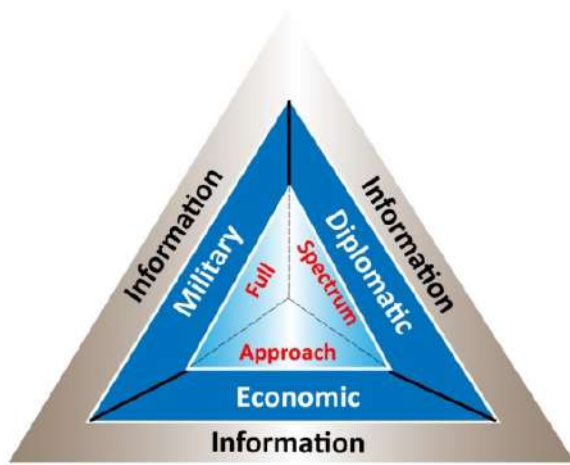


Figure 7.1 – Instruments of National Power

The military component of the national power mostly used to confuse the enemy or belligerent parties. However, there are occasions where other components of national power utilized effectively to achieve own interest. Conceptual component precedes other two components leading to the thought process in the maritime fighting power.

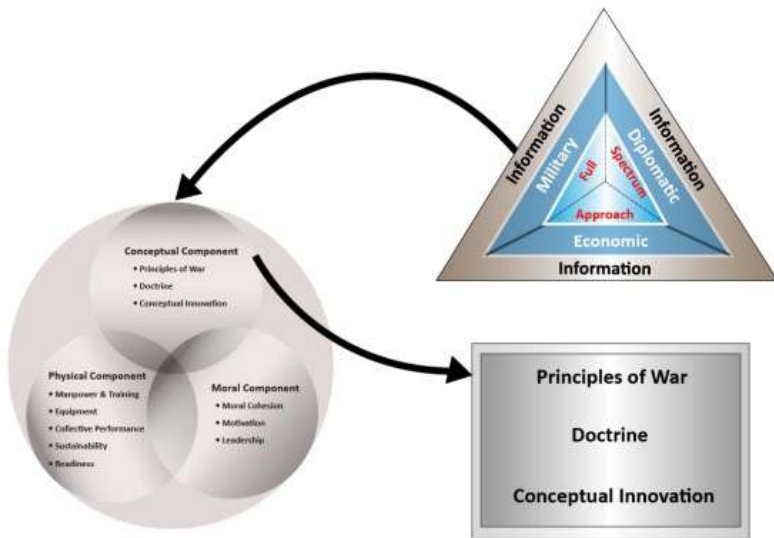


Figure 7.2 – Maritime Fighting Power and DIME

The conduct of warfare continues to change based on desired political objectives, human interaction, cultural norms, environment and technology. These changes require intelligent study, as they alter the character of warfare in ways that can affect success. Such study is assisted by understanding the conduct, levels and Principles of War.

The ten Principles of War used by SLN have been developed as basic principles for the employment of maritime forces. These principles guide commanders and their staffs in the planning, employment, development, deployment and logistics of maritime forces. The relative importance of each principle may vary according to the context of their application and require correct judgement, common-sense and understanding of the particular context.

Selection and Maintenance of the Aim

This is the main brace of all the Principles of War. This cardinal principal splices the entire spectrum of the conflict starting from strategic, operational and tactical levels. Military action is never an end in itself and must always be viewed as a means to an end. The end, therefore, must always be kept clearly insight and the aim of military action must be selected carefully and maintain throughout.

The Aim of Allied plan for the ground phase of Operation OVERLORD is to direct every military operation towards a clearly defined, decisive and attainable objectives. The objectives must directly, quickly and economically contribute to the purpose of the operation. Each operation must contribute to strategic aim and objectives. Actions that do not contribute directly to achieving the aim and objectives should be avoided. At a macro-level, the US strategic objective was to 'defeat Germany first'. By today's definitions, OVERLORD was essentially a campaign plan that had both strategic and operational aim and objectives. Despite the magnitude of OVERLORD (aimed at an unconditional defeat of Germany) and the numerous tactical operations that it would require; the campaign plan stated the commander's intent clearly, simply and succinctly. The understanding conveyed to subordinate commands would enable confidence, encouraged freedom of manoeuvre and ultimately be key to both operational and tactical success. Eisenhower wrote a simple and inclusive order for OVERLORD; 'Land on the Normandy coast. Build up the resources needed for a decisive battle in the Normandy-Brittany region and breakout of the enemy's encircling positions.'

Maintenance of Morale

Morale is a factor, which bears on the human element in war. It is the general spirit or state of mind of a group of people as reflected by their behaviour under all conditions. High morale engenders courage, energy, cohesion, endurance, steadfastness, determination and a bold, offensive spirit. Good leadership, thorough training and success on operations will all contribute to high morale. Actions taken directly or indirectly to destroy the enemy's morale are an important means of reducing the enemy's combat effectiveness.

Dwight D. Eisenhower (Supreme Allied Commander) on 05th June 1944, made a speech to the troops prior launching Operation OVERLORD to boost their morale and to help them realise just how important their jobs were. He said,

“Soldiers, sailors and airmen of the Allied Expeditionary Force! You are about to embark upon the greatest crusade towards which we have striven these many months. The eyes of the world are upon you.”

These words that made the soldiers not only think about the honour they will carry in the future but what a great sacrifice they are making for their country is immeasurable.

Further, Supreme Allied Commander ensured unhindered flow of logistics throughout the operation. In addition, he directed his subordinate commanders to ensure safety and security of his men by providing required ordinance which facilitated maintaining the morale of the troops throughout the operation.

Concentration of Force

Success in conflict depends on achieving a concentration of force at critical time and space. Concentration of force is the ability to apply decisive military force at the right place, at the right time and in such a way as to achieve a decisive result. Concentration does not necessarily imply a massing of forces; it often means having them so disposed as to be able to unite to deliver the decisive blow or to counter an adversary's strike.

Five days after the D-Day invasion, troops immediately began installing two massive temporary harbours that had taken six months to construct back in England. All told, the Allies unloaded approximately 2,500,000 men, 500,000 vehicles and 4,000,000 tons of supplies at the temporary harbours over the remaining course of the war. The total Allied losses at Normandy are estimated to be at least 4413 and total Allied deaths in the Battle of Normandy, which dragged on until August, topped 226,000. But with the concentration of forces and massive influx of troops and equipment, D-Day marked a decisive turning point in the war.

Economy of Effort

Economy of effort is the prudent allocation and application of resources to achieve the desired results and needs to be balanced with the other Principles of War, notably security and sustainability. Economy of effort acknowledges the need for a degree of redundancy in war time to allow for attrition, but it is opposed to a wasteful allocation of resources that does not maximize the contribution of those resources to the achievement or maintenance of the aim.

Although the D-Day invasion was the most massive amphibious assault ever conducted, the principle of economy of force would actually be applied in many ways during OVERLORD.

Economy of force measures were applied before, during and after D-Day. In the months prior to the invasion, the Allies began to work closely with the French resistance. Teams of two officers (British or American) and a radio operator were dropped all over France to train French Resistance fighters. Several groups of Special Air Service (SAS) men also parachuted into France with jeeps to undermine German lines of communication.

The British Special Operations Executive (SOE) supplied the resistance at night with airdrops in remote fields temporarily lit by torch at the sound of aircraft. With the assistance of these small teams, the resistance would play a vital role prior to and after D-Day by sabotaging bridges, railways, and telephone lines, assassinating German officers, and providing targeting information and other intelligence.

Sustainability

Sustainability refers to the support arrangements necessary to implement strategies and operational plans. These arrangements include those personnel efforts and logistics necessary for the efficient support of a force committed to operations. The principle of sustainability is considered as an element of maritime power itself, especially a base at which all the material necessary to equip a ship and prepare ship's company for sea is located. It comprises with training institutions, logistics, repair and maintenance facilities and medical services that necessary to enhance operational abilities and support the war fighting for maritime forces.

Although, the principle of Sustainability is normally thought of in the context of an offensive or defensive action, in the case of OVERLORD, looking at the logistical and engineering efforts that were undertaken to be able to ultimately achieve and sustain mass provides an interesting study. The purpose of sustainability is to concentrate the effects of combat power at the most advantageous place and time to achieve decisive results.

Due to limited landing craft (enough built for five divisions), numerous obstacles along the beach and heavy defences of the Atlantic Wall, achieving sustainability under fire on the beaches of Normandy on D-Day would be difficult. Achieving and sustaining the build-up without adequate ports or secure airfields in enemy territory would be a paramount undertaking. To begin with, massive supplies, personnel, and equipment would have to be pre-positioned in England in preparation for OVERLORD. These efforts were complimented by the development of innovative engineering concepts and supporting specialised equipment.

Logisticians faced unprecedented challenges during the build-up in preparation for the cross-channel invasion. They started production planning two years in advance of D-Day, the build-up of supplies in England a year ahead and planning of detailed logistical support six months before the landings.

Offensive Action

Military forces take offensive action to gain and retain the initiative. In most circumstances, such action is essential to the achievement of victory. When offensive action is required, it must be swift, decisive and should be directed towards the achievement of the end state. Offensive action is not limited to the application of force but encompasses the

proactive use of non-kinetic capabilities such as information dominance and influence.

The essence of the principle of offensive action is that even when forced to adopt a defensive posture, the defensive battle itself can succeed only when it reverts to the offensive. One great advantage of the offensive is that the attacking commander has the initiative and gains liberty of action. Even if he is weaker than the enemy in the overall confrontation is, he can attain numerical superiority at his selected point of attack.

The principle of Offensive Action was used effectively throughout Operation OVERLORD, in the physical dimension of the attack and in the mind set.

After the war, Goering noted: "Under Allied destructive pounding, the Luftwaffe had declined to a sad state by D-Day. The fact was that in this state, to send his bombers to battle with the enormously superior Allied Air Force would have been frank suicide and he chose to nurse them cautiously for night mine-laying operations off the beaches which might hamper the build-up."

'General Eisenhower was up and down the line like a football coach, exhorting everyone to aggressive action. He constantly urged his commanders to ask for full air support in their drives. He demanded strong pressure against the Germans at all times to keep the front in motion.' The enemy lost the initiative and was forced into a defensive posture.

The German General Warlimont (Deputy Chief of the Armed Forces Staff) said: "If you ask why the German Air Force did not bomb the places where you landed more effectively, the answer is that they were unable to break through your defences in order to find and hit the targets at all."

Security

Security is concerned with measures taken by a command to protect itself from espionage, sabotage, subversion, observation or surprise. It is of basic concern during any campaign or operation. Security is required to operate effectively with minimal interference from the enemy. Commanders at all levels are responsible for the security of their force. Excessive caution and timidity which restrain a Commander from acting offensively and taking risks in battles are not implied by this principle. The principle of security demands that all risks should be foreseen and either accepted against. It is not a breach of security to take risks; but it is a serious breach not to realise their being taken.

Adherence to the principle of Security was absolutely essential during OVERLORD planning and preparation. Known information leaks could have caused the operation to be delayed, revised or even cancelled. Unknown security failures could have led to another Dieppe disaster on a larger scale. The purpose of security is to never permit the enemy to acquire unexpected advantage. Security enhances freedom of action by reducing friendly vulnerability to hostile acts, influence or surprise. It results from the measures taken by Commanders to protect their forces. Staff planning and an understanding of enemy strategy, tactics and doctrine will enhance security. Although risk is inherent in military operations, application of this principle includes prudent risk management, not undue caution. Protecting the force increases friendly combat power and preserves freedom of action.

Cooperation

Cooperation allows coordination of all units to achieve the maximum combined effort. Cooperation occurs when Commanders proactively seek to understand and support the objectives of fellow Commanders working to achieve the same aim. The effectiveness of a force is multiplied when this occurs. Mission success is always facilitated by

close cooperation with other government and non-governmental agencies. Coincident of objectives, doctrine and resources usually result in synergies and force multiplication.

The principle of Cooperation was present throughout Operation OVERLOAD from the planning to the execution of the operation.

This concept was embedded in General Eisenhower's mind when he became the Supreme Commander of the European Campaign and specifically for Operation OVERLORD he made sure it was present in all aspects; this is clearly evident in the command and control structure he established.

Cooperation was also demonstrated in subordinate echelons during planning and execution. An example is in the Supreme Commander's designation of General Montgomery to command all Armies (British, Canadian and US) for the initial phase of the operation and when the German Seventh Army exposed themselves to be trapped when they attempted to counterattack to cut the Allies off in the Avranches. General Montgomery was able to take advantage of their mistake because he had unity of command. The objective of seizing Brittany ports was delayed to take advantage of the situation. General Bradley communicated with Field General Montgomery, who was still responsible for direction of operation pending the time the Supreme Commander took over Tactical Command on the continent. Bradley outlined his scheme with which the Field Marshal at once agreed. Plans were promptly worked out and orders issued. The ring of steel began to close around the trapped Seventh Army. In a retrospective look at the command and control organisation, it would be seen today as a lead nation and functional type command and control.

Surprise

Surprise can produce results out of all proportions to the effort expended and is closely related to security. The ability of the land force to disperse and rapidly concentrate is critical to achieving surprise. Not all activities can remain concealed, so deception should be employed to conceal the intent of any action. Surprise is an effective and powerful influence on combat operations and its psychological effect can be immense. Every endeavour should be made to surprise an adversary and to guard against being surprised.

The use of the principle of Surprise is probably the most interesting principle to study during OVERLORD planning and execution. Many deception plans were used to confuse the Germans as to the date and location of an Allied invasion. A key reason these deception plans worked so well was that the Allies 'broke the Enigma code early in the war that could be used to decode secret German messages.' This allowed the Allies to monitor German message traffic and determine whether deceptive efforts worked or not prior to their subsequent efforts. A very sophisticated deception plan named FORTITUDE was implemented by the US and Britain to convince Hitler the invasion was coming elsewhere and that the invasion force was larger than its actual size.

Flexibility

Flexibility is the capacity to adapt plans to take account of unforeseen circumstances to ensure success in the face of friction, unexpected resistance, or setbacks, or to capitalise on unexpected opportunities. It relates to the ability to maintain effectiveness across a range of tasks, situations and conditions; the ability to dynamically manage the balance and weight of effort across different lines of operation in time and space; and the ability to rapidly identify then appropriately respond to new threats and opportunities.

The principle of Flexibility was present throughout the planning and execution at both the strategic and tactical levels of war.

Effective manoeuvre keeps the enemy off balance and thus also protects the friendly force. It contributes materially to exploiting successes, preserving freedom of action and reducing vulnerability by continually posing new problems for the enemy. Strategically manoeuvre was present in the sense of the stratagem considered: the operation was synchronized with an offensive on the Soviet front; deception was used to tie forces in the Pas-de Calais area, positioning credible forces in the Mediterranean area at the time of commencement of OVERLORD; and finally, by launching Operation ANVIL to open additional ports and tie down more forces – this all caused enemy concentrations away from the main effort.

Flexibility was demonstrated at the operational and tactical level when an airborne division was dropped in the rear to divert enemy forces, which allowed the VII Corps to virtually walk ashore at Utah Beach (when the German forces were tied down in the Caen area) giving the necessary freedom of action to US forces to pursue seizing the port of Cherbourg and the rest of Cotentin Peninsula.

CHAPTER 8

LEGAL CONTEXT

Legal Context of War

Nations maintain armed forces to protect their national interests. If there is an armed conflict, the overall object is to achieve success in war. Armed conflict is a risky and complicated affair; which involves death, injury, destruction, loss of liberty, changes in a way of life, sorrow, personal hardships and discomfort.⁵⁵

In the conflicts at the start of civilisation generally no quarter was sought or given. Rape, pillage and the slaughter of at least the adult males of the vanquished were to be expected. As civilisation developed the Greeks sighted this type of behaviour as barbaric and conducted by barbarians who, by their definition, were not civilised. Despite many occurrences of barbarism throughout the ages, there have been notable instances of gentle behaviour as well.⁵⁶

In centuries past the articles of war provided a code of discipline for a particular campaign and also agreements between belligerents, known as cartels, were made dealing with such things as the exchange of prisoners, or perhaps their ransom, the treatment of the wounded, the sick and sometimes even the protection of the civilian population. However, these agreements generally ceased to have effect at the end of the campaign for which they were made.⁵⁷

It was understood that the suffering of battle could be avoided if armies had more medical support. Hence, committee was formed which described itself as a permanent international committee for the aid of military wounded. That committee eventually became the International Committee of the Red Cross (ICRC).

The first Geneva Convention was signed in August 1864 by diplomats from 12 countries, initially and another five diplomats joined later. This

convention provided for the respect and protection of ambulances, military hospitals and wounded and sick military personnel; for local inhabitants to come to the relief of the wounded; for the 'wounded or sick combatants to whatever nation they may belong to be collected and cared for'; and for the sign of the Red Cross on the white background as a distinctive emblem that has become internationally known.

Since the middle of the last century the tendency has been to have written laws in the form of treaties between States. Most customary law has now been incorporated into these treaties. The first Geneva Convention of 1864 was an important international step. It paved the way for other international agreements. The most important of those in force today are the Hague Rules, the 1949 Geneva Conventions and the 1977 Geneva Protocols.

The Law of Armed Conflict

The Law of Armed Conflict has traditionally dealt with conflicts between States and has not concerned itself to any great degree with internal armed conflicts. That situation is now changing and the law relating to internal armed conflicts is to be found in Chapter 10 of the Geneva Convention 1949. Except in so far as otherwise specified, the rest of this publication is concerned with the International Law of Armed Conflict between States.⁵⁸

Due to the consistent failure of countries to acknowledge the existence of a state of war, the term 'armed conflict' has been adopted in contemporary treaties to ensure that the terms are applicable even where one party does not recognise a state of war. Thus the Law of Armed Conflict will apply in the following circumstances:

- A declared war or any other armed conflict between two or more States; or,
- Occupation of the territory of one State by another; or
- Armed conflicts in which peoples are fighting against colonial domination and alien occupation and against racist regimes in the exercises of their right of self-determination.

Given such a situation the law that applies is as follows:

- Customary law is binding on all States. This applies equally to the provisions of treaties that have become recognised as customary law. The Hague Rules and the Geneva Conventions fall in to this category.
- Those other treaties that are binding on the parties to the conflict. For instance, this would include those provisions of the Protocols that are not already considered to be customary law but which bind those States that are party to them.

There are several main principles and concepts which lie behind the overall purpose of the law of armed conflict but following four core features are essentials of the law:

- **Military Necessity.** Military necessity allows the use of necessary lawful force during an armed conflict to make the enemy submit. This does not mean that there are no limitations on methods and means of warfare. Military necessity is not an excuse for inhumane conduct or for any activity prohibited by the law.
- **Humanity.** Basic humanity prohibits the infliction of personal suffering or destruction of property which is not necessary for compelling the submission of enemy forces. For this reason, attacks directed solely against civilians are prohibited. This protection cannot prevent incidental civilian casualties although steps have to be taken to reduce these as much as possible.
- **Proportionality.** Provides a link between the concepts of military necessity and humanity. It requires that the losses resulting from a military action should not be excessive in relation to the required military advantage.
- **Distinction.** The requirement to distinguish between the civilian population and combatants and between civilian objects and military objectives in targeting.

However, nothing in the Law of Armed conflict prohibits members of the armed forces from taking appropriate action in self-defence. Reasonable

and proportionate force may be used for protection imminent and immediate threats. Similarly, international law is aimed mainly at regulating the conduct of States and their governments but, individual combatants are also required to comply of the Law of Armed Conflict.⁵⁹

International Humanitarian Law

International Humanitarian Law (IHL) is a set of rules that seek to limit the efforts of armed conflicts. It projects people who are not or are no longer participating in hostilities and restricts the means and methods of warfare.

IHL is based on a number of treaties, in particular the Geneva Conventions of 1949 and their additional protocols and a series of other instruments. In addition, customary international law which consists of rules that came from a general practice accepted as law that exists independent of treaty law.⁶⁰

The Law of Naval Warfare

The Law of Naval Warfare that governs the means and methods of warfare at sea and is a subset of the Law of Armed Conflict. This law can be found in the Customary International Law, various Hague Conventions and the four 1949 Geneva Conventions and their two 1977 additional Protocols. An attempt to document this customary international law in relation to naval warfare resulted to publish the San Remo Manual on International Law Applicable to Armed Conflict at Sea in 1994.

This manual is not a legally binding document; it is a useful guide to contemporary laws of naval warfare. The manual is only binding to the extent that its provisions reflect customary international law.

The International Law of the Sea

'Seas around Sri Lanka holds out great potential as an island nation in the right centre of the Indian Ocean. Hence, Law of the Sea plays an important role in determining her maritime boundaries and the jurisdictional zones.'

The law of the sea provides for the regulations, management and governance of the ocean space that cover two-third of the Earth's surface. The International Law of the Sea is one of the most important areas of contemporary international law addressing beyond the 'Constitution of the Oceans', the 1982 United Nations Convention on the Law of the Sea (LOSC), but it an ever-growing body of additional treaties, frameworks and State practices for the governance and management of the world oceans. The Convention entered into force on 16th November 1994. The Convention comprises 320 Articles and nine Annexes, governing all aspects of ocean space.⁶¹

The third United Nations Conference on the Law of the Sea, pave the way to finalise the LOSC and on 10th December 1982 and the international law of the sea was transformed into a convention. The convention provides certainty to the law and it took the law in new direction in its provisions dealing with the deep seabed, Archipelagic States, marine environmental protection, marine scientific research and compulsory dispute settlement. The Convention also provided the framework for further development of specific areas of law of the sea.⁶²

Introduction on Ocean Jurisdictions and the Generation of Maritime Zones

Although invisible to the naked eye, governments have carved the world's oceans into many zones, based on both international and domestic laws. These zones are often complex, with overlapping legal authorities and responsibilities.

The LOSC established the following maritime zones, each of which varies in the degree of exclusive rights and control afforded to a Coastal State:

- Internal Waters.
- Archipelagic Waters.
- Territorial Sea.
- Contiguous Zone.
- Exclusive Economic Zone.
- Continental Shelf.
- High Seas.
- International Seabed Area.

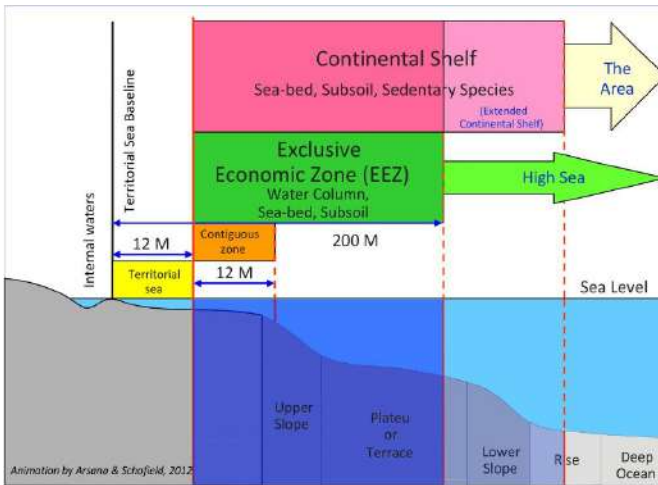


Figure 8.1 – Maritime Zones

The Baseline

For purposes of both international and domestic law, the boundary line dividing the land from the ocean is called the baseline. The baseline is determined according to principles described in the 1958 United Nations Convention on the Territorial Sea and the Contiguous Zone and the 1982 LOSC and is normally the low water line along the coast, as marked on charts officially recognised by the coastal nation. However, straight baselines are used for measuring the breadth of the territorial sea where

particular, restricted, geographical circumstances exist, international law allows states to depart from the application of normal baselines and measure maritime jurisdictional zones from straight baselines drawn along selected parts of their coastlines.⁶³ Water bodies inland of the baseline such as bays, estuaries, rivers, and lakes are considered ‘internal waters’ subject to national sovereignty.

Internal Waters

Internal Waters are defined in Article 8 of LOSC. They comprise all waters to landward of the territorial sea baseline such as ports, harbours, enclosed bays, gulfs, lakes, rivers and all inland waters. Internal Waters form an integral part of the territory of the Coastal State and it has sovereignty over its Internal Waters. This should not be constructed as conferring upon it unlimited power. The Coastal State has duties for the promotion of international intercourse, navigation and trade which customary international law imposes upon it. There is an implicit expectation of transit through the Internal Waters to a port or harbour for foreign vessels that are engaged in trade, but a Coastal State may still close its Internal Waters to foreign vessels. Warships must generally seek diplomatic clearance for permission to enter Internal Waters.⁶⁴

Archipelagic Waters

These waters are defined in Article 49 of LOSC. They comprise the waters enclosed by the archipelagic baselines of Archipelagic States regardless of their depth or distance from the coast. The Archipelagic State has sovereignty over these waters, which extends to the air space over them as well as to the seabed and subsoil and all the resources contained within them. All vessels have a right of innocent passage within Archipelagic Waters and a right of archipelagic sea lane passage within, either the defined archipelagic sea lanes, or through routes used for international navigation through waters from one part of the EEZ or high seas, where archipelagic sea lanes have not been declared. The ships conducting archipelagic sea lanes passage are to comply with generally accepted international regulations, procedures and practices for the prevention, reduction and control of pollution of ships. While the Archipelagic State

has the right to temporarily suspend innocent passage after due notification it cannot suspend or hamper archipelagic sea lanes passage. Warships can exercise archipelagic sea lanes passage in 'normal mode', which permits submarines to transit submerged.⁶⁵

The Territorial Sea

This is a band of water to seaward of the territorial sea baseline with a maximum permitted breadth of 12nm as laid down in Article 3 of LOSC. The Coastal State enjoys sovereignty over the Territorial Sea and it is under the control and jurisdiction of the Coastal State. All vessels enjoy the right of innocent passage through the Territorial Sea in accordance with Article 17 of LOSC. However LOSC does not require prior notification, foreign warships require prior notification as an authorization for the employment of innocent passage. Therefore Sri Lanka's position is that prior notification or permission is required for foreign warships to the innocent passage. Coastal State has the right to prevent passage which is not innocent and to expel any vessel which fails to comply with the local regulations or the rules on innocent passage laid down in Article 19 of LOSC.⁶⁶

The Contiguous Zone

The definition of the Contiguous Zone is laid down in Article 33 of LOSC. The zone may not extend beyond 24nm from the Territorial Sea baseline. If a Coastal State claims a Contiguous Zone, it may exercise the control necessary to prevent infringement of its custom, fiscal, immigration or sanitary laws and regulations within its territory or Territorial Sea and punish infringement of the above laws and regulations committed within its territory or Territorial Sea. The Coastal States do not have sovereignty over the Contiguous Zone; it only has certain sovereign rights. As such all ships have complete freedom of navigation through the Contiguous Zone provided there conduct does not infringe the customs, fiscal, immigration and sanitary laws of the Coastal State.⁶⁷

The Exclusive Economic Zone

The LOSC allows each coastal nation to establish an Exclusive Economic Zone (EEZ) adjacent to its Territorial Sea, extending a maximum of 200nm seaward from the baseline. Within its EEZ, the coastal nation has sovereign rights for the purpose of exploring, exploiting, conserving and managing living and non-living resources, whether found in ocean waters, the seabed, or subsoil. All States enjoy the rights of the freedom of navigation and over flight and of the laying of submarine cables and pipelines in an EEZ. Coastal States also have exclusive rights over establishment and use of artificial islands, installations and other such structures, conducting marine scientific research within their EEZs as per the Article 60 of LOSC with economic purposes. Coastal States provide with rights and responsibilities in relation to the protection, conservation and management of the living and non-living resources in their EEZ. Measures that maybe employed to enforce the laws and regulations of the Coastal States include boarding, inspection, arrest and judicial proceedings.⁶⁸

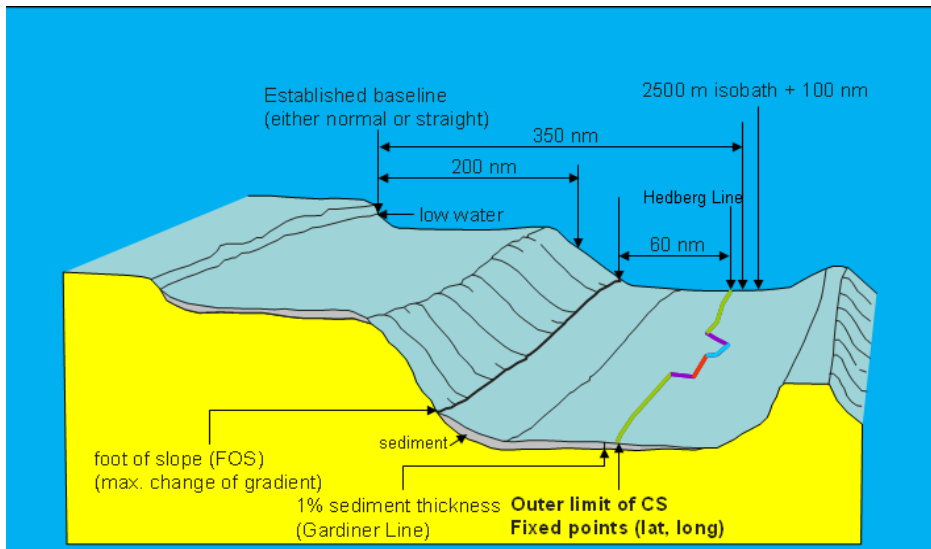


Figure 8.2 – Delineation of Continental Shelf

The Continental Shelf

The legal concept of the Continental Shelf (CS) has evolved over the last sixty years. A 1945 Proclamation by President Truman first asserted a US claim to resources of its CS. This proclamation set a precedent for other coastal nations to assert similar claims over resources far from their shores. The need to establish greater uniformity was one of the driving forces behind the 1958 United Nations Convention on the CS. However, the 1958 Convention showed limited vision, defining the CS.⁶⁹

The LOSC generally defines the CS for purposes of international law as the seafloor and subsoil that extend beyond the territorial sea throughout the natural prolongation of a coastal nation's land mass to the outer edge of the continental margin or to 200nm from the baseline, if the continental margin does not extend that far. The legal definition of the CS thus overlaps geographically with the EEZ. Where a coastal nation can demonstrate that its continental margin extends beyond 200nm, the LOSC has a complex process for asserting such claims internationally. The CS of a Coastal State shall not extent beyond the limits provided for Article 76 Paragraph 4 to 6 of LOSC in addition to the Annex II of the final convention.⁷⁰

Sri Lanka's request on extension of CS in accordance with Article 76 of LOSC, a special method of establishing maritime boundaries for countries south of the Bay of Bengal has been formulated during the Third United Nations Conference of the Law of the Sea held in 1982. This special method has been incorporated in the Annex II of the final convention with the following criteria:

- Delineated a line by reference to the outer most fixed points at each of which the thickness of the sedimentary rock is at least one percent of the shortest distance from the point of the foot of the continental slope
- Delineate a line by reference to fixed points not more than 60nm from foot of the continental slope.

It is generally understood that Sri Lanka can satisfy the above criteria and use Annex-II to delimit its outer edge of continental margin. Sri Lanka

has submitted for her claims on continental margin extension beyond 200nm on 08th May 2009 to the Commission on the Limits of the Continental Shelf and waiting for the recommendation. It is estimated that Sri Lanka's claim will not be taken up for consideration before 2025.

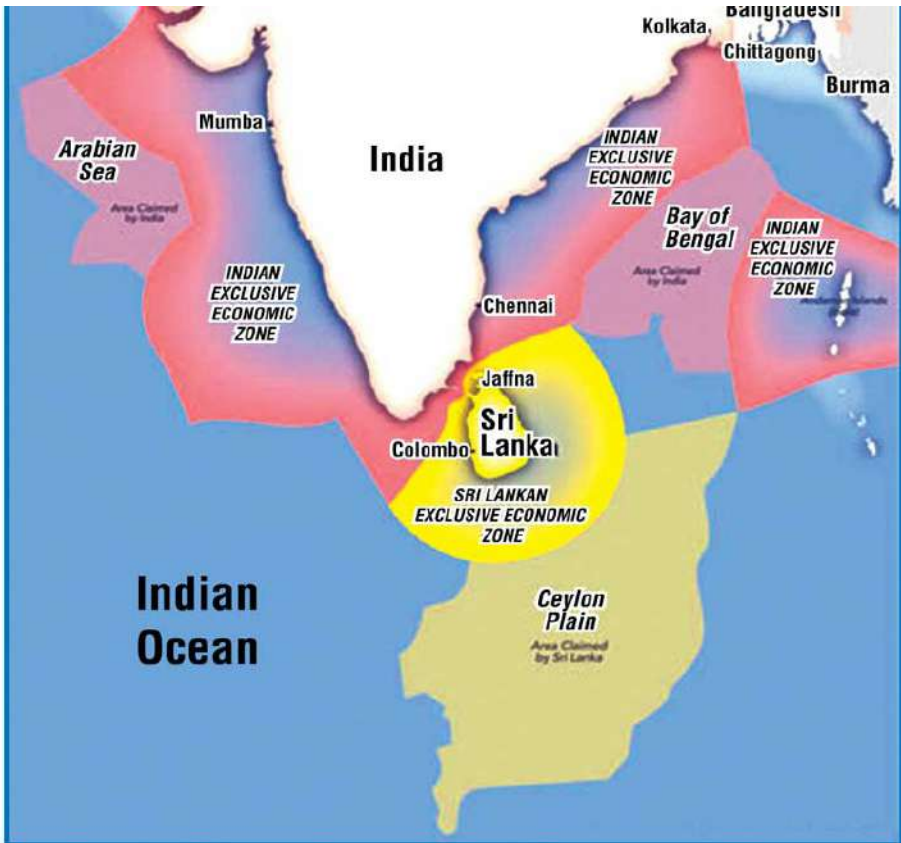


Figure 8.3 – Continental Shelf Claimed by Sri Lanka

The High Seas

International law has long considered areas of the ocean beyond national jurisdiction to be the High Seas. On the High Seas, all nations have certain traditional freedoms including the freedom of surface and submerged navigation, the freedom to fly over the water, harvest fish, lay submarine cables and pipelines, conduct scientific research and

construct artificial islands and certain other installations. These freedoms are subject to certain qualifications, such as the duty to conserve living resources and to cooperate with other nations towards this end. In addition, a nation exercising its high seas freedom must give due regard to the interests of other nations. Originally defined as the area beyond the territorial seas of coastal nations, today the high seas are defined by the LOSC as the area seaward of the EEZs of nations. The ability of a State to exercise jurisdiction on the High Seas arises from either universal jurisdiction, such as the piracy provisions of LOSC, or by virtue of being a Flag State able to exercise jurisdiction over its flagged vessels. States may also influence the regulation of high seas activities by involvement in the development of international instrument under the auspicious of the IMO. There are limited grounds upon which all states may take action against ships in the High Seas. These include: duty to suppress piracy, to prevent slave trading, to suppress unauthorized broadcasting, by specific agreement with a Flag State for action against a specific ship, pursuant to relevant UN Security Council Resolutions and under the Law of Naval Warfare. In addition States are also obliged to cooperate in the suppression of illicit traffic in narcotic drugs and psychotropic substances engaged in by ships on the High Seas contrary to international conventions.⁷¹

The Area

Beyond the limit of national jurisdiction LOSC established a new zone 'The Area' which is administered by the International Seabed Authority (ISBA) on behalf of the state parties and for the benefits of mankind as a whole recognizing the principle of 'Common Heritage of the Mankind'. ISBA's function is controlled by the state parties in accordance with Part XI of the LOSC.⁷²

Key Features of the United Nations Convention on the Law of the Sea 1982

The LOSC now sought to achieve a balance between the respective rights and interests of Coastal and other Maritime States. It provides a clear framework for the way in which the various maritime zones are

govern with the legitimate sovereign rights and interests of Coastal States blended with the traditional freedom of navigation enjoyed over what otherwise would have been high seas.

Law of the Sea is not practice alone. States practices continue; especially in the area of maritime claims, resource managements, maritime pollutions and maritime security.

Following are some of the key features of the LOSC:⁷³

- Coastal States exercise sovereignty over their territorial sea which they have the right to establish its breadth up to a limit not to exceed 12nm and foreign vessels are allowed for 'innocent passage' through those waters.
- Ships and aircraft of all countries are allowed 'transit passage' through straits used for international navigation and States bordering the straits can regulate navigational and other aspects of passage.
- Archipelagic States, made up of a group or groups of closely related islands and interconnecting waters, have sovereignty over a sea area enclosed by straight lines drawn between the outermost points of the islands and the waters between the islands are declared Archipelagic Waters where States may establish sea lanes and air routes in which all other States enjoy the right of Archipelagic Passage through such designated sea lanes.
- Coastal States have sovereign rights in a 200nm Exclusive Economic Zone (EEZ) with respect to natural resources and certain economic activities, and exercise jurisdiction over marine science research and environmental protection.
- All other States have freedom of navigation and over flight in the EEZ, as well as freedom to lay submarine cables and pipelines.
- Land-locked and geographically disadvantaged States have the right to participate on an equitable basis in exploitation of an appropriate part of the surplus of the living resources of the EEZ's of Coastal States of the same region or sub-region:

however, highly migratory species of fish and marine mammals are accorded special protection.

- Coastal States have sovereign rights over the Continental Shelf (the national area of the seabed) for exploring and exploiting it and the shelf can extend at least 200nm from the shore and more under specified circumstances.
- Coastal States share with the international community part of the revenue derived from exploiting resources from any part of their shelf beyond 200nm.
- The Commission on the Limits of the Continental Shelf shall make recommendations to States on the shelf's outer boundaries when it extends beyond 200nm.
- All States enjoy the traditional freedom of navigation, over flight, scientific research and fishing on the high seas and they are obliged to adopt, or cooperate with other States in adopting, measures to manage and conserve living resources.
- The limits of the territorial sea, the EEZ and Continental Shelf of islands are determined in accordance with rules applicable to land territory, but rocks which could not sustain human habitation or economic life of their own would have no economic zone or continental shelf.
- States bordering enclosed or semi-enclosed seas are expected to cooperate in managing living resources, environmental and research policies and activities.
- Land-locked States have the right of access to and from the sea and enjoy freedom of transit through the territory of Transit States.
- States are bound to prevent and control marine pollution and are liable for damage caused by violation of their international obligations to combat such pollution.
- All marine scientific research in the EEZ and on the Continental Shelf is subject to the consent of the Coastal State, but in most cases they are obliged to grant consent to other States when the research is to be conducted for peaceful purposes and fulfils specified criteria.

- States are bound to promote the development and transfer of marine technology on 'fair and reasonable terms and conditions' with proper regard for all legitimate interests.
- States parties are obliged to settle their disputes by peaceful means concerning the interpretation or application of the Convention.
- Disputes can be submitted to the International Tribunal for the Law of the Sea established under the Convention, to the International Court of Justice, or to arbitration. Conciliation is also available and, in certain circumstances, submission to it would be compulsory. The Tribunal has exclusive jurisdiction over deep seabed mining disputes.

Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation – 1988 (SUA Convention)

Terrorism is a premeditated, politically motivated violence perpetrated against non-combatant targets by sub-national group or clandestine state agents, usually intended to influence an audience.

US Department of Defence

The terrorist activities aggravated by greater sophistication of destructive technology available to them, making shipping on high seas an attracted target. Moreover, the likelihood for worldwide media coverage of an incident apparently makes maritime terrorism an even more attracting prospect.

The SUA Convention in 1988 has addressed the maritime terrorist activities along with an additional protocol to the same convention to deal with the security issues faced by the fixed platforms in the Continental Shelf (CS) as the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the CS. Due to the inadequacy of the provisions within the LOSC, the international community through and proposed the UN and the IMO to formulate the SUA Convention to prosecute maritime crimes which are not covered in the LOSC

piracy regime. Further, the SUA Convention to deal with modern type of terrorist activities took initiative to update the existing convention more comprehensively to address the new form of maritime terrorism including proliferation of nuclear, biological and chemical weapons and use of ship as a weapon.⁷⁴

The International Ship and Port Facility Security Code

The International Ship and Port Facility Security (ISPS) Code in 2004 has led to change the entire maritime security concerns and uphold the standard of maritime community to appreciate the new security situation after 9/11 incident in the USA. IMO initiated new International security standard and practices for all concerned in maritime transportation since 01st July 2004. In this initiative, IMO has reinforced SOLAS Convention by including ISPS Code as an amendment to Chapter XI. The ISPS Code introduces comprehensive security requirements to be implemented by governments, port authorities and shipping companies including SOLAS vessels in Part-A as a mandatory requirement to comply with and in Part-B it introduces guidelines to meet the security requirements. The ISPS Code is the widely accepted international convention which addresses the maritime security and especially against the maritime terrorism.⁷⁵

Rules of Engagement (ROE)

ROE are legal and political parameters on the use of force. They are likely to be specific to particular operations and will be governed by LOAC, domestic law, and political considerations. There may be valid political reasons for limiting the use of lawful force and by defining the degree and manner in which force is to be used. ROE ensure that commanders know the constraints they are acting under. Commanders are not permitted to exceed these levels of delegation without higher command approval, but the right of self-defence remains the implicit prerogative of every commanding officer or individual. However, ROEs are not intended to assign specific tasks or tactical instructions.⁷⁶

Hot Pursuit

The LOSC provides for the concept of hot pursuit, which enables a Coastal State to extend its jurisdiction over foreign vessels and foreign nationals on the High Seas if it has a good reason to believe that the ship has violated the laws or regulations of the Coastal State in its Internal Waters, Territorial Sea, Contiguous Zone, EEZ or on the Continental Shelf. Pursuit must be conducted by a clearly marked and identifiable government vessel or aircraft and it must be commenced whilst the foreign ship or one of its boats is within an appropriate zone of jurisdiction and only after a visual or auditory signal has been given at a distance which enables it to be seen or heard by the foreign ship. It must be commenced as soon as possible after detection of the offence and it must be continuous, although the pursuit need not necessarily be by the same vessel or aircraft. The right of hot pursuit ceases as soon as the pursued ship enters the Territorial Sea of its own State or of a third State.

Sovereign Immunity

In international law, exemption from local territorial jurisdiction as accorded mainly to foreign sovereigns and diplomatic representatives which is recognised as pertaining to warships as well. While neither an embassy nor a warship forms any part of the territory of the foreign State to which it belongs, the rule of immunity does mean that none of the ordinary processes of law can be directed against the ship.

Legal Basis for Sri Lanka

“For the bread that you eat, biscuits you nibble, the sweet that you suck and the joints that you carve, they are brought to you daily by all of us - big steamers and if anyone hinders our coming, you all starve.”

Rudyard Kipling

Sri Lanka relies upon international law and diplomacy as basic tools to resolve any differences that may occur among nation-states. Economic prosperity through seaborne trade is the key concern. Disruptions to the blue economy and sea borne trade have the negative effect on the economic growth resulting instability within the country. Therefore, good order at sea is of paramount importance to Sri Lanka as we are an island nation relied on sea borne trade and commerce. The SLN operates in accordance with both international and domestic laws which set its rights and obligations and govern its use of force. In addition, the SLN operates within an increasingly complex legal context related directly to the features of the maritime environment. The long held concept of 'Freedom of the Seas' has undergone important modifications in recent decades, particularly as a result of the LOSC introduction and other international conventions and treaties. One such additional responsibility entrusted to SLN is to appoint Port Facility Security Officers for the implementation of ISPS Code in all commercial ports.

Suppression of Unlawful Acts against the Safety of Maritime Navigation Act, No 42 of 2000

An Act to give effect to the convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation; and to provide for matters connected there with or incidental there to. The convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation was adopted in Rome on the 10th March 1988 and Sri Lanka accedes to the convention.

Maritime Zones Law No. 22 of 1976

For Sri Lanka, the law relating to the delimitation of boundaries and jurisdictional zones is set out in the Maritime Zones Law No.22 of 1976 and the Maritime Zones Proclamation made in pursuance of this law. The jurisdiction which the State exercises in the different zones, i.e. Territorial Sea, Contiguous Zone, EEZ, CS and Pollution Prevention Zone, is set out in the Maritime Zones Law and the limits of the different zones have been proclaimed, under the Maritime Zones Proclamation.

The Maritime Zones Law incorporates the terms of the two boundary agreements between Sri Lanka and India, i.e. ‘The Agreement between India and Sri Lanka on the boundary in Historic Waters between the two countries and related matters of 1974, which sets out the boundary between India and Sri Lanka in the waters from Adam’s Bridge to Palk Strait’ and ‘The Agreement between Sri Lanka and India on the maritime boundary between the two countries in the Gulf of Mannar, and the Bay of Bengal of 1976.’⁷⁷

The Maritime Zones Laws also provide that the President may declare the Historic Waters of Sri Lanka. The Historic Waters of Sri Lanka have been declared to comprise of the areas of sea in the Palk Strait, Palk Bay, and the Gulf of Mannar up to Kalpitiya on the Western coast, and Point Pedro on the Northern coast. Furthermore, it is declared that the Historic Waters in the Palk Bay and Palk Strait shall form part of the Internal Waters of Sri Lanka and that the Historic Waters in the Gulf of Mannar shall form part of the Territorial Sea of Sri Lanka. In respect of these areas they have been assigned to these two jurisdictional zones arbitrarily by virtue of the Proclamation.⁷⁸

Historic Waters

The coastline of Sri Lanka does not have any large bays on its Eastern coast, except for the China Bay in Trincomalee. As the mouth of this bay is only three and a half miles, the waters of the bay are regarded as internal waters. On the Northern and Northwestern coastline, it finds the Palk Bay and the Gulf of Mannar. The Palk Bay, however, does not strictly conform to the definition of a bay as it does not entirely enclose the sea on three sides so as to contain landlocked waters. It opens out into the Palk Strait on one side and the Gulf of Mannar on the other and is bordered by the Indian peninsula on the West, the island chain of Adam’s Bridge on the South and the island of Sri Lanka on the East. However, as the bay is regarded as a historic bay the provisions relating to the drawing of baselines do not apply and its waters have the status of historic waters.

Subsequently, by the Maritime Zones Law Proclamation of 1977, these waters were declared the Historic Waters of Sri Lanka and they have been further subdivided into the territorial sea and international waters.

The Maritime Zones Law states that Sri Lanka exercises sovereignty, exclusive jurisdiction and control in and over the Historic Waters, as well as in and over the islands and the CS and the seabed and subsoil thereof within such Historic Waters. The Palk Strait which provides the entrance to Palk Bay has also been declared Internal Waters.⁷⁹

The waters in this entire sector are very shallow being generally in the region of 12 metres in depth. In this area the question of a baseline is not relevant, the internal waters being all those water line on the Sri Lanka side of the boundary line. In the internal waters of a State which would include rivers, lagoons, bays whose mouths are less than 24 miles, as well as ports, which include permanent installations further out to sea which form an integral part of a port system, the coastal State exercises full sovereignty as it does in respect of its land territory.⁸⁰

The Boundary Agreements

The first boundary agreement of 1974 demarcates the waters from Adam's Bridge to Palk Strait. Article 5 of the agreement gives Indian fishermen and pilgrims' access to visit Kachchativu as hitherto, which in the context means access to visit Kachchativu during the annual church festival of St. Anthony, without obtaining travel documents or visas for this purpose. Article 6 states that the vessels of India and Sri Lanka will enjoy in each other's waters such rights as they have traditionally enjoyed hearing. Article 7 refers to the fact that if there is any single geological or natural gas structure or field straddling across the boundary, the two countries should seek to reach an agreement on the manner in which the structure or field should be most effectively exploited and the manner in which the proceeds deriving there from shall be allocated. This agreement which was signed in June 1974 was ratified on 08th July 1974 and the agreement entered into force from that date.⁸¹

In 1976 a second boundary agreement was entered into force in order to extend the maritime boundary between the two countries by determining the boundaries in the Gulf of Mannar and the Bay of Bengal, i.e. to the West and East respectively of the boundary which had already been delimited above. Under the terms of this agreement, the boundary on the Western coast was extended from Adam's Bridge southwards to a specified position. Article 1 says the extension of the boundary beyond

that position will be done subsequently. This was extended in July 1976 up to another specified position marked on the relevant map by tri-junction agreement between India, Sri Lanka and the Maldives. This marks the limit of Sri Lanka's EEZ and Pollution Prevention Zone on the Southwest. The agreement states that each party shall have sovereignty over the Historic Waters, Territorial Sea, CS and EEZ. It also provides that each party shall respect the rights of navigation through its Territorial Sea and EEZ in accordance with its laws and rules of international law.⁸²



Figure 8.4 – Maritime Zones of Sri Lanka

CHAPTER 9

CONCEPTS AND APPLICATION OF MARITIME POWER

“Since men live upon the land and not upon the sea, great issues between nations at war have always been decided, except in the rarest cases either by what your Army can do against your enemy’s territory and national life, or else by fear of what the fleet makes it possible for your Army to do.”

Sir Julian Corbett

Concepts of Maritime Power

The common definition of the maritime power is the ability of a nation to exploit the oceans to its advantage. However, maritime power not only of the ability to exploit the oceans on commercial purposes, but it strengthens to protect this ability from interference. It also implies the ability of a nation to influence others in peace and impose its will in war.⁸³

Maritime power automatically enhances a country’s regional and global status and posture. Similarly, maritime power affects the external dimensions of a country’s security. One of the reasons is that, unlike land or airspace, seas beyond national jurisdiction, own no one and it is open to all. Therefore, the EEZ is only for economic exploitation and any foreign nation could use for peaceful purposes. Hence, Navy does not defend sea space like Army defend the land borders and territory and the Air Force defend airspace. Navy defends its maritime interests.

Sri Lanka will be heavily dependent on the maritime domain in the future. Therefore, surrounding oceans must be protected, monitored and regulated to establish a competitive and unique maritime hub in the region. It is in this context, SLN has a huge role to play in order to

face the new and existing maritime challenges and to improve maritime security and economic progress in the country.

‘Maritime power represents the country’s wealth and prosperity.’

Employment of Maritime Power

Command of the Sea

The term Command of the Sea believed to be first used by the Royal Navy in sixteenth century. In the strict definition of the term, Command of the Sea meant complete, absolute and permanent control of a specific part of the ocean or sea area, thereby ensuring one’s free use of sea lanes of communication and full denial of it to the adversary. However, in practice Command of the Sea can never be achieved as per the definition by securing a certain sea area by way of permanent presence of a naval force.

The destruction of enemy’s fleet is the best method to achieve the Command of the Sea. The Japanese defeat in the Battle of Midway with heavy losses paved the way for allied forces to achieve Command of the Sea in the pacific theatre of battle during the Second World War.

In practical terms, Command of the Sea can be achieved by one side when they are relatively superior to the adversary in a certain area of the ocean ensuring freedom of navigation, uninterrupted flow of shipping whilst denying same to the enemy.

The Command of the Sea could be achieved if our maritime forces being able to exploit the seas for own advantage while denying the use of enemy. However, it is argued that in contemporary maritime situation, achieving of Command of the Sea is unrealistic and it is limited to time

and space. Emergent from this paradigm, arose the concept of Command of the Sea, which was considered to be the principle objective of naval forces operating in a maritime arena. Command of the Sea was viewed as being achievable through the complete destruction or neutralisation of an adversary's forces. Gradually as warfare advanced, it became unrealistic for any Navy to dominate to such an extent. This was because with advances in warfare, naval forces were faced with a range of asymmetric threats, brought about by technological innovations such as the mine, the torpedo, the submarine, the aircraft, the unmanned vehicle and the autonomous craft.

According to the great strategists Admiral Alfred Thayer Mahan and Sir Julian Corbett introduced; if own maritime forces are able to exploit sea for their own advantage and denying its use by his opponent is termed as 'Command of the Sea'.

Sea Control

This is the condition in which one has freedom of action to use the sea for one's own purposes in specified areas and for specified periods of time and, where necessary, to deny or limit its use to the enemy. Sea control includes the airspace above the surface and the water volume and seabed below.⁸⁴

The degree of sea control enjoyed by one's Navy in a given ocean/sea area can considerably vary depending on the factors of space, time and force.

In terms of the factor of space, sea control can be general (complete) or local. General sea control means that the weaker side is incapable of offering any effective and sustained resistance to the stronger side at sea. The side that obtains sea control can carry out its main tasks. Local sea control exists when one side possesses superiority in the part of the sea or ocean area that is operationally significant for executing a specific task. Sometimes local control of such an area must be obtained to carry out an amphibious landing or to strike the adversary's coastal installations/facilities.

In terms of the factor of time, sea control can be permanent or temporary. Permanent sea control exists when the stronger side completely dominates a given maritime theatre, either because the other side does not have any means to deny that control or because its naval force has been completely destroyed. In practice, it is more common that the weaker side still has some means at its disposal to challenge the stronger side's control. Permanent sea control does not mean that the opponent can do nothing but rather that he cannot interfere with one's shipping or amphibious landings in such a way as to seriously affect the course of the war. Permanent sea control means that one's adversary cannot use shipping or carry out maritime expeditions except at an unacceptably high risk. Temporary sea control often results from the inability of either side to obtain a decision. The weaker side at sea then usually falls back on the defensive and keeps a major part of its fleet in bases, avoiding any decisive action at sea. If a weaker opponent succeeds in obtaining superiority in the air, it could be sufficient for using the sea for a specific purpose and for a limited time.

In terms of the factor of force, sea control can range from absolute to contested. It can also mean the free use of particular types of ships but not others. Absolute sea control means, in practice, that one's naval force operates with little threat while the adversary fleet cannot operate at all. It aims in general to obtain sea control of the entire theatre, or the major part of the theatre, so that one can employ one's fleet whenever and wherever required without threat from the adversary. The weaker side then cannot employ its submarines, aircraft, or mines. In practice, control of large sea/ocean areas cannot be absolute in terms of either space or time in the presence of an undefeated and strong opponent. The only exception is when one side possesses a fleet and the other does not and has no other means to dispute control. In theory, absolute but temporary sea control exists when one side, for only a short duration, enjoys superiority over its opponent in the entire theatre. However, this objective could be accomplished only in absence of a peer competitor on the open ocean.

Limited sea control is usually the result of the drastic shift in the operational or strategic situation when the initiative passes from one side to the other. Then one side in the conflict has a high degree of freedom to act while the other operates at high risk. The side that has lost the initiative, however, still may be strong enough to inflict significant losses upon the stronger side. Limited sea control is inherently transitory and, hence, unstable. Limited sea control exists when only one type of ship can operate without undue risks, while other types of ships operate at high or unacceptable risks. When absolute control cannot be obtained, one's naval force should try to secure temporary control of limited sea or ocean areas for conducting operations necessary to the successful progress of the war. Such control can be exercised to the extent in space and time that one's contemplated operations may be planned and executed without fear of interference from the weaker force. The weaker side would carry out mostly minor actions but at considerable risk.

In terms of risks for one's forces, a distinction is made between maritime superiority and maritime supremacy. Maritime superiority is a degree of sea control of a given sea/ocean area and associated airspace that allows one's forces and commercial shipping/aircraft to operate at a low and moderate risk. Maritime supremacy is a degree of control of a given sea/ocean area and associated airspace that allows one's force and commercial shipping/aircraft to operate at very low or no risk at all.

At the initial stage of the Second World War, Japanese Maritime Forces controlled the seas at Pacific theatre and had the control of the war at land. Later once the situation changed and Allied Forces gained the sea control, the war efforts in the land also changed and Japanese were defeated gradually in South East Asia and the Pacific.

SLN achieved total sea control around the theatre of battle during the final stages of the Humanitarian Operation which directly affected the war at land to defeat the terrorists.

Sea Denial

Sea denial pertains to one's ability to deny partially or completely the adversary's use of the sea and associated airspace for military and commercial purposes. It is the principal objective of a weaker side at sea. Denying the use of the sea to an opponent has often been regarded as the opposite of sea control but this is an oversimplification. If a weaker side denies control of the sea to a stronger opponent, this does not mean that it necessarily obtains control itself. Sea control and sea denial are often complementary objectives. Sea denial may be used to help secure one's use of the sea, in either the same geographical area or elsewhere.⁸⁵

LTTE used sea denial off the littoral seas controlled by them by using hit and run tactics, placing shore batteries and mining the seas of their choice.

Disputed Sea Control

Disputed sea control occurs when the opposing sides possess roughly equal capabilities and opportunities to obtain sea control in a theatre as a whole (or in one of its parts) and there is no significant change in the ratio of forces, nor change of the initiative to either side. Disputed sea control often occurs in the initial phase of a war. It is characterized by an almost continuous struggle for control of certain sea or ocean areas.

However, once control is obtained, it is usually not maintained for a long time and may be lost from time to time and then regained. In coastal or offshore waters, sea control by a stronger fleet can be disputed even if the major part of a weaker fleet is destroyed.

When control is in dispute on the open ocean, both sides operate at high risk, because their strength is approximately in balance. One side usually controls one or more parts of a given maritime theatre, while its opponent controls the remaining part. Each side's control of a specific sea area is usually limited in time. In the littorals, however, disputing or

contesting sea control differs from that in the open ocean in that the task is primarily carried out by one's submarines, small surface combatants, coastal artillery/missile batteries, land-based aircraft and mines. In a war on the open ocean, major parts of a theatre might not be controlled by either side.

The main methods for a force to dispute sea control are through attrition of an adversary's naval forces and land based air strength, strategic diversion, posing a threat to the adversary's critical positions, avoiding a decisive encounter with the adversary's forces (fleet-in-being), naval and commercial counter-blockade and providing support to friendly forces in their operations on the coast.

Fleet in Being

Another related concept to Sea Control and Sea Denial is that of the Fleet in Being, previously known as Force in Being. This concept involves the advantage a weaker power has of avoiding a head on confrontation with a stronger power by forcing the stronger power to divert valuable resources to contain it, is called as Fleet in Being. Thus, a Fleet in Being can compel the enemy to concentrate its forces, against its will, in a valuable area; or around valuable units; or cause him to route its passage to its disadvantage; or to amend its operational plans.⁸⁶

Maritime Power Projection

Power projection is in and from the maritime environment, including a broad spectrum of offensive military operations to destroy enemy forces or logistic support or to prevent enemy forces from approaching within enemy weapons' range of friendly forces. Some of the activities that take place in a conflict may be only indirectly linked to activities ashore but they are always linked to achievement of complete result. Sea Control, once achieved, establishes the environment for more direct efforts in relation to the land. Maritime forces can shape, influence and control this environment, as well as deliver combat force ashore if necessary. The delivery of force from the sea is defined as Maritime Power Projection and can take the form of the landing of amphibious or Special Forces or the delivery of sea borne land forces, or bombardment

by guided or unguided weapons from vessels at sea. The covert nature of submarines means they can play an important part in the projection of maritime power.⁸⁷

Maritime Power and Modern Developments

Technology seeks to increase the ability of naval forces to influence events on land and in the air. Thus, the development of extended range missiles, such as cruise missiles and guided munitions, increasingly integrate the air, sea and land battle. In addition, traversing the slow and difficult shore terrain in amphibious operations can now be coupled to the use of hovercraft or helicopters to deliver ground forces well inland in a battle ready state. Thus naval and amphibious forces can be utilised in a wide range of new situations. Both these developments are closely linked to improved battle space management systems and also the development of the ability of naval units to view over the horizon and intervening terrain to intervene in the land and land-air battles.

These new capabilities of sea borne forces are counter-balanced by improvements in surveillance and anti-ship weapons that pose challenges for the defence of sea borne forces. Thus the effective use of sea borne forces in a threat environment requires careful assessment of an adversary's capabilities and the balancing of offensive and defensive capabilities. This means the integration of land, air and naval forces together with supporting intelligence and surveillance elements.

The Maritime Domain

The maritime domain is simply defined as ‘the oceans, seas, bays, estuaries, island, coastal areas, and the airspace above these, including the littorals.’ It is all areas and things of, on, under, relating to, adjacent to, or bordering on a sea, ocean, or other navigable waterways, including all maritime-related activities, infrastructure, people, cargo, and vessels and other conveyances.



Figure 9.1 – Model of MDA

Maritime Domain Awareness (MDA)

MDA is the effective understanding of anything associated with the maritime domain that could impact the security, safety, economy, or environment of the country. The maritime domain also contains social, economic, political, military and legal components.

People have historically not understood the dependency of humanity to the sea which is an essential a gateway to prosperity and survival. A good reason for this effect more generally known as ‘Sea blindness’ is due to the lack of interest or awareness that people have about the ocean as they cannot really see what is happening in the sea, except for those who are engaged in fisheries or in the maritime support sector.

It seems that the primary symptom of sea blindness is political and public apathy to the economic importance of the oceans. A secondary factor is the lack of consensus on the size and type of naval forces needed to maintain order at sea and how it should be done. Butch Bracknell and James Kraska wrote in Ending America’s ‘Sea Blindness’.



Sri Lanka is geographically located at the middle of strategically important maritime routes which connect the East and West making her globally important for world trade. Hence, any disruption to maritime trade that takes place within this region will affect not only the economy of Sri Lanka but will have an impact on the world trade. An effective maritime security arrangement also facilitates the freedom of navigation and commerce, even for other legitimate users of the sea. Therefore, there is a need for a coordinated international approach to maintain a safe maritime environment.

As an island nation with this strategic location, SLN has a huge task and responsibility in protecting the territorial, the contiguous and the EEZ with the added responsibility of a large search and rescue region and in the near future an even a large area after ratification of the continental margins.

Sri Lanka ratified the LOSC on 19th July 1994, having signed it on 10th December 1982. The convention sanctioned all coastal states jurisdiction over an EEZ which extends to a distance of 200nm from the shore base line. Accordingly, Sri Lanka has sovereign rights of over 500,000sq km of the sea with a high water to land ratio of 7.5: 1. New claim for outer limit of continental shelf, extending to possibly 350nm covering over 1.4 million sq km, more than 24 times of our total land area. In this area, Sri Lanka may exercise sovereign rights over minerals, oil and certain biological resources of the seabed and its sub-soil and also have jurisdiction on matters related to the protection of sea lanes of communication, sea ports, off-shore installations, submarine cables and the marine environment.

Our country paid a heavy price by not governing the maritime domain effectively in the 80's. The sea tigers were the most violent non-state actors that operated from sea in the years that followed and became a menace not only to Sri Lanka but to the entire region as they even attacked or hijacked merchant vessels that were making their innocent passage in our territorial waters apart from using the seas to transfer large quantities of war materiel flouting international maritime laws. This even compelled the government to make a warning in the notices

to mariners for all vessels to keep well clear of the coastline when sailing around our island. Thus, surveillance and monitoring of our maritime space is essential even if there is no existing or visible threat as non-governance will create room for non-state actors especially, to dominate same.

LTTE Sea Tigers mined the open seas and placed Limpet Mines on Merchant Vessels causing a serious threat to the trade flow.

As an island nation the significance of protecting the maritime domain by effectively utilizing the Navy, the Coast Guard and other maritime protection agencies is of paramount to counter following possible maritime security threats/challenges:

- Possible surface, air and underwater attacks against naval vessels, shipping, critical maritime infrastructures, maritime assets: ports and offshore installations.
- Disruption of fishing activities, kidnapping of fishermen and hijacking of their vessels.
- Maritime piracy.
- Disruption of maritime research and exploration activities.
- Chemical, biological, radiological and nuclear attacks in the maritime domain or act as a mode of transportation for proliferation of the same.
- IUU fishing/poaching by foreign fishing vessels in Sri Lankan waters.
- Activities that cause intentional damages to the ecosystems; such as pollution caused by discharging of effluents and by employing unauthorised fishing methods.
- Smuggling and transportation of contrabands.
- Gun running and transportation of warlike materiel used for mass destruction.
- Fund generating activities of terrorist organisations using rogue ships for 'Narco-terrorism'.

- Illegal sea-borne immigration like human smuggling.
- Drug trafficking.

Network Centric Operations

The term ‘Network Centric Operations’ broadly defined as networking and combination of present tactics, techniques and procedures fully or partially in order to achieve advantage over adversaries. It is an information superiority which generates increased combat power by networking sensors, decision makers, information and operational/ tactical levels to achieve shared awareness, increased speed of command, high tempo of operations, greater lethality, increased survivability and a degree of self-synchronisation. Network Centric Operations translates advantage of information superiority into combat operations by efficient and effective linking of all inputs among the fighting forces. This will provide much improved awareness and common operation picture for effective decision making, deployment of forces and to adopt more effective tactics in order to bring early advantage of war.



Figure 9.2 – Model of Network Centric Operations

Benefits of Network Centric Warfare

- A robustly networked force improves information sharing.
- Information sharing enhances the quality of information and shared situational awareness.
- Shared situational awareness enables collaboration and self-synchronisation, and enhances sustainability and speed of command.
- Dramatically increases mission effectiveness.

Attributes of Maritime Force

The attributes of any Maritime Force will depend on the physical environment at which the force is being operating. Naval forces are generally considered as force multiplier due to inherent characteristics they possess over the ground and air forces.⁸⁸

Maritime forces have unique attributes that their operational commanders are to be aware in order for the forces to be used effectively with their full potential.

They have the ability to be self-sustained by replenishing liquids and stores at sea. The most effective form of employment of naval forces is employed jointly with other forces and their elements to achieve more success and effectiveness in modern warfare and peacetime operations. The most important and common attributes are as follows:

Access

Seventy per cent of the earth is covered by water and over ninety percent of which covered by the sea. 2.4 billion of the world's population lives within 100km inland from coast which legitimate the high degree of access to sea by any littoral nation. The freedom of navigation in international waters existed from the past allows interested nations to access to the places of interest by naval forces. Therefore, majority of states has a coastline and they are connected by sea. Maritime forces could be deployed unhindered to most significant areas and to counter threats. Sri Lanka is an Island nation with a vast coastline and connected by sea. SLN is capable of deploying her assets more effectively to most of the areas along the coastline and beyond to counter any maritime threats.

Mobility

Naval forces are highly mobile in many aspects and they are able to move long distances at a stretch. This mobility enables the maritime forces to respond from over the horizon, becoming selectively visible and threatening to potential adversaries. Ability to replenish and be prepared for the sea within short notice, carrying huge payload of fuel oil, food, arms and ammunitions provides enhance flexibility in both tactical and operational levels.

Versatility

Warships can easily change their military posture, undertake several tasks concurrently and be readily available for re-tasking. SLN fleet, especially newly acquired AOPVs could be easily changed their military posture by undertaking several tasks concurrently and be readily available for re-tasking.

Sustainability

As maritime forces have their own integral logistics and material support systems, the range and endurance that they provide support individual units to sustain extended period at sea at considerable distances from

shore or base support. Reach is further advanced with the use of logistics supply ships. SLN also possesses a limited capacity of sustainability in reaching distances with the platforms available.

Resilience

Warships are designed to absorb a fair amount of damage before they become non-operational. However, crews of ships are trained to restore systems at least possible time to minimize the degradation of operational performance due to loss of capability through damage. Further, all officers and sailors are trained to perform basic tasks on board ships/craft. SLN personnel have been groomed to restore systems expeditiously in the event that a ship/craft sustains damage or become non-operational.

SLNS Abeetha was originally a RO-RO (Roll on –Roll off) ship acquired in 1984 which was converted to a military task and deployed as a Surveillance Command Ship (SCS) with the installation of a sophisticated surface search directing radar and other logistic features to support Fast Attack Craft (FAC) operating in the Northern area. This was a very effective force multiplier for operations in the North which seriously jeopardised the activities of the LTTE. On 4th May 1990 around 0155hr SLNS Abeetha was rammed by a suicide boat on its starboard side and the explosion resulted in extensive damages to the ship extending to approximately 80 feet and listing it 10-11 degrees to starboard due to flooding of ballast and fuel tanks and the loss of nine lives. Prompt action taken by damage control teams headed by the Engineering staff acted with resilience and saved the ship from sinking by stabilising the ship, shifting its top weights and by restoring a few systems making it possible to be towed only with a 2 degree list all the way from Point Pedro to Trincomalee.

Poise

Maritime force could remain in station for an extended period of time both covertly and overtly based on the situation. During the time in station, they have the option to do what is best suited for a particular situation. They will be allowed to seize the initiative, act as a force for coercion or deterrence. The ability for forces to poise in international waters gives them an added advantage over land and air forces to avoid the military risk.

When the Task Force of four ships were sailed to attack the enemy floating warehouses deep in the South of Sri Lanka in September 2007, a tactical decision was taken by the OTC of Task Force at a meeting convened during replenishment, to use concentration of force and attack targets when detected using the fire power of all four ships. However, almost simultaneously, when the first echo of a ship was spotted by Task Group 1, another target was detected by Task Group 2. As the second target appeared to be stationary, OTC directed Task Group 2 to remain in poise to get the best advantage. SLN was successful in destroying both enemy floating warehouses one after another making advantage of the attribute poise.

Lift Capacity

Major operations require maritime support to deploy, withdraw, maintain, and reinforce military capabilities and requirements. Airpower could be only used for rapid, quick, limited and short term operations. The most practical and economical way of achieving the above requirements is to sealift with the inherent quality of carrying volumes and sustainability for long duration. Sealift capability enables the land and amphibious forces to transit and poise offshore during the operations.



Security Personnel Transported from Trincomalee to Kankesanthurai Onboard Jetliner

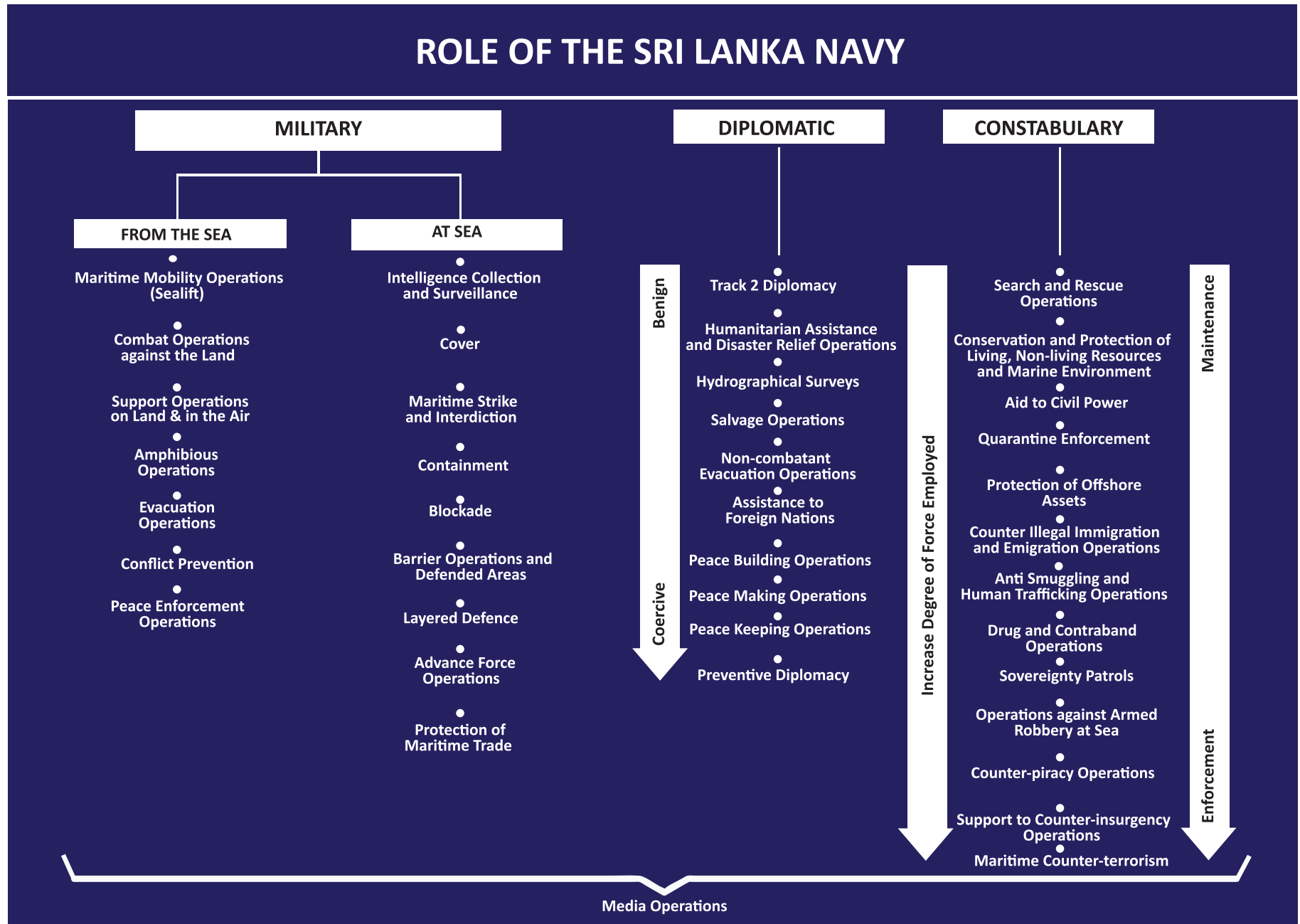


Figure 9.3 – Role of the Sri Lanka Navy

Full range of operations in which a nation's naval forces may be involved is vast, ranging from high intensity war fighting at one end to humanitarian assistance and disaster relief operations at the other end. This broad continuum of operations can be broken down into distinct roles, each demanding a specific approach to the conduct of operations. Accordingly, the three main roles envisaged for the SLN are; Military, Diplomatic and Constabulary.

The Military Role

The essence of all navies is their military character. In fact, the main role is to ensure that no hostile maritime power degrades their national security and interests. The Navy's military role is characterised by the threat or use of force at and from the sea. This includes application of maritime power in both, offensive operations against enemy forces, territory and trade, and defensive operations to protect our own forces, territory and trade. The military role is performed through the accomplishment of specific military objectives, missions and tasks.

Military Role from the Sea

Maritime Mobility (Sealift)

The simplest means of moving forces in the maritime environment is sealift. This involves embarking land forces from a port or harbour and landing them in another port or harbour. The limitation of this type of operation is that developed port facilities are required at both the point of departure and arrival, and because the movement is not tactical, the troops are likely to require a significant period of time to prepare for the operations after landing. In a benign environment this task can be undertaken by chartered or contracted civilian sealift ship, rather than using landing ships/craft to conduct military sealift operations. However, in threat environment landing ships/craft will be the preferred option.

Combat Operations against the Land

The ability of Navies to strike directly at land targets has historically depended upon the position of large calibre guns or embarked fixed-wing aircraft. Surface combatants with medium calibre guns possess a limited capability to conduct bombardment, although effectiveness has improved with increasing accuracy. Providing Naval Gun Fire Support (NGFS) for the support of advancing troops in operations or for camp defence during an attack was a frequent phenomenon especially during the early stages of the conflict when the LTTE was not in possession of large calibre land weapons and suicide boats. However, even during the latter stages whenever amphibious troops landed in enemy territory or when reinforcement of troops or an evacuation operation by sea was planned, SLN was called upon to provide NGFS in support of the embarkation/disembarkation troops, when troops advance along the coast or as a cover to fleet units which are engaged in such operations close to land.

Support Operations on Land and in the Air

Maritime forces offer considerable potential to contribute to combat operations on land and in the air. Medium calibre guns in surface combatants can be used for fire support or bombardment operation, while air warfare sensors and weapons contribute to counter air operations against own forces.

Amphibious Operations

In amphibious operations, naval units embark land forces at ports, transport them by sea to the designated area of operations, launch them against a hostile or potentially hostile shore and sustain them ashore for the duration of the operation. Amphibious operations seek to exploit the superior mobility and carrying capacity of Navies. Amphibious operations are conducted by surface ships with support and insertion of Land/Special Forces.

An amphibious raid is conducted for insertion of a smaller force for a particular and limited task and its withdrawal immediately on completion. An amphibious demonstration is conducted to tie down much larger land forces by threatening but not conducting a landing. This makes use of the maritime forces' ability to poise and be persistent and achieves distraction of the adversary. An amphibious assault is the main landing of forces to seize one or more landing points and secure an objective. An amphibious withdrawal is an operation conducted to remove the landed force. It is a routine evaluation for amphibious forces after their tasks have been completed, because it is an important part of maintaining their flexibility and speed of response.



Landing of Mechanized Infantry Troops During Cormorant Strike Exercise

Evacuation Operations

Warships can be a key element in Service Assisted Evacuation (SAE) and Service Protected Evacuation (SPE). Evacuations will almost always be conducted jointly and seek to use a seaport or airport, but an amphibious operation may prove necessary in undeveloped areas. In the case of SAE, the safety of evacuation is guaranteed by local authorities and the focus

is on achieving the safety and timely removal of national and dispersed persons. In SPE protective operation safeguard the process.

LTTE launched one of its deadliest attacks against the strategic Army base at Mullaitivu on 17th July 1996 and many naval units were rushed from the North and the East to provide NGFS and prevent any reinforcement to the enemy. There was no communication with the besieged Army camp which had sustained severe damages. Initially on 18th July SLN was tasked to facilitate amphibious landings to reinforce the Mullaitivu camp but due to rough sea conditions and heavy enemy resistance the amphibious task force aborted the landing. Though the next day a few landings were possible under enemy resistance, by 22nd July the Navy was tasked to plan and evacuate the remaining troops from Mullaitivu which was successfully carried out by the LCMs.

Conflict Prevention

Conflict prevention activities are generally conducted in accordance with Chapter VI of UN Charter. They range from diplomatic initiative to preventive deployments of forces intended to prevent disputes from escalating into armed conflicts or from spreading. Conflict prevention can also include fact finding missions, consultations, warnings, inspection and monitoring. Preventive deployments will normally need to possess sufficient deterrent capability to avoid a conflict and will therefore seek to overmatch the characters.

Peace Enforcement Operations

These are coercive in nature and normally undertaken under Chapter VII (threat to international peace and security) of the UN Charter, when the consent of any of the major parties to the conflict is uncertain.

Military Role at Sea

Intelligence Collection and Surveillance

Intelligence collection, surveillance and environment assessment gathering activities are conducted during all operations and have obvious application to national requirements outside conflicts; they are vital enablers in maritime combat. Comprehensive intelligence and surveillance are fundamental to the generation of the degree of battle space awareness that will necessary to seize and maintain the initiative and achieve battle space dominance. All maritime units can contribute to the development of this awareness and exploit its products space-based and over the horizon surveillance and intelligence collection systems. Shore based processing, production and dissemination systems also play a vital role, particularly in the provision of prompting information allows forces to be concentrated and focused against a particular threat or target.

Surveillance is necessary for development of MDA, as required for various missions. Surveillance by warships and maritime reconnaissance/patrol aircraft is primarily undertaken through their integral sensors like radars (including early warning radars) and Electronic Support Measures (ESM).

Cover

These are the operations conducted to provide support to less powerful units or detached elements in order to provide security to the detached units out at sea. Covering forces may require positioning within reach of the units needing protection; the cover may also be exercised effectively through the simple threat of intervention.

Maritime Strike and Interdiction

Combat operations are conducted against an adversary's combat and logistics shipping for either a direct strategic effect or to meet and operational or tactical aim. Interdiction of adversary's maritime forces, to prevent their sea control, sea denial or power projection can be conducted from the sea or from the land and can be directed against

targets at sea or in harbour. These operations entail engaging the enemy from the sea. Interdiction operations will be conducted to divert, disrupt, or destroy the enemy before inflicting damages to friendly forces. Some of the measures may include enforcing economic sanction via an embargo of a particular country's international trade.

Containment

These are the operations to restrict the freedom of action of enemy forces. By threatening an adversary's critical vulnerabilities, it is possible to force the diversion of their maritime forces in to defensive role, thus preventing their use of the offensive operations.

Blockade

Traditionally, a blockade could be established by a maritime force against the coast and ports of its enemy to prevent vessels entering and leaving the enemy coastal states. Blockade is an act of war. A vessel that breaches the blockade is liable to be attacked. This expression is used more broadly to mean a combat operation carried out to prevent access to, or departure from the coast or waters of a hostile state.

Barrier Operations and Defended Areas

Barrier operations may be conducted where geography and/or oceanography combine to create a focal area that can be closed to an adversary. Similarly, the requirement to concentrate forces in one particular locality may mean that defended area of operations are the most effective method for their protection. Generally defence in depth is the most effective approach to the problem, with units allocated sectors based on the ability of their organic sensors and weapons to contribute to the force. Defensive mine fields in choke points can be particularly effective mechanism for achieving this aim.



SLN deployment in seas off Nanthikadal Lagoon during final phase of Humanitarian Operation in 2009

Layered Defence

The layered defence is another operation conducted by maritime forces, similar to the method adapted for the defence of a convoy. Escorts, generally surface or airborne, provide warning and weapon coverage against air, surface or underwater threats by acting as moving screens around the high value unit or units to be protected.



Layered Defence-Transferring of Military Personnel onboard Passenger Vessel 'Jetliner' to North

Advance Force Operations

Advance force operations are conducted ahead of a main force, notably by an amphibious force, to make acceptably safe area in which the latter will operate. The naval elements of such activities are primarily directed against and adversary's under water capabilities, mine fields or are concerned with developing improved situational awareness or and knowledge of the operating environment.

Protection of Maritime Trade

Notwithstanding the traditional threat of piracy and armed robbery at sea, changes in the international shipping industry since 9/11 attack, the demand for the protection of merchant ships can no longer be ignored. Masters, charterers and owners are usually neither legally required to accept naval guidance nor, even if threat levels are high, obliged to accept an escort or to form or remain in a convoy. Nevertheless, Navies will still be expected provide protection in the face of threat to maritime trade. These general operations were further complicated with the introduction of onboard security teams (OBST) against piracy/maritime terrorism in recent years.

SLN concept of protecting Chartered Merchant ships carrying essential cargo to North by embarking team of guard as onboard security in early 1990's has become a model for onboard security teams in present day counter piracy operations.

Media Operations

Media operations have gained substantial importance for success in the information age. It provides the ability to monitor and facilitate understanding by the public, explaining the operational situation in a particular context and communicate clearly.

Media operations allow decision makers to consider how international audiences will perceive an internal conflict and even to effect in the manner in which the discussion about a particular operation is possible within the limits of legality and morality.

Suitable integration of media with regard to naval/military operations forms an important component of Information Warfare. During an operation, media influences public opinion at home, in the adversary country and in the international community. It thereby impacts significantly on the course of the operation in many ways. A supportive public opinion at home reflected in the media is particularly critical for morale of the maritime forces. Good media reportage also seeks to disseminate factual information to counter deception and PSYOPS of the adversary. Lately, the advances in communications technology have further enhanced the role of media in armed conflict. Images of the conflict are now available in homes through mass communication networks, some of these virtually in real-time. While the operational commander would need to provide a clear, confident and credible message to the media even the broad contours of operational objectives; the imperatives of security would need to be balanced with the benefits of factual reporting.

The Media Centre for National Security (MCNS) was established during the war in May 2006 at a time when public was practically depending on the false LTTE media campaigns. It was established for the specific purpose of disseminating all national security and defence-related information and data to the media and the public from one co-ordinated centre. It was pivotal in providing accurate information and disproving false propaganda of those who were aiming to discredit the Nation. Media coordinators of all three armed forces, the Police and Special Task Force, attached to the Joint Operations Headquarters (JOH) liaised with field formations to collect and disseminate information.

The Diplomatic Role

Naval diplomacy entails the use of naval forces in support of foreign policy objectives to build ‘bridges of friendship’ and strengthen international cooperation on one hand and to signal capability and intent to deter potential adversaries on the other. The larger purpose of the Navy’s diplomatic role is to favourably shape the maritime environment in the furtherance of national interests, in consonance with the foreign policy and national security objectives. Navies inherently lean towards performing a diplomatic role on account of two main characteristics. The first is their status as comprehensive instruments of a country’s sovereign power, whereupon their very presence in or off a certain area signals the nation’s political intent and commitment to pursue national interests in that region. Hence, their presence or absence can be calibrated to send a political message to potential friends and foes alike. The second characteristic facilitating the Navy’s diplomatic role lies in the attributes of maritime forces, including access, mobility, sustenance, reach, flexibility and versatility. These combine to offer a variety of tools for furthering national interests and pursuing foreign policy goals. Naval forces can be readily deployed; they can perform multiple roles and tasks that can be calibrated in visibility and intensity as per the requirements; and they can just as easily and rapidly be withdrawn, to send a counter-signal.

Track 2 Diplomacy

Interaction among people from advisory groups or nations, intended to explore issues and solutions in an informal and unofficial basis. Typically, this takes the form of academic conferences in which, military officers, government officials and academics participate as private individual rather than as official representatives. However, Track 1.5 Diplomacy is more prominent in problem solving activities aimed at building relationship and encouraging new thinking that can re-enforced the official process.



Galle Dialogue International Maritime Conference

Humanitarian Assistance and Disaster Relief Operations

Maritime forces are ideal means to provide a comprehensive logistic support and refuge offshore base for humanitarian assistance as a means of transport and offshore base. The attribute of flexibility of maritime forces will enhance the effectiveness in disaster relief especially in the early stages of disasters. A maritime force could provide a vast range of assistances such as providing of fresh water, food, medical facilities, make ship arrangement of shelter and energy requirements.



SLN Rapid Action Boat Squadron in disaster relief operation- Rescue of flood victims



Indian Naval Ships Responded Immediately with Humanitarian Aid during 2004 Tsunami in Sri Lanka

Hydrographical Surveys

Hydrographical surveys are considered essential element to improve safety at sea and increases the protection of the marine environment whilst advances national development, enabling efficient and safe maritime transport leading to improve international and coastal maritime commerce. Similarly, hydrographical surveys associated with the sea including safety of navigation, protection of marine environment and national infrastructure development and coastal zone management.

Salvage Operations

The maritime forces may in particular be required to conduct salvage operations in locally and overseas territories where there are frequent natural or manmade disasters. Maritime forces are especially important in the very early stages of disaster due to its special attributes. Maritime forces are particularly specialised for salvage tasks and many of these operations require both manpower and specialised equipment.



SLN Divers Engaged in a Salvage Operation

Non-combatant Evacuation Operations (NEO)

There are increasing numbers of Sri Lankan citizens who work and reside in various parts of the world. They are important contributors to the progress of their countries of residence as well as to Sri Lanka. In view of insecurity and instability in some parts of the world, Sri Lankan citizens there may require to be evacuated under arrangements and control of the Government of Sri Lanka, which could be done by civil or military means, by land, air or sea. The SLN may be tasked with undertaking such NEO as part of its diplomatic role.

Assistance to Foreign Nations

Missions in the diplomatic role also entail provision of maritime assistance and support to friendly states. This may be in the form of evacuation operations, delivering of material aid, maritime patrols for augmenting stability and security and maritime intervention operations. In addition to above, goodwill visits of war ships and exercises, assistance with training of other international maritime forces will enhance mutual capabilities.

Peace Building Operations

Peace building covers actions that support political, economic, social and military measures and structures, aimed to strengthen and solidify political settlements in order to address the causes of conflict.

Peace Making Operations

Peace making covers the activities conducted after commencement of a conflict, to secure a ceasefire or prompt a rapid peaceful settlement. Military support may be required to add weight to the diplomatic process.

Peace Keeping Operations

These are operations undertaken under the consent of all the major parties in a conflict under Chapter VI of the UN Charter, to monitor and facilitate the implementation of peace agreement. Not all peace keeping forces however are controlled by the UN.

The Indian Peace Keeping Force (IPKF) in Sri Lanka from 1987-1990 was deployed as per an agreement between the two States.



IPKF Disembarked in Trincomalee

Preventive Diplomacy

Preventive diplomacy aims to prevent disputes for developing, or to prevent existing disputes from escalating. The capacity of warships to poise and be persistent is particularly important in this phase as governments attempt resolve complex an ambiguous circumstances.

The Constabulary Role

The increasing incidents of maritime crime have brought into sharp focus the constabulary role that Navies have to perform. In the constabulary role, forces are employed to enforce law of the land or to implement a regime established by an international mandate. Force is only employed for self-defence or as a last resort in execution of this role. The protection and promotion of Sri Lanka's maritime security is one of the prime responsibilities of the SLN. This includes a constabulary element, especially where it relates to threats that involve use of force at sea. The range of tasks that the SLN has to undertake in the constabulary role ranges from Limited Maritime Operations to maintain good order at sea. This further includes aspects of coastal and offshore security, as part of Sri Lanka's overall maritime security. Constabulary tasks at sea are neither the primary nor the sole mandate of the SLN.

Search and Rescue Operations

Under international law, all vessels on the high seas are required to assist to conduct maritime search and rescue operations. The Maritime Rescue Coordination Centre (MRCC) located at Naval Headquarters operates under the SLN. This is the National Maritime Search and Rescue Coordinating Authority for Search and Rescue (SAR) operations in the Sri Lankan Search and Rescue region. The SLN works in close coordination with the Sri Lanka Coast Guard and augments efforts as required. In addition, naval assets can also be utilised for SAR tasks in the hinterland, especially in water bodies.



SLN Conducting a SAR Exercise with SLAF

Conservation and Protection of Living, Non-living Resources and Marine Environment

Today is an era of extending jurisdiction and increasing exploitation which resulted in creating huge stress on living and non-living resources in both coastal and high seas. The resource protection task has extended considerably in recent past to include the surveillance and protection of offshore industries and the monitoring of the natural environmental and the actions of humans within it. In this endeavour, ensuring compliance with international and regional conventions/treaties/agreements on prevention and conservation of marine resources are entrusted to maritime forces.

The Oceans and Coastal resources of the Sri Lanka are currently facing three types of separate but, interactive threats. The first is pollution from both land and sea-based sources, which causes direct damage to specialized ecosystem such as mangroves, coral reefs and sea grasses whilst weakening the ability of marine plants and animals to survive. The second is a direct threat to the biomass and ecological balance of the marine environment through over fishing and unsustainable extraction of resources. The third threat is from the direct physical damage to coastal and marine ecosystem from urban development activities.

Sri Lanka is one of the leading nations that has ratified almost forty-one international conventions, agreements, treaties and protocols related to environment. Therefore, it is a national obligation for the country to protect and conserve the environment.

SLN being the ideal organisation to address such issues having the unique character, resources and capabilities to undertake special projects with the aim to establish a sustainable marine environment.

Some of the projects undertaken by SLN are:

- Mangrove plantation.
- Forestry tree plantation.
- Conservation of underwater marine sites.
- Coral plantation and conservation.
- Beach cleaning programmes.
- Dumping control.
- Legitimate fishing activities.
- Conservation of Turtles.



Activities Conducted by SLN to Protect and Preserve Marine Environment

Aid to Civil Power

Naval operations to provide military assistance to the civil power are usually aimed at supporting domestic law enforcement at sea and land with in national jurisdictions.

Quarantine Enforcement

SLN conducts operations to enforce quarantine regulations in Sri Lanka to prevent landing on Sri Lankan shores by unauthorized foreign vessels, which could not detected inadvertently release plants, animal and human disease.

Protection of Offshore Assets

Protection of Sri Lanka’s offshore assets from seaborne attack is an assignment of the SLN, which would require deployment of naval ships and attaining local sea control. The air defence of the off-shore assets is the responsibility of the new naval air surveillance unit in collaboration with SLAF. However, naval ships deployed for protection would assist in

the same, especially for providing radar cover.

Counter Immigration and Emigration Operations

SLN is responsible to assist civil authority to prevent illegal emigration and immigration from/ to Sri Lankan shores.

Anti-smuggling and Human Trafficking Operations

SLN is responsible to suppress trafficking/smuggling of human and illicit trade/transnational smuggling.

Drug and Contraband Operations

SLN is responsible to suppress trafficking of drug and contraband under the national jurisdiction.

Sovereignty Patrols

A specific form of presence undertaken within a State's area of maritime jurisdiction, in support of nation building, to re-enforce claims in contested waters, or otherwise to show the flag in a domestic context.

During the early stages of the war, armed robbery at sea was taking place in the outer limits of the Colombo harbour where ships at anchorage fell victims to such attacks carried out during the night from ashore. However, with the escalation of measures taken for harbour defence inclusive of outer harbour patrols, such robberies were put to an end in an around 2006.

Operations against Armed Robbery at Sea

The SLN is responsible for suppressing armed robbery at sea. By definition armed robbery at sea will occur within the territorial waters and shall be dealt with domestic law.

Counter-Piracy Operations

SLN is bound under the LOSC to suppress piracy whenever it may occur in the high seas. In circumstances where piracy is actively interfering with commerce and other peaceful activities, the same measures which apply in other situations for the protection of merchant shipping must require to be applied in sea control operations.

Support to Counter Insurgency Operation

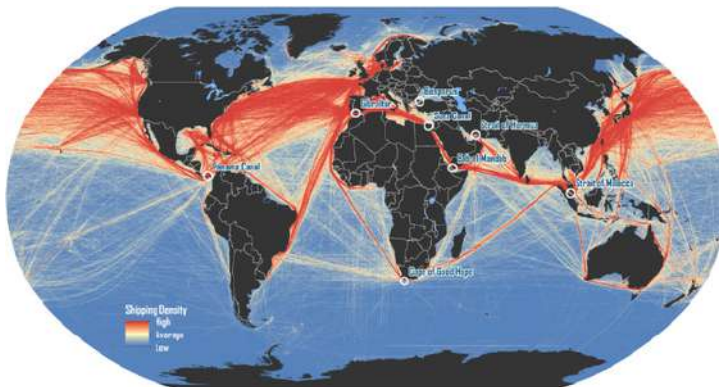
SLN is responsible to assist the law enforcement agencies when called upon for Counter Insurgency Operations.

Maritime Counter Terrorism

The challenge of maritime terrorism and its various manifestations has been growing. SLN is deployed on specific counter terrorism missions independently to counter threats from non-state actors.

Maritime Power in Sri Lankan Context

International shipping transports ninety percent of global trade to people and communities all over the world. Shipping is the most efficient and cost-effective method of international transportation of goods, providing a dependable, low-cost means of transporting goods globally, facilitating commerce and helping to create prosperity among nations and people.

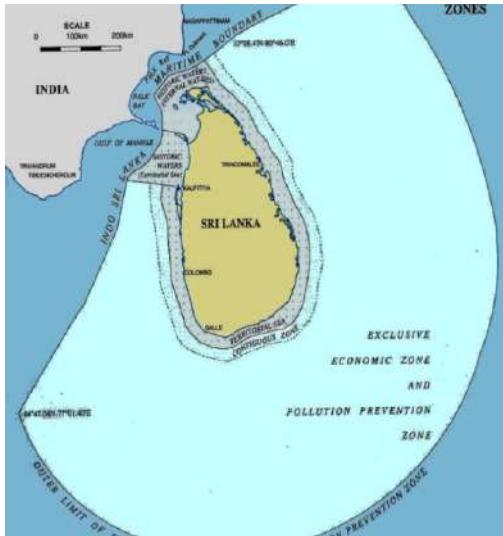


International Shipping Lanes

Sri Lanka is positioned in the centre of the Indian Ocean at the crossroads of East to West and West to East international trade, making it ideally located to become a major logistics hub in the region.

Sri Lanka being an Island nation; it has a great aspiration of becoming a thriving maritime nation. The geographic location of Sri Lanka in the IOR has given a significant advantage for maritime trade. The shipping sector in Sri Lanka is developing rapidly and the Port of Colombo has been recognised as one of the fastest growing ports in the world at present. In connectivity ranking in the year 2018, Sri Lanka has become the 13th best in the world whilst securing the 22nd position in overall container handling. Currently, 20 Main Line Operators in the world are using the Port of Colombo for their shipping operations. The Port of Colombo is the only port in the region except port facilities in the Persian Gulf and the Malacca Strait to handle Mega Container Ships with a reach of 24 boxes. In year 2018 the Colombo Port has handled over seven millions of TEUs, which is the highest number of TEUs handled in the history of port operations in Sri Lanka. This clearly signifies the increase of shipping in an around Sri Lanka and demands higher level of security of SLOC and port facilities.

- 90% of the world's commerce travels by sea.
- The vast majority of the world's population lives within a few miles of the oceans.
- Nearly three quarters of the planet is covered by water.



Total Coastal Belt	1340km
Total Land Area	65,525 Sq km
Internal Waters	1,570 Sq km
Historical Waters	12,060 Sq km
Territorial Waters	18,060 Sq km
Contiguous Zone	19,620 Sq km
EEZ	437,400 Sq km
Continental Margin (Claimed)	1,400,000 Sq km

Maritime security is considered as a vital component in the national security strategy. Today the world’s trend is to march forward on par with the Blue-Green Economic concept which obviously highlights the importance of maritime affairs. Sri Lankan government’s intention is to revisit its maritime policies and merge them with the country’s economic policies. Thus, it gives prominence to maritime activities of the country and more attention has been placed on the role played by the SLN.

BLUE ECONOMY

The Blue Economy is sustainable use of ocean resources for economic growth, improved livelihoods and jobs, and ocean ecosystem health. The Blue Economy encompasses many activities...

- RENEWABLE ENERGY**
Ocean waves, tides and currents can power a city, while wind and solar power development.
- FISHERIES**
Marine fisheries contribute more than 10% of the world's protein. It is a global sector that contributes to food security, income, and employment. Sustainable fisheries can provide more revenue, secure food and help protect the environment.
- MARITIME TRANSPORT**
Over 90% of international trade is transported by sea and the volume of maritime trade is expected to double by 2030 and quadruple by 2050.
- TOURISM**
Ocean and coastal tourism can bring jobs and economic growth. Coastal Least Developed Countries and Small Island Developing States receive more than 45 million visitors per year.
- CLIMATE CHANGE**
The impacts of climate change on oceans—rising sea levels, coral bleaching, changing ocean currents, patterns, and acidification—are staggering. In the same time, oceans are an important carbon sink and help to help mitigate climate change.
- WASTE MANAGEMENT**
Over 10 million tons of plastic waste are thrown into the ocean each year. Better waste management on land can help reduce marine pollution.

To learn about other aspects of the blue economy, visit www.worldbank.org/oceans

WORLD BANK GROUP

In accordance with the employment of maritime power, the country must use seas around her to support own armed forces and other national stakeholder to utilise seas towards their development according to her national policies. Therefore, SLN being the primary organisation, requires to take all possible efforts to project maritime power and ensure security in her jurisdiction on, SLOC and port facilities open for safe and secure shipping operations in collaboration with other governmental institutes. Today SLN is currently transforming with the vision of 'developing' into a naval force capable of achieving SLN's Vision and Mission, and 'To Nurture a Stable Environment at Sea'.



Colombo Naval Exercise (CONEX 2019)

CHAPTER 10

THE ENABLERS OF MARITIME POWER

Organisation

An effective organisation structure is vital to the Navy's efficiency and its capacity to accomplish assigned missions. The objective of the SLN's structure is to align the entire Navy and its' supporting entities into a system which is focused on the delivery of competent naval personnel and the necessary support to deliver desired combat capability.

His/Her Excellency the President of Sri Lanka is the Commander-in-Chief of the Armed Forces. The Commander of the Navy exercises operational and administrative control of the SLN from Naval Headquarters. He is assisted by the Chief of Staff, Deputy Chief of Staff and Director Generals and Directors comprising the Board of Management (BOM) and Board of Directors (BOD). In addition to Naval Headquarters structure, there are seven operational commands. Each command is under the command of an Area Commander for effective command and administrative control.

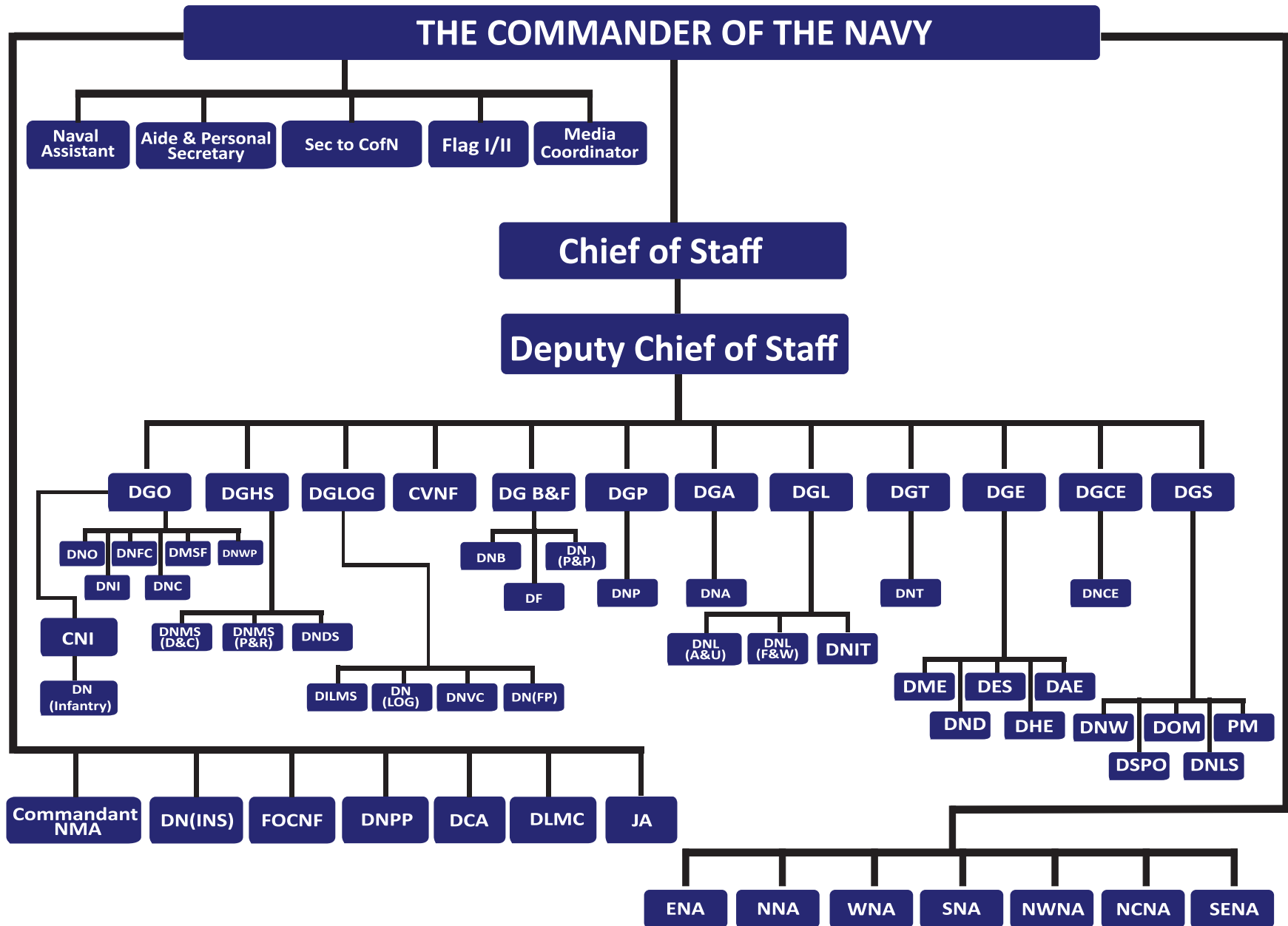


Figure 10.1 - Organisation Structure

Flag Officer Commanding Naval Fleet (FOCNF) is responsible to the Commander of the Navy for effective training and administration of the fleet.

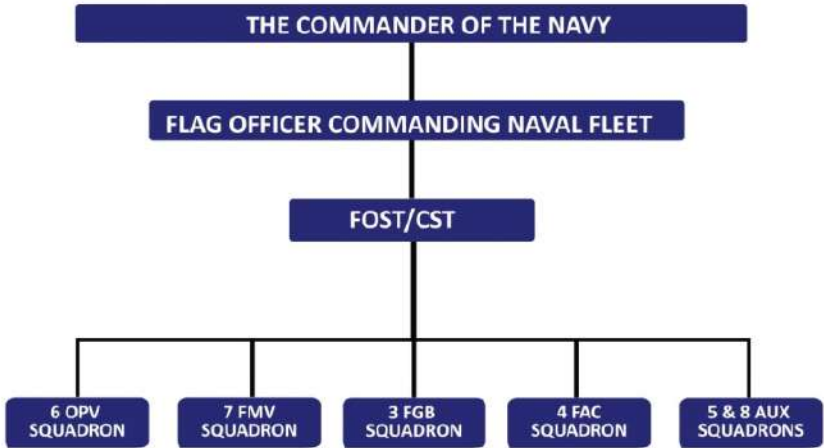


Figure 10.2 - FOCNF Organisation Structure

Sri Lanka Coast Guard

Sri Lanka Coast Guard (SLCG) had initially been activated under the Ministry of Fisheries and Aquatic Resources in 1998. With the enactment of the Coast Guard Act No. 41 on 09th July 2009, the operational activities of the SLCG had been ceremonially inaugurated on 04th March 2010.

SLCG functions under the Ministry of Defence at present and it is a law enforcement agency at sea. Every Coast Guard officer of the Department of Coast Guard shall be deemed to be a peace officer within the meaning for the purposes of the Code of Criminal Procedure Act No. 15 of 1979. SLCG has been empowered with legal authority to search and arrest ships, craft and personnel engaged in illegal activities in maritime zone of Sri Lanka and constitute legal proceedings against the offenders. SLCG has deployed its fleet units and established shore bases, CG stations, CG substations covering whole coastal belt, the territorial waters and maritime zones of Sri Lanka. Its main functions are Maritime Law

Enforcement, Maritime and Marine Environmental Protection, Maritime Safety and International Cooperation.



SLCG Suraksha

Technical and Logistic Support

“The line between order and disorder lies in logistics.”

Sun Tzu

Logistics is the science of planning and carrying out the movement and maintenance of forces.⁸⁹ In its most comprehensive sense, the aspects of military operations which deal with:

- Design and development, acquisition, storage, movement, distribution, maintenance, recovery and disposal of materiel.
- Transport of personnel.
- Acquisition or construction, maintenance, operation and disposition of facilities.
- Acquisition or furnishing of services.
- Medical and health service support.

A sound technical and logistic support is one of the key elements of any professional Navy. No war can be fought without an effective technical and logistic support. When an operation is planned on the table, these two supports are very crucial for the accomplishment of the desired

end state. Therefore, technical and logistic support are critical factors in naval warfare.

SLN is also supported by good technical and logistics bases. The Naval Dockyard Trincomalee has been the strategic centre of operational and logistic support, and the cradle for the Marine Engineering Department since its inception in 1957 when the Royal Ceylon Navy took over the Dockyard from British to date.

Largely, naval logistics is all about providing the correct and required item at the required place at the required time in the required quality. A reliable logistics base is a force multiplier as the commander has the freedom of planning operations without having much burden on logistics.

Training provides the men with skills to fight the war. Logistic provides the means to fight the war and the technical support enables to sustain the war effort. Therefore, technical and logistic support cannot be taken in isolation, it is a part and parcel of any naval activity; planned, being planned and yet to plan.

Major refit or a routine docking of a ship is a good example to see how the logistic and technical support work together to keep the fleet operational. Once the material requirement is prepared, it is a demanding task for logisticians as they need to obtain the correct spares and other required material according to the docking requirements in time. In certain instances, it is required to outsource the jobs mainly due to non-availability of expertise, infrastructure, special tools and equipment within the Dockyard. Therefore, in such instances, logisticians need to arrange the services, spares or tools externally, especially the expertise either from the Original Equipment Manufacturer (OEM) or from another suitable contractor.

Logistic support exists to ensure that naval forces can meet readiness levels and be deployed, sustained and redeployed to meet the operational aims of the commander. Logistic support mainly includes the provision of the stores and spare parts required by units, the supply and resupply of fuel and lubricants, ammunition and food, and the provision

of medical support, maintenance support, and personnel support. The strategic, operational and tactical levels of logistics consist of many support organisations manned by uniformed and civilian staff and contractors. Uninterrupted logistic support is a paramount importance to combat success.

The ship is the very reason for a Navy to exist. A Navy should have sufficient number of fleet units in her fleet to operate in the sea area claimed by the country concerned and as a means of protecting its power. The harbour facilities are required to maintain and sustain the fleet. Further, the technical support is a prerequisite for a fleet and is vital to maintain and sustain the fleet's fighting capabilities. No fleet or maritime force can operate to its potential without shore based logistic support to provide fuel, ammunition, repair facilities, technical support from the base staff and other store demand of provisions need for a fleet to operate in full operational condition.

Technical Support

The technical support and logistics go hand in hand. Most of the time technical support is required to build infrastructure for logistic operations. The construction of piers, storage facilities, boatyards, workshops are essential enablers for a fleet to sustain. Further, availability of repair facilities capable enough to undertake battle damages is essential to maintain the operational state of the fleet. The marine, mechanical, automobile, electrical and electronics and even the civil engineering support is included in the notion of 'technical support'.

Engineering is an important, fundamental and a critical enabling function for maritime capability. In order to control the trajectory of naval engineering as it necessarily evolves, it is essential that we all understand where we are heading and how we plan to operate as an integrated professional engineering network.

At the initial stages when the facilities in the Dockyard in Trincomalee were taken over by RCyN, there were only two main workshops, the Internal Combustion Engine (ICE) workshop and Senior Marine Engineer's (SME) factory. Since then, many other workshops were established to

cater the need of the growing Navy amidst the threat of terrorism. With the Chinese built Shanghai Class Fast Gun Boats (FGB's) joining the fleet in early 1970's and with increasing running repairs a TGBR (Team-Gun Boat Repair) workshop was established in 1980. With Fast Attack Craft (FAC) joining the fleet in 1986, a FAC repair workshop was established and rapidly expanded with the increase of FAC joining the fleet. Likewise a Deutz workshop at Welisara Naval Complex in 2003 and Central Yanmar Repair Workshop at SLNS Pandukabaya at Medawachchiya was established in 2007 to handle repairs of Inshore Patrol Craft (IPC) main engines.



SLN Dockyard Trincomalee, the Premier Technical Organisation

Similarly the birth of the Electrical and Electronic branch was also in 1957 with the RCyN taking over the Dockyard, Trincomalee and its primary duties had been power generation, its transmission and telecommunication network covering government, private and service institutions between the Naval Dockyard and Clappenburg Bay. With the acquisition of ships to the RCyN fleet the branch expanded rapidly and by 1996 the department had a major role in providing advanced secure communication to the Navy to overcome the frequent enemy infiltration to the tactical communication network of SLN. Network Centric Operations became more efficient and by 2007/2008 the microwave backbone was commissioned by erecting masts which facilitated the Maritime Domain Awareness project enabling continuous VHF/UHF communication with units at sea in operational areas, greater

height of eye for radars and EOD's enabling extended surveillance. The established microwave highway has facilitated video conferencing and data transmission throughout the seven naval areas. Data networking facilitated the Area Commanders and Naval Headquarters to stream real time video and battle picture by radar of tactical operations conducted during the last phase of the Humanitarian Operation. With improvements to NAVAIDS, a state of the art network centric surveillance system consisting of over the horizon High Frequency surface wave radars were acquired in 2008/2009 which tremendously improved the land based surveillance to further enhance MDA in order to deter unlawful activities happening even beyond the horizon of our coast. Thus, the Electrical and Electronic Department was not merely a technical support arm but a solution provider for real time decision making at the height of the war.

Civil Engineering Department has its roots dating back to 1966 where 56 men of the Royal Ceylon Army who were provided to repair the damages and clearance operations of shore facilities in Trincomalee harbour and its environments caused by the 1964 cyclone, were enlisted to the Work Service Branch of the Royal Ceylon Navy. The establishment of the first landlocked Naval Command, the North Central Naval Command at Medawachchiya in 1996 as a Rear Headquarters to the naval battalions deployed for the 'Operation Jayasikuru' was one of the major accomplishments of this branch. In late 1990's the influx of Volunteer Special Scheme (VSS) sailors into this branch facilitated undertaking of many projects simultaneously.

Construction of accommodation for naval personnel, swimming pools, slip ways, reconstruction of damaged piers, Ranajayapura housing project and tower erections are some of the mega projects undertaken by this branch along with the establishment of the Northwestern Command, Southeastern Command and construction of cantonments, large naval bases and satellite bases with prefabricated steel buildings after the conflict in 2009. The proven capabilities in undertaking constructions of various magnitude and variety by this branch has been well admired and recognised which has prompted successive governments to utilise personnel of this branch for national infrastructure development projects.



SLNS Sayura extensive dry docking repairs at Colomb Dockyard PLC



'PH Bay' at Kankesanthurai Harbour

Logistic Support

“A real knowledge of supply and movement factors must be the basis of every leader’s plan; only then can he know how and when to take risks with those factors, and battles are won by taking risks.”

Napolean CA 1805

No war can be planned or fought without a sound logistics plan. Alexander the Great’s ability to move a force from Greece to India and back, conquering adversaries in Europe, Africa, the Middle East, and Central Asia and leaving functioning outposts along the way, attests to his logistical prowess. Logistic support includes medical and repair facilities, movement of personnel and the transport of the fuel, lubricants, ordinance, spare parts, food and other provisions and the many stores required for operations. Logistics planning must be integrated with all other aspects of the campaign plan or failure will almost inevitably follow. The planning of a major operation has to be integrated with the sound and viable logistics plan. The operation and the logistics have to move together. The commander who draws the battle plan should give due consideration to the constraints and restraints of logistic support.

Logistics operations are much of the same in peace time and in the time of war. The sea will remain the main medium of transport for large, heavy and bulky items that require considerable amount of space for which ships are designed for. However during the war, magnitude of the supplies needed and the pace and interval it is required in the battle field is different. An uninterrupted supply line is a decisive factor in maintaining morale of the men and winning or losing a battle.

During war time using of SLOC may be a critical vulnerability and logistics ships will required to be escorted under protection in sea convoys. Sometimes, due to time constraints, logistics need to be arranged from other services. Logistics supply can sometimes go beyond just purchasing war materiel from possible local manufacturers/suppliers. As far as the supply of certain war materiel and vessels are concerned, they need to

be procured from foreign countries and in such instances the logisticians may have to negotiate with representative of foreign countries and to enter into agreements with friendly countries for the supply of weapons and ammunitions.

“Logistics considerations belong not only in the highest echelons of military planning during the process of preparation of war and for specific wartime operations, but may well become the controlling element with relation to timing and successful operation.”

Adm OC Badger,USN

Naval logistics covers the full range of logistics operations in support of the functioning of the Navy smoothly in peace and at war. Levels at which logistic support can be provided could be categorised as follows:⁹⁰

Strategic Logistics

Encompasses a particular nation’s ability to deploy and sustain its operating forces in executing the national military strategy and hence linked to a nation’s industrial base which may include the nation’s manufacturing, agricultural, transportation and health service sectors. The determination of strategic requirements, procurement, planning logistics aspects of regeneration capability, central storage and bulk distribution are all military strategic logistics functions.

Operational Logistics

The movement of logistics into, within and out of theatre; establishment of logistics bases; the apportionment and allocation of logistics between subordinate commands; and the protection of logistics bases on land and along lines of support. It basically involves coordinating and providing intra-theatre logistics resources to operating forces supporting activities required to sustain campaigns and major operations within a theatre and it is also the level at which joint logistics responsibilities and arrangements are coordinated. It provides linkage to strategic level and enables us to succeed at the tactical level.

Tactical Logistics

Focuses on planning and support within and among operating units of the task force or battle group by drawing up of resources made available at the operational level. The tactical level support functions include maintenance, battle damage repair, engineering, cargo handling, fuelling, arming, moving, sustaining, materiel transshipment, personnel and health services.

Naval Logistics in War - The SLN Experience

SLN has a good experience in Naval Logistics. During the three decade war SLN logisticians performed their duties well to meet the operational requirement in the battle field. SLN had to acquire most of essential war materiel from outside sources from the 7.62mm ammunition to heavy guns and stores. The pace at which the items had to be supplied and replenished was a critical factor in the operations.

The distribution of the acquired or purchased items also falls at the hands of the logisticians. War materiel, mainly; victualling items, medical facilities, training aids and spares for maintenance had to be distributed to the end users out of which most of them were in the battle front with no land access. The transportation of items had to be coordinated with sea convoys scheduled to operate from Trincomalee. Some of the critical items needed with urgency had to be air lifted with the assistance of SLAF from their Base in Colombo or Anuradhapura.

During 'Hunter Killer Operation' where SLN in an unprecedented hunt, destroyed the adversary's floating warehouses thousands of miles away from the coast, SLN used its units in the Auxiliary fleet to replenish the Task Force with fuel and water at a predetermined location in high seas.



Logistics Movement for Islands in Northern Naval Area

It is not only the burden of supplying and distributing the items that the logisticians have to deal with, but also the responsibility of disposal of items also lies with the logistics department. The items issued to a ship/craft on permanent basis have to be returned to the logistics department after the economical use for disposal.

Principles of Logistics

- Responsiveness - providing the right quantity, in the right quality, in the right place at the right time.
- Simplicity - avoid unnecessary complexities in preparing, planning and conducting of logistics operations. Avoid unnecessary documentations and critical nodes in the supply chain.
- Flexibility - the ability to adapt the logistic support to changing conditions.
- Economy- Employing of logistics assets should be economical, justifiable, reasonable and effective.
- Attainability – Acquiring the minimum essential logistic support to begin combat operations.

- Sustainability- Providing the logistic support throughout the planned operation inclusive of the unforeseen events.
- Survivability – Ensuring that the logistics infrastructure prevails in spite of degradation and damage.
- Coordination and Cooperation - Cooperation and coordination across the full spectrum of logistics, including between civilian and military sectors for to the best use of limited resources.



Distribution of Food using a LCM

Logistics Operations - Sealift of Logistics during War

The distribution of logistics was a major challenge during the war. At the latter part of the conflict there was no land routes opened beyond Vavuniya to the North.

The government forces were literally isolated in the North. The only link they had was the SLOC except the airlift which was constrained by the weight it could carry and the non-availability of adequate logistics Aircraft. The intention of the enemy was to starve the peninsula, demoralise the military and re-capture Jaffna.

SLN had a herculean task to provide an uninterrupted supply of logistics not only to the naval forces stationed in North but also to the sister services and Police serving in the North by sealifting the required logistics. This was the key factor in sustaining the fighting capability of troops stationed in the Northern peninsula.

From ammunition to pieces of artillery and armed tanks all were sealifted. Therefore, SLN logistics had played a key role in supplying items to the battle front during the time of war with many constraints.

The limitations of supplying critical items have to be considered when planning an operation. The crux in logistics is the commander's decision and logistics plan. Therefore, it is the responsibility of the commander or the commanding officer to have a justifiable logistics requirement and it is the responsibility of the logisticians to advice the commander on availability and constraints in supplying the items. For the smooth and effective functioning of logistics, foreign procurements are handled at the headquarter level. Most of the items required for maintenance and periodical routines of machinery of the fleet need to be obtained from foreign suppliers. Each command has logistics department to facilitate the timely requirements of the fleet and shore establishments.

Shore Support

The logistics support mechanism is founded directly upon shore support, a concept which embraces not only service facilities such as bases and supply units, but private contractors as well, both domestic and international. In addition, as formal arrangements through diplomatic channels, with allied governments for access to material and technical support is also another avenue to fulfil the logistics requirement. The sophistication of such support will depend upon the point within the logistics chain that it operates, as well as the importance and urgency of the need.

Reach and Sustainment

However capable naval forces are, their potential is very well enlarged by the availability of support vessels. Nevertheless, there are few modern maritime operations which can be conducted effectively without such support. At its most sophisticated, extending to repairs of ships as well as stores, ammunition, food and fuel supply ships, such support can make a naval force independent to a greater extent.

Chartered Shipping

Support capabilities can be enhanced by chartering or leasing merchant ships and modifying them to the extent required by an operation. Certainly, effective sealift in strategic terms rests even more upon the capacity to access commercial tonnage than it does upon naval vessels. Commercial vessels cannot produce the capabilities of purpose-built replenishment ships, but they can play a vibrant role in maximising the capacity of the purpose-built replenishment ships by acting as resupply units between shore bases and the operational area. Mechanisms need to exist for the identification of suitable hulls within the national register and in these circumstances the possession of a substantial national flag merchant fleet can be a vital strategic advantage.

During the latter part of the Humanitarian Operation, a vessel propelled by four water jets that could carry 900 troops and 160 vehicles on two decks was dry leased from a government owned company in Indonesia for transfer of troops to the North from the East and vice versa. With the modification of the two vehicle decks to carry troops by the Engineers of SLN the 'Jetliner' was converted to carry 3000 troops which became the aorta to the northern theatre as it could relieve a large number of troops on leave/duty in one day. The weekly movement of this ship from Trincomalee to Kankaenthurei and back was the most risky, arduous but successful logistics operation carried out at that time with sound planning and execution by using a significant number of ships/craft in the Navy, whilst obtaining support of artillery from SLA and air cover from SLAF for the safety of this sea convoy.

Function of Technical and Logistic Support - Centre of Gravity

While primarily a strategic and operational level concern, the identification of both adversary and friendly centres' of gravity is an essential element of any plan. If the staff gets wrong, the operation will at best be inefficient and at worst, end in failure.

Therefore, when taking most of the tangible critical requirements, they fall into category of technical and logistics. Thus, technical and logistic support mainly featured in the critical requirements to make operational critical capabilities, which enable a centre of gravity to function.

Diving and Salvage Unit

The demand for diving and salvage in the maritime domain exists during both peace and war time. Diving and Salvage unit was initially formed in 1962 to carryout diving and salvage operations in SLN. Naval divers are tasked to perform; underwater inspection, clearance, maintenance, repair of naval vessels salvage work, underwater demolition, assistance

to repair, maintain harbour security systems, assistance to underwater construction, underwater photography, underwater video graphic, lifesaving, repair and maintenance of diving equipment, conducting diving training, underwater clearance of explosive or ordnance, search and rescue missions and conduct Recompression Chamber (RCC) tests and treatments.

Command Diving unit at Dockyard, Trincomalee is the central diving station facilitated with diving stores, repair workshop and recompression chamber facility. The two recompression chambers available have saved many patients suffering from decompression sickness while diving, from death or paralysis and this hyperbaric treatment facility is available only with SLN in Sri Lanka to date. During the conflict SLN divers played a major role in mine clearance operations especially when improvised sea mines were laid by the LTTE in the naval SLOC in shallow waters of the Jaffna peninsula. With the development of controlled mines, contact mines, limpet mines, moored mines and electronically operable contact mines by the enemy, the brave divers of SLN conducted clearance operations in trying conditions even in deep waters to safeguard the SLOC and provide a safe passage for the fleet.

Salvage operations is another field in which naval divers displayed their professionalism especially after stranding, grounding, capsizing of vessels in cyclones, attacks by enemy and after the Tsunami in 2004. Even after the conflict, the divers contributed immensely to re-float vessels that were damaged/sunk by the enemy in harbours/harbour entrances to prevent them being hazardous to safe navigation.

Divers carry out tremendous assistance to civil authorities as well. Being trained in water borne skills, divers are called upon by the Department of Irrigation for emergency repairs to sluice gates and clogging of reservoirs and the local Police for recovering remains of drowned persons and investigating underwater crimes.

Research and Development Unit (RDU)

With the realisation that SLN has the basic ingredients and potential to implement successful research and development projects, an

appointment for Research and Development at Naval Headquarters had been created in 1996.

RDU of SLN had been established in year 2005 at Naval Headquarters. It is also an integral component (Marine Wing) of the Centre for Research and Development (CRD) established under the Ministry of Defence (MOD), in order to support developing systems for armed forces and Police. SLN will undertake selected R & D projects under CRD with direction from CRD steering committee, as well as independent R & D projects to cater specific SLN requirements. The main role of the unit is to carry out research and finding solutions through scientific procedure for technological improvements. Many engineers, scientists and civilian consultants were recruited to serve in the Volunteer Naval Force for this unit.

Some of the projects carried out by RDU includes design, fabrication and distribution of a low cost Infusion System free of charge for Thalassaemia patients, development of small arms firing simulator system for trainees saving cost for ammunition and training in a risk free user friendly environment, Improvement to stability of Arneson Control System (ACS) for P444 Series FAC, tide monitoring system, weather monitoring system, AIS data recording system, low cost anemometer for wind monitoring and a simulator platform with three degree of freedom. At present, RDU is working on a Underwater Acoustic Sensor Array which will specifically designed for local environmental parameters which will enhance maritime security by being able to detect the presence of intruder or vessel automatically at an effective range, determine the direction of approach and determine the range of the intruder.



RDU Sailors Engaged in Repairs

Naval Armament Department (NAD) and Sub Units

NAD is located in Trincomalee functioning directly under Naval Headquarters for operational matters and the Area Commander for administrative matters. Maintenance and repairs of all main armaments on board the fleet were undertaken by the NAD with the taking over of dockyard facilities by the RCyN in 1958. With the requirement of maintaining and overhauling the weapons of Chinese FGB's the need of a specialised unit to maintain main armaments arose and over the years the NAD expanded with new acquisitions to the fleet with state of the art weapon systems and land weapons. Today, NAD is capable of maintaining all types of weapons available with SLN with additional workshops, maintenance tools and having personnel with specialised skills.

Sub Units of NAD were initially established in 1999 with experienced gunnery sailors to effect urgent repairs and routine maintenance of all weapons fitted on the ships/craft and naval establishments in the Northern and Western Naval areas within a short period of time efficiently. They also stored limited stocks of ammunition and explosives for urgent issuing and today expanded to other naval areas as well.

Cyber Security Cell (CSC)

CSC was established in 2018 at Naval Headquarters with the aim to protect Information and Information Communication Technology (ICT) assets from multi-faceted cyber threats by monitoring, reviewing and analysing the security infrastructure and procedures adopted within SLN continuously and to respond instantly for any sort of breaches in cyber security in accordance with Information Security Policy. CSC will conduct inspections/audits on data centres, data network infrastructures and end user devices for identification of possible vulnerabilities to ensure their security controls are in par with policy and standards defined by SLN.

Directorate of Naval Design (DND)

DND was established in 2018 at Welisara, Colombo with the intent of undertaking conceptual ship design by year 2025 to uplift the operational versatility of SLN and to promote Sri Lanka as a significant maritime nation. DND is expected to be a leading professional unit in ship design in Sri Lanka by 2025. DND is to ensure radical improvement by technology transfer to gain naval ship designing capabilities for its staff, building professionalism while yielding maximum economy of effort for public resources. DND is to achieve monetary benefits by optimising naval architecture designs whilst purchasing naval vessels for SLN from foreign navies/ship builders. The Directorate is still in its developmental stage and has plotted a detailed development plan, identifying key objectives to be achieved each year by fulfilling infrastructural necessities.



DND Staff Designing a Craft for SLN

Naval Boat Building Yard (NBBY)

In 1985, the Navy introduced the Inshore Patrol Craft (IPC) concept to carry out operations in lagoons and shallow waters by using shallow draft boats powered by petrol driven Outboard Motors (OBMs). Due to high operating cost, frequent breakdowns of OBMs and limited time between overhauls, in 1987, the first Water Jet IPC driven by inboard diesel engines was introduced to the Navy.

The achievement of higher speeds, better manoeuvrability and reliability of the craft, created an immediate impact on operations carried out in coastal shallow waters and lagoons. Due to escalating cost of new boats a pilot project was launched in 1998 to refurbish the first generation IPC by converting them to inboard diesel engines and water jets. The success of this project by way of cost and performance encouraged SLN to consider in-house boat building. The engineering staff took up a challenge in building a new class of IPC to meet the customised requirements of the fleet. This was the foundation of the Inshore Patrol Craft Construction Project (IPCCP) the predecessor of NBBY which was established in year 2000 at Welisara, in Colombo. During the Humanitarian Operation

extensive use of Arrow boats (Cedric boats) and Wave Riders (an improved design of IPC to match the Arrows) capable of fitting 4x250hp OBM's and subsequently inboard diesel engines were built by IPCCP with lower profile, greater speed, superior manoeuvrability, high fire power, ultra-shallow water operating capability proved vital in winning the battles at sea. This new fighting concept was based on 'swarming-tactics' in which a flotilla of small boats, operating as a 'swarm' confronts directly with enemy's small boats (Attrition warfare). A boat was built every 8 days and by the end of the Humanitarian Operation a total of 80 IPC inclusive of Wave Riders and 180 Arrow boats (Cedric boats) had been constructed at the IPCCP. By building these boats indigenously, SLN saved colossal amount of money to the country as well. These craft are now extensively used for special operations, coastal protection, harbour defence and assistance to marine community.

Today, NBBY has complete facilities for on-site Glass Reinforced Plastic (GRP) boat construction and modifications. It is equipped with marine, electrical and electronic engineering skills and well reputed engineering synergy. From the state-art ship designing, efficient hull manufacturing, ship powering, machinery installations, interior refurbishing and ship safety regulations, NBBY has the best technical expertise, qualified workforce in Sri Lanka to facilitate all marine vessel requirements maintaining their standards up to international level, utilising sole technology developed by SLN. The refined objectives of NBBY are; to manufacture craft up to Coastal Patrol Craft for SLN with minimal cost, to upgrade continuously resources leading to manufacture diversified boats for operational requirements of SLN, to develop core competencies with technical know-how for SLN personnel, to be self-reliant in small boat construction and to build boats for other stakeholders.



Construction of a IPC for Republic of Seychelles Coast Guard at NBBY

Machinery Testing and Trials Unit (MTTU)

The aim of establishing MTTU is to predict machinery failures in advance using appropriate techniques and assist to re-structure/plan repair and maintenance strategies accordingly. The unit was initially established in year 2012 at SLN Dockyard, Trincomalee and was helpful in cutting down huge costs involved with Planned Preventive Maintenance (PPM), failure risks with Breakdown Maintenance (BM) which are labour intensive and ineffective in identifying problems that develop between scheduled inspections.

Alternatively, by introduction of a suitable Condition Based Predictive Maintenance (CBPM) programme, it assures optimal utilisation of machinery since it evaluates the condition of equipment by performing periodic (offline) or continuous (online) equipment condition monitoring. The ultimate goal of the approach is to perform maintenance at a scheduled point in time when the maintenance activity is most cost-effective and before the equipment loses performance within a threshold. Most predictive inspections are performed while equipment is in service, thereby minimizing disruption of normal system operations resulting in substantial cost savings and higher system reliability.

To evaluate equipment condition, predictive maintenance utilises non-destructive testing technologies such as infrared, acoustic (partial discharge and airborne ultrasonic), corona detection, vibration analysis, sound level measurements, oil analysis, and other specific online tests.

MTTU has enabled SLN to take advantages of latest global technological trends in maintenance strategies to optimize life of machinery at a least maintenance cost without compromising reliability. In 2017, the unit was re-located at SLNS Mahasen, Welisara in collaboration with Central Non Destructive Testing Unit (CNDTU) under the direct supervision of Naval Headquarters. Today, MTTU has earned the credit of becoming one of the leading machinery condition laboratories in Sri Lanka.



Oil Wear Down Analysis



Vibration Data Recording

Chemical Biological Radiological and Nuclear (CBRN) First Response Organisation

The aim of establishing a dedicated CBRN First Response Organisation within SLN in 2017 is to take protective measures in situations where CBRN hazards/emergencies which can occur in major ports/harbours and in territorial waters. Initially four teams were located at Colombo, Trincomalee, Galle and Kankasanthurei harbours respectively with NBCD qualified officers and sailors.

With the establishment of CBRN First Response Organisation, SLN became a key stake holder of National Authority for Implementing Chemical Weapons Convention, Sri Lanka Atomic Energy Regulatory

Council and Disaster Preparedness and Response Division at Ministry of Health.

During the recent COVID-19 pandemic, the biological component of this unit carried out a tremendous service by coordinating and conducting several disinfection programmes in government institutions and public places such as railway stations, public transport, quarantine centres and carrying out sanitizing process for sea marshals in accordance with proper sterilization guidelines to prevent further spread of the virus.



SLN CBRN Exercise at Port of Colombo

Network Management Centre (NMC)

The Network Management Centre (NMC) headed by a Network Manager has been established in 1999 in order to ensure smooth and efficient functioning of SLN Telecommunication and Data Communication Network. NMC has already established Telecommunication and Data Network extending to all naval areas for effective utilisation of Voice and Data services in meeting operational and administration obligations of SLN. The network consists of Node Centers in each command linked with microwave radio links, PABXs, data routers and switches and relevant end user devices. It is envisaged that future upgradation will facilitate full remote monitoring and maintenance of SLN Telecom and Datacom

Network with Naval ICT systems without any interruption.

Plans are afoot to upgrade data capacity and upgrade PABX to latest SIP enabled technology in keeping with the advancements of technology providing digital voice, data, video, sensor information towards secure, advanced, fully paperless administration and operations of SLN.



Routine Inspection at NMC

Naval Biomedical Unit (NBU)

SLN Biomedical Engineering Unit has been initially established at Naval Headquarters in year 2005 with the aim of ensuring the operational availability and improve mean time between failure of all biomedical equipment used in the Health Department of SLN, and later extended to other areas. The Central Biomedical Engineering Workshop at present functions at Naval General Hospital (Colombo) at Welisara and biomedical engineering workshops in areas are responsible for repair and maintenance of all biomedical equipment used in naval hospitals and sick bays. Specialised biomedical engineer officers and biomedical engineering technicians along with necessary tools and equipment have been set up at all naval hospitals in order to carry out planned preventive maintenance, break down maintenance, installation and calibration of

biomedical equipment. Setting up of biomedical engineering equipment of the state of the art University Hospital at General Sir John Kotelawala Defence University was carried out by the SLN biomedical engineers and technicians and maintenance of same to date. Upgradation of workshops with advanced calibration tools and developing technical capabilities of engineers and technicians are future challenges in the biomedical engineering domain.



Biomedical Engineering Staff at Work

Weapon Engineering Unit (WEU)

Weapon Engineering Unit was established in 1997 in Naval Dockyard, Trincomalee to introduce new technology in weapon engineering/fire control systems while maintaining and upgrading the existing weapon systems with high sensitive electro optical devices to suit the perceived threat. The section is responsible for repair/ maintenance and upgrading of all electrical and electronics parts of stabilised weapon systems, electro optical devices, Xenon searchlights and day/night vision of SLN.

This unit was very much in action during the latter part of the conflict commencing year 2006, by developing many indigenous innovations at a very short period of time using technology and limited available resources that not only saved many lives but millions of rupees for the government.

When the enemy matched the 23mm Typhoon weapon system mounted on FAC, a weapon with long range over enemy was greatly in need and hence the procured 30mm gun was fixed on to the stabilised 23mm GCM with necessary modifications by this unit thereby giving range advantage over the enemy and also more destruction power by using 30mm HE ammunition. Development of Sea born Stabilised Multi Barrel 122mm Rocket Launcher (SSMBRL) for deception and cluster dispersion at very long ranges, integration of seven/single barrel 107mm rocket launcher to Typhoon weapon system for long ranges and cluster dispersion, installation of EODs on board Wave Rider boats for close surveillance of the beach to prevent enemy escaping from sea during the final days of the Humanitarian Operation, development of a hydrophone to detect underwater saboteurs, modification of convoy buses for protection of passengers from claymore mine explosions, development of a jammer to prevent remotely controlled claymore mines targeting road convoys are a few of the other projects undertaken by this unit.



WEU Staff Attending Repairs Onboard a FAC

Electrical New Design Centre (ENDC)

With a view of replacing obsolete systems of ships and craft in the fleet with modern technological innovations, a Fleet Electrical Design Workshop and Training Cell was initially established with limited resources at the Eastern Naval Command, Trincomalee in year 2016. Thereafter, all electrical installation designs of fire alarm/bilge alarm systems and steering control system for FAC and designing and developing of simulators of engine/steering control systems like MTU, Noris, MJP, Kamewa, generator control module and gyro stabiliser for training purpose were undertaken by the Fleet Electrical Design Workshop and Training Cell. In view of getting updated with the technological advancements, the staff employed in this cell was given an exposure to work with the relevant outside organisations. In year 2019, the nomenclature of the fleet electrical design workshop and training cell was renamed as Electrical New Design Centre and its future scope includes upgradation of naval propulsion and steering control systems for remaining FAC and indigenously designed Electro Optical Surveillance System (EOSS) which is expected to bring about a significant cost saving as well.



ENDC Staff Undertaking a Project

Sri Lanka Navy Hydrographic Service (SLNHS)

On 13th March 1984, as a national effort, the National Hydrography Office (NHO) was established under the National Aquatic Resources Agencies (NARA) with the Navy's hydrography equipment, and the SLN as a partner to head the operational branch.

SLN re-activated the hydrography capabilities in an integrated approach, which will be beneficial to the nation. The SLNHS will provide value to defence establishments of Sri Lanka by delivering the hydrographic services, which enables SLN, Department of SLCG and other defence organisations to undertake current and potential future operational tasks in times of peace, crisis including emergencies or war. Accordingly it will work with the Ministry of Defence to define and develop continually improved nautical products and services for military use, especially by integrating the modern technological advances in the process of making digital products instead of its traditional paper charts and publications within Sri Lanka's jurisdiction. It will also take appropriate actions to satisfy international obligations under SOLAS convention assuring safe passage for the vessels and other marine activities in Sri Lanka's waters. Since SLNHS is equipped with state of the art equipment, technologies and professional human resource, SLNHS will continue to provide assistance to stakeholder governmental institutions/organisations to meet national demands. SLN intends to extend its expertise to institutions like Universities, Telecom and Petroleum Corporation thus pooling the resources for better productivity.

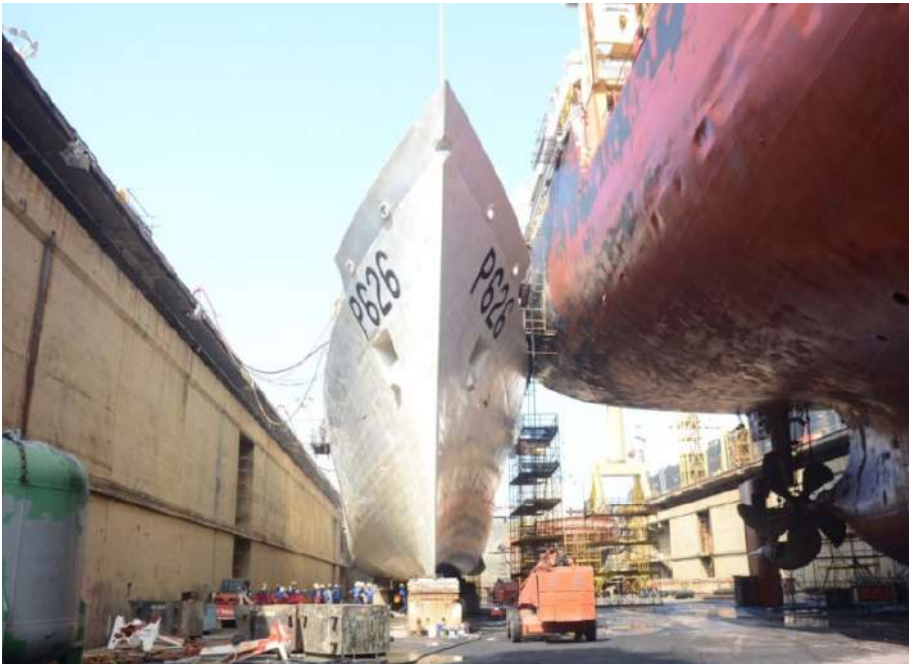


Chief Hydrographer Handing Over First Survey Chart to Commander of the Navy in 2019

Industry

An effective affiliation with international and national industry is vital for the development and support of sophisticated naval forces. Navies are particularly demanding in terms of skilled and competent people, new technology and manufacturing. Successful meeting of such demands on shipbuilding, system development and integration with sound management, as well as in-service support, brings considerable benefits for industry and the national economy as a whole.

Sri Lanka needs to maintain a careful balance between generating combat capabilities and gaining productive long-term national industrial benefits. Success in meeting this challenge depends upon close cooperation among the government, Navy and industry.



SLNS Gajabahu docked at Colombo Dockyard PLC

CHAPTER 11

NAVY PLANNING

“If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle.”

Sun Tzu

Characteristics of Operational Warfare at Sea

The main characteristics of operational warfare at sea, as compared with tactical actions are larger dimensions of time, space and force. The principal reason for these differences is the scale of an operational or strategic objective compared to a tactical objective. Major naval operations and maritime campaigns are conducted in a large part of the theatre; in contrast, naval combat is conducted in a much smaller part of a given maritime theatre.

Maritime campaigns and major naval operations require much more time to plan, prepare, execute and complete than do naval tactical actions. A naval battle or engagement can be concluded in a matter of hours, while a major naval operation is conducted over several days or even weeks.

In the modern era, the application of operational warfare at and from the sea is predominantly a multiservice (joint) and often a multinational (combined) effort. A maritime campaign or major naval operation encompasses several major overlapping phases, while a naval tactical action usually does not include any clear break in fighting. The operational commanders make planning assumptions about a number

of military and non-military aspects of the situation in the maritime theatre, projecting several weeks or even months into the future. With this wider perspective and increased uncertainty comes an increase in the risks the operational commanders and their staffs must take. Another distinction compared with tactical combat is that planning for and execution of a maritime campaign and often for a major naval operation requires synchronized use of both military forces and non-military sources of power.

Prerequisites of Operational Warfare

Success in the practical application of operational warfare at and from the sea is not possible unless several key prerequisites are met. The conduct of a maritime campaign or major naval operation requires sufficient physical space for one's forces to manoeuvre freely. This is not a problem in a war on the open ocean but can be a limiting factor in an enclosed or semi enclosed sea. The operational commander's mastery of tactics in his chosen specialty is a key prerequisite for success at the operational and strategic levels of war. The operational commanders and their staffs have to think broadly and far ahead. Among other things, they have to evaluate properly not only military but also non-military aspects of the situation and its trends in a given part of the maritime theatre. They should have comprehensive knowledge and understanding of the levels of war at sea and their mutual relationships. They also need to know and fully understand the linkage between policy and strategy and the interrelationship of strategy, tactics and operational art and design. Success in planning and conducting maritime campaigns and major naval operations cannot be achieved unless there is agreement on the key aspects of operational warfare or a common operational outlook.

The operational commanders and their staffs should use commonly accepted and understood operational terms; otherwise, communications within the Navy and among other Services become difficult, if not impossible. It does little good to recognise a problem and to formulate an approach to it if the language with which it is discussed is confused or uncertain.

Operational warfare at and from the sea is the only means of orchestrating and tying together naval tactical actions within a larger design that directly contributes to the objectives set by strategy. A tactical concept for the employment of one's maritime forces cannot lead to victory if it is not an integral part of a broader operational concept. Sound sequencing and synchronisation of all military and non-military sources of power are necessary to accomplish strategic or operational objectives in a given maritime theatre through planning and execution of maritime campaigns and major naval operations.

Navy Planning Overview

Navy planning is a comprehensive process that facilitates commanders and staffs at all levels to make informed decisions, solve multifaceted problems and ultimately achieve assigned missions. Navy planning is critical at every level of warfare (strategic, operational and tactical) and across the range of military operations, regardless of the adversary or threat. Military planning can be applied whether conditions permit a lengthy, deliberate process or if the situation forces a compressed timeline. Furthermore, military planning is also applicable to the full range of military operations where the adversary, for planning purposes, may be an environmental condition.

Navy planning is the process by which a commander envisages an end state as well as the arrangement of potential actions in time and space that will allow the realisation of that future. Planning is a way of figuring out how to move from the current state to a more desirable future state. Specifically, planning helps commanders and staffs formulate ways to coordinate the actions of a force, generate a common situational awareness and develop expectations as to how the dynamic interaction of forces will affect the outcome of an operation. Most of all, planning is essential to a commander because it aids in handling the complexities in the operational environment (OE) and the numerous uncertainties inherent in warfare. Planning involves projecting our thoughts forward in time and space to influence events before they occur rather than merely responding to events as they occur.

Operational Art and Design

Operations Planning, provides an in-depth study of the elements of operational design. Operational design is the conception and construction of the framework that underpins a campaign or a major operation plan and its subsequent execution. It forms the basis for military planning and is translated into actions by the use of another key concept, namely operational art.⁹¹

Operational art is defined as the cognitive approach by commanders and staffs-supported by their skill, knowledge, experience, creativity and judgment-to develop strategies, campaigns and operations to organise and employ military forces by integrating ends, ways, means and risk. Operational art requires broad vision and the ability to anticipate. It considers the arrangement and employment of both friendly and adversary forces and other capabilities in time, space and purpose. Moreover, to understand operational art, the commander can think of military planning as having aspects of both science and art.

One other point that must be remembered is that while the process is important, the product or outcome of the planning is even more vital. Military directives, including plans and orders, are the principal output that commanders use to communicate the decisions reached through the planning process. These military directives may be formal, informal, written, or oral, depending on the time available and the complexity of the situation. Operational art serves as a theoretical framework that underpins the operational concept and, if properly understood, facilitates a common understanding throughout the command. This common understanding of the operational art framework allows for subordinate commanders to more clearly identify their role in the operation and to seize a fleeting opportunity as it presents itself.

Navy Planning and Mission Command

Contemporary naval forces encourage commanders to operate independently while following their superior commander's intent; to act when an opportunity presents itself and to feel comfortable in conditions of uncertainty. These are attributes honed by mutual trust

and confidence and years of experience at sea. This description of disciplined initiative is also known as mission command in maritime doctrines. To ensure that planning does not stifle mission command, the superior Navy commander and staff focus more on the purpose of operations rather than the details of how subordinates will execute the tasks and avoid overly restrictive command and control concepts. The commander's intent cannot be a staff product; rather it must be a true embodiment of the commander's vision and the centrepiece of the commander's discussions with subordinate commanders.

Scheme of Manoeuvre

The Scheme of Manoeuvre expands the intent to describe how the commander sees his operation unfolding. It explains where, when and how (in relation to the overall plan, but not with individual prescription) the force is to achieve its purpose, so that subordinates can understand their roles in the plan and the effects that they and others are to realise. A clear intent should minimise the length of the scheme of manoeuvre, where brevity is an important quality.

Main Effort

The Main Effort is what the commander considers to be the activity which is crucial to the success of the mission. He must give it substance by allocating sufficient resources to the unit assigned to it. Illuminating, in the minds of all members of the force, the most important 'thing to be done' ensures that, if the situation becomes more confusing, that task will be remembered and provide a rallying point for effort.

The Navy Planning Process

The specific process for planning naval operations is referred to as the Navy Planning Process (NPP). Through the NPP, a commander can plan for, prepare and execute operations from the operational through the tactical levels of war. Furthermore, the NPP ensures that the employment of forces is linked to objectives and integrates naval operations with the actions of the joint force.

The NPP is the process that assists commanders and their staffs in

analysing the operational environment (OE) and distilling a multitude of planning information in order to provide the commander with a coherent framework for determining the what and why (ends) as well as developing the method for execution (ways), given the forces and resources available (means) and the level of risk to the mission and forces. The NPP is an iterative process and is designed to gain decisions from the commander as how to proceed toward a solution. The process is thorough and helps apply clarity, sound judgment, logic, and professional expertise to identifying problems, developing solutions and communicating directions. The NPP can be time-consuming, but through consistent use commanders and their staffs will become more proficient. Therefore, in the event experienced planners are faced with a short timeline, the NPP can easily be flexed to support crisis action planning.

The NPP establishes procedures to progressively analyse higher headquarters (HHQ) tasking(s); craft a mission statement; develop and analyse Courses of Action (COAs) against projected adversary COAs (in some cases adversaries could be forces of nature or other emerging non-military threats); compare friendly COAs against the commander's criteria and each other; recommend a COA for decision; refine the concept of operation; prepare a plan or operation order (OPORD); and transition the plan or order to subordinates tasked with its execution. The NPP organises these procedures into six steps, shown in figure 11.1, that provide commanders and their staffs a means to organize planning activities, transmit plans to subordinates, and share a critical common understanding of the mission. Interactions among stakeholders during the various planning steps ensure a complete, concurrent, coordinated effort that ensures flexibility, makes efficient use of available time and facilitates continuous information sharing.

The result of the NPP is a military decision that can be translated into a directive such as an operation plan (OPLAN) or OPORD. Frequently, products created during the NPP can and should be used during subsequent planning efforts when planning time is limited. It must be emphasised that while the time available to plan may change, the process does not.



Figure 11.1 – The Navy Planning Process⁹²

Step One: Mission Analysis

Mission analysis drives the NPP. As the first step of the process, its purpose is to produce a mission statement and gain an understanding of the situation. The planning team and staff review and analyse orders, guidance, intelligence and other information in order for the commander, planning team and staff to gain understanding the situation and to produce a ‘Restated Mission Statement’ for the commanders approval.

Step Two: Course of Action Development (COA)

Planners use the mission statement, commander’s intent, and planning

guidance with the commander's governing factors to develop multiple COAs. Then they examine each prospective COA for validity by ensuring suitability, feasibility, acceptability, distinguishability, and completeness with respect to the current and anticipated situation, the mission and the commander's guidance and intent.

Step Three: Course of Action Analysis (Wargaming)

Course of action analysis involves a detailed assessment of each COA as it pertains to the adversary and the OE. Each friendly COA is wargamed against selected adversary COAs. This step assists planners in identifying strengths, weaknesses and associated risks and in assessing shortfalls for each prospective friendly COA. Wargaming also identifies branches and potential sequels that may require additional planning. Short of execution, COA wargaming provides the most reliable basis for understanding and improving each COA. This step also allows the staff to refine its initial estimates based on a more refined understanding of the COA that is gained through the wargame.

Step Four: Course of Action Comparison and Decision

All retained friendly COAs are evaluated against established evaluation criteria and against each other, ultimately leading to a decision by the commander.

Step Five: Plan or Order Development

The staff uses the commander's COA decision, mission statement, commander's intent, and guidance to develop plans or orders that direct subordinate actions. Plans and orders serve as the principal means by which the commander expresses the decision, intent and guidance.

Step Six: Transition

This is the orderly handover of a plan or order to those tasked with execution of the operation. It provides staffs with the situational understanding and rationale for key decisions necessary to ensure that there is a coherent transition from planning to execution. The process, however, does not end here. As depicted in figure 11.1, the process is

continuous. Staffs maintain running estimates that allow for plans and orders refinement. The planning staff continues to examine branches and sequels to plans and orders. Key to this continuous process is the on-going assessment of the operation's progress.

Role of the Commander, Staff and Planning Team in the NPP

The NPP is a dynamic process that requires close cooperation and involvement between the commander, staff and a planning team to ensure that time is used efficiently and that the most effective plan to meet the commander's guidance and intent is developed. The synergy among the commander, staff, and planning team is critical.

Commanders are required to make decisions constantly. Every day, commanders and their staffs resolve simple, routine, or complex problems. To help commanders consider their options when faced with a force employment decision—while applying their knowledge, experience and judgment—Navy staffs use this NPP to provide maritime planners with the procedures requisite to solve problems across the range of military operations.

The Commander's Role in the Navy Planning Process

The NPP emphasises the commander's central role as the decision maker. To help the commander consider options when faced with a force employment decision, the commander and staff use the NPP. The commander provides the necessary focus and guidance to the planning team and staff. Additionally, the commander's relationships with other commanders and the ability to gain insights and expectations from adjacent and HHQ commanders contribute to the effectiveness of the process.

The commander's participation in the NPP lends credibility to the process and keeps other less essential requirements from distracting the staff and planning team. The commander's role becomes more critical when requirements compete with one another or when time allowed for planning is shortened. The commander can help in gaining efficiencies in the process by making himself more available to staff and planners and

by increasing frequency of guidance, direction, and decision making. This is done through sound, precise guidance and up-front decisions on COAs, wargaming and with decreased formality of the process.

Planning Team and Staff's Role in the Navy Planning Process

The staff must be properly organised to support the NPP. However, staffs are functional organisations and often support a command's efforts across multiple time horizons: far, mid, and near and through their respective staff directorates; future plans, future operations (FOPs), and current operations. Therefore, the planning team(s) should draw personnel from the various staff codes and directorates. This cross-sectional approach provides a holistic and dedicated effort to the NPP. Planning initiation can come from various sources depending on the level of command.

The Plan, Brief, Execute, Debrief Cycle

While the NPP provides a framework for operational planning, many naval tactical organisations practice the Plan, Brief, Execute, Debrief (PBED) cycle. This is to remain ready and focused on continuously improving mission performance in support of operational planning.

Joint Intelligence Preparation of the Operational Environment (JIPOE)

JIPOE is a product of Intelligence Staff Estimate. Most important portions of the estimate enemy's objectives, respective (COG) and enemy's most likely and dangerous COA. All planners need a basic familiarity with the IPOE process in order to become critical consumers of the products produced by the intelligence community. Although the specifics of the IPOE process vary depending on the situation and force involved, there is general agreement on the following four major steps:

- Define the operational environment (OE).
- Describe the impact of the operational environment.
- Evaluate the adversary.
- Determine adversary courses of action (COAs).

Mission Analysis

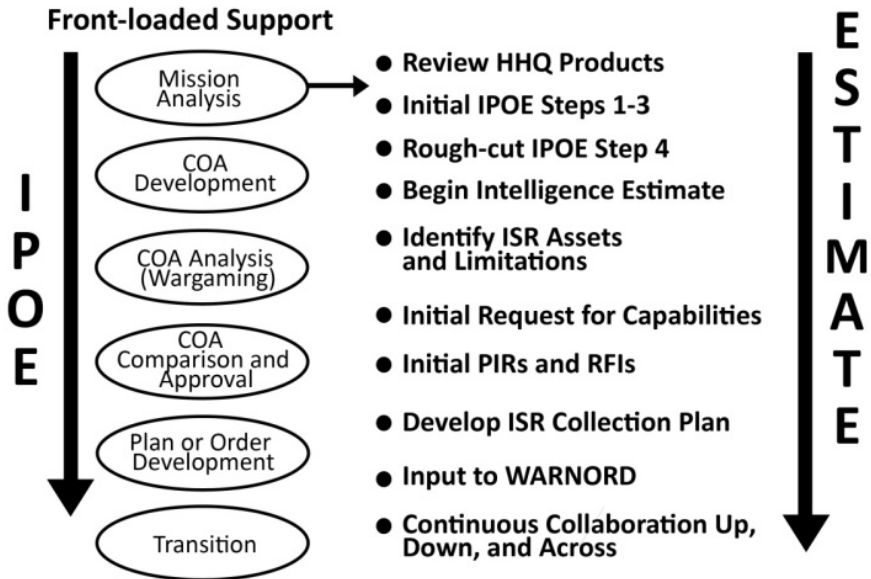


Figure 11.2 - Intelligence Support to Mission Analysis⁹³

Centre of Gravity Analysis

Centre of Gravity (COG) is the source of power that provides moral or physical strength, freedom of action, or will to act. The importance of the COG concept in the NPP is that it is directly linked to courses of action development. While COGs are critical strengths that actually accomplish objectives at specific levels of war, courses of action should be focused on defeating the adversary COG(s) and protecting the friendly COG(s) that have been identified.

While primarily a strategic and operational level concern, the identification of both the adversary and friendly COGs is an essential element of any plan. If the staff gets this part wrong, the operation will at best be inefficient and, at worst, end in failure.

Identify the Objective(s)

Identifying the objective is a critical first step. Before one can determine a COG, the objective(s) shall be identified. If this portion of the analysis is flawed, then the error infects the remainder of the process. The planner should first determine the ultimate (strategic or operational) objectives and then the intermediate (operational or major tactical) objectives. The operational objectives should show a direct relationship to the strategic objectives.

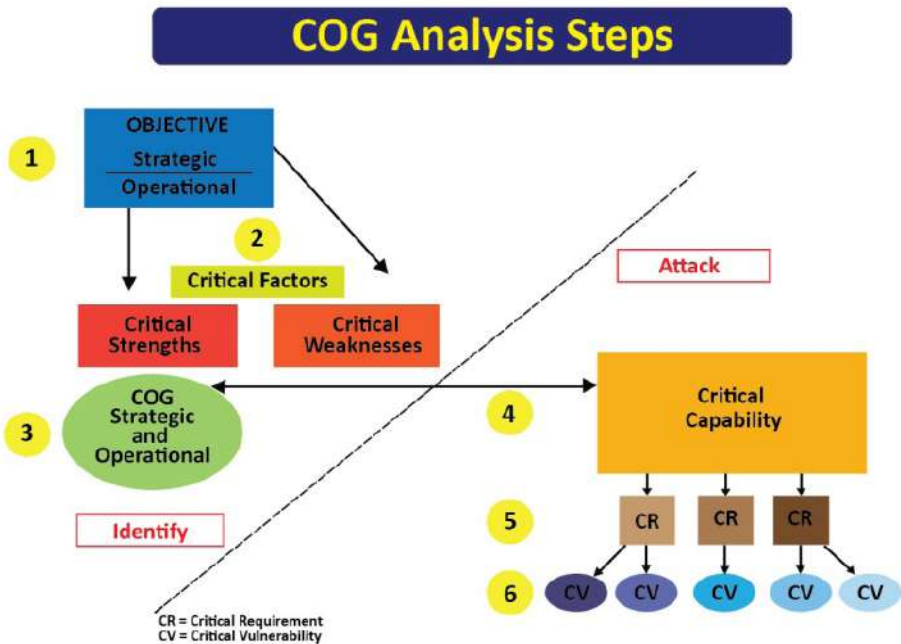


Figure 11.3 – Centre of Gravity Analysis

Identify Critical Factors

Critical Factors are those attributes considered crucial for the accomplishment of the objective. These factors that in effect describe the environment (in relationship to the objective) should be identified and classified as either sufficient (critical strength) or insufficient (critical weakness). Critical factors are a cumulative term for critical strengths

and critical weaknesses of a military or non-military source of power; they can be quantifiable (tangible) or unquantifiable (intangible); critical factors are present at each level of war; they require constant attention because they are relative and subject to changes resulting from the actions of one's forces or of the adversary's actions. It is important while conducting the analysis for this step that planners maintain a sharp eye on the objectives identified in the first step—each level of war has critical factors that are unique to that level.

Identify Critical Capabilities

Critical Capability is considered a crucial enabler for a COG to function as such and is essential to the accomplishment of the specified or assumed objective(s).

Identify Critical Requirements

Once a COG's critical capabilities are identified, the next step is for the staff to identify those essential conditions, resources, and means for a critical capability to be fully operational. These are the critical requirements that support each of the critical capabilities.

Identify Critical Vulnerabilities

Critical Vulnerability is an aspect of a critical requirement that is deficient or vulnerable to direct or indirect attack that will create decisive or significant effects.

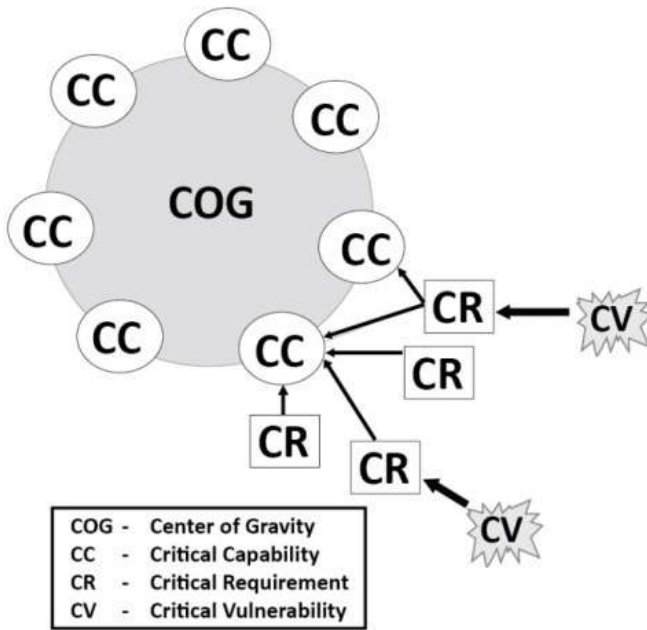


Figure 11.4 – COG, CC, CR and CV⁹⁴

Identify Decisive Points

Identification of decisive points remains an important feature of the COG analysis and its subsequent defeat or neutralisation. Decisive Points (DPs) are defined as geographic place, specific key event, critical factor, or function that, when acted upon, allows commanders to gain a marked advantage over an adversary or contribute materially to achieving success.

Mission Analysis

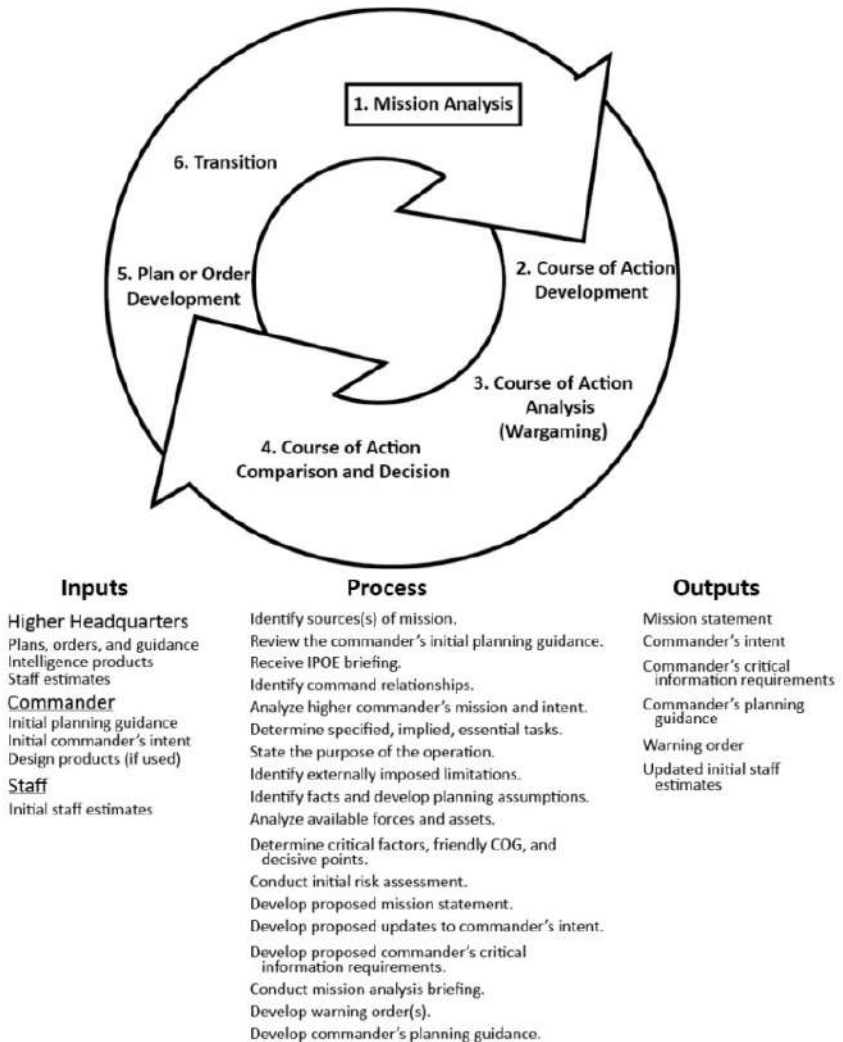


Figure 11.5 – Mission Analysis⁹⁵

The Commander's Role in Mission Analysis

The commander's role in guiding the planning team during this first step of the planning process cannot be overstated. While the commander's close involvement is imperative throughout the NPP to ensure the concept unfolds as visualised, the commander's early engagement shapes all subsequent staff planning actions. The commander is instrumental in framing the nature of the operation and providing the planning staff initial guidance. If planning is straightforward, although potentially complex and something the commander and staff have encountered before, the commander's initial planning guidance might be easily crafted. Regardless of whether the situation has evolved over time or instantaneously, the commander has responsibility to guide the planning team.

Commander's Initial Planning Guidance

The commander not only receives guidance and products from higher authority but is also responsible for developing initial planning guidance and initial commander's intent to guide and focus planning. In order to do so, the commander assesses the situation based on HHQ direction and the view of the OE, understanding of the problem and operational approach. The commander also must consider the capabilities of the forces assigned/attached of their combat readiness, material support, unit morale, and other factors to accomplish the mission. This mental exercise can consist simply of the commander's thoughts or can be a detailed analytical effort. Regardless, the commander develops a vision of the OE then; it helps to produce guidance to the planning team.

Once the commander's assessment is completed, the commander should issue initial planning guidance before the staff begins mission analysis. Ideally, the commander personally issues this guidance to the staff, planning team, and subordinate commanders and seeks immediate feedback to ensure that the vision of the operational environment and guidance is understood. Depending on the time available, the commander may provide either general or specific guidance for the planning team, staff, and subordinate commanders to consider. It is critical to establish

a realistic planning timeline and to adhere to it. Also consider that time is needed for subordinate-level planning (one third-two third rule). Generally, the commander's initial planning guidance should include an initial commander's intent, a general assessment of the OE, a general assessment of the problem, any initial ideas regarding Commander's Critical Information Requirement (CCIR), guidance addressing specific operational functions, specific force employment considerations and any planning limitations (Constraints and Restraints).

Review Commander's Initial Planning Guidance

The commander's initial planning guidance shapes the plan's development. Since the commander's perspective permeates all aspects of the NPP, it is important that the planning team, as a group, reviews the commander's initial planning guidance to ensure a common understanding and to resolve possible misinterpretations or identify points that may require clarification. If the commander used design methodologies to aid in the formulation of initial planning guidance, those design products should also be reviewed at this time.

Receive Intelligence Preparation of the Operational Environment Briefing

HHQ staff estimates often facilitate the development of the subordinate staff estimates that are critical to the NPP. One of the products of the intelligence staff estimate is the IPOE. At this point in the NPP, the IPOE briefing provides the planning team with a review of the OE and the adversary and offers the planning team a means to focus on many of the factors that will influence the remainder of the NPP. During crisis action planning, the IPOE briefing may be an initial product, with the expectation that the Operational Planning Team (OPT) will provide critical feedback for further development by the intelligence staff.

Analyse the Higher Commander's Mission and Intent

The higher commander's mission statement, normally found in the HHQ's directive and the capabilities and limitations of the Navy or maritime component force must be studied. The commander should

draw broad conclusions as to the character of the impending military action. However, the commander should not make assumptions about issues not addressed in the HHQ directive. If it is unclear, ambiguous or confusing, the commander should seek clarification.

Determine Specified, Implied, and Essential Tasks

Every mission consists of two elements: the tasks to be accomplished by one's own forces and the purpose of those tasks. If an operation has multiple tasks, then the priority of each task should be clearly stated. All levels of command develop mission statements (although lower tactical units may only have tasks rather than mission statements). Using information provided by HHQ and the commander's initial planning guidance, the planning team identifies specified and derive implied tasks. From these two groups of tasks, the planning team will determine the essential tasks.

Specified Tasks

Specified tasks are specifically assigned to a unit by HHQ. They are derived primarily from the execution paragraphs of the directive but may be found elsewhere such as in the mission statement, coordinating instructions, or annexes.

Implied Tasks

Implied tasks are not specifically stated in the HHQ order but must be performed in order to accomplish specified tasks. Implied tasks emerge from analysis of the order, the commander's guidance, and after consideration of the adversary's potential actions. Routine, inherent, or SOP tasks are not included in the list of tasks.

Essential Tasks

Those tasks that most contribute to mission success are deemed essential and they become the central focus for operations planning. Essential tasks are those that define mission success and apply to the force as a whole. Essential tasks can come from either specified or implied tasks. If a task must be successfully completed for the commander to accomplish

an objective, it is an essential task. Only essential tasks are included in the proposed mission statement.

Determine Critical Factors, Friendly Centre of Gravity and Decisive Points

The next step in the mission analysis process requires a progressive analysis of three key components: critical factors, friendly COG and Decisive Points (DPs). It is important to remember that each of these elements is applicable at the various levels of war; strategic, operational and tactical. It is also important for the commander to be cognizant of the strategic and tactical aspects of the critical factors and COGs but focus should be mainly on the level of war for which the command is planning.

Determination of critical factors leads to finding the COGs, which in turn leads to assessing DPs. This analysis shall be done for adversary and friendly forces alike. The intelligence staff identifies adversary critical strengths and weaknesses and the adversary COG(s) as part of the IPOE process. A complete intelligence staff estimate should contain critical factors, COGs and DPs for the adversary. In many cases the adversary COG analysis will be complete before the mission analysis process begins. If not, it must be completed before the same process is done for friendly forces.

Although the intelligence section completes the adversary COG analysis process, it should be the operations staff members, operational planning team members and subordinate commanders who assist the commander in identifying friendly critical factors and COGs.

Develop Proposed Updates to Commander's Intent

A commander's intent is broader than the mission statement. It is a concise, free-form expression of the purpose of the force's activities, the desired results and how actions should progress toward that end. It is a clear and succinct vision of how to conduct the action. It is essential to focus on planning as it enables the commander to indirectly control events during the execution of the operation.

Develop Commander's Critical Information Requirements (CCIRs)

The planning team should then generate a list of proposed initial CCIRs for the commander's approval. It is imperative that the planning team pays close attention to the content and wording of this list. CCIRs are constantly evaluated and updated for their relevance and applicability.

Warning Orders

Once the naval commander approves or modifies the results of mission analysis, the planning team may draft and issue a Warning Order (WARNORD) to subordinate units. The WARNORD should include the approved mission statement, the commander's intent, the commander's planning guidance and any other information that will assist subordinates unit with their planning. A WARNORD is a preliminary notice of an order or action that is to follow. It is also a planning directive that initiates the development and evaluation of military COAs by a supported commander and requests that the supported commander submit a commander's estimate. Further it describes the situation, allocates forces and resources, establishes command relationships, provides other initial planning guidance and initiate subordinate unit mission planning.

Course of Action Development

A COA is a broadly stated potential solution that results in the accomplishment of the mission identified in mission analysis. Prior to COA development and as a result of mission analysis, the commander, staff and planning team should have an approved mission statement and an increased appreciation for the overall situation. Additionally, they will have commander's intent, initial CCIRs, initial risk assessment and initial planning guidance.

After receiving guidance, the planning team develops COAs for analysis and comparison. The commander, through the planning team lead, should involve the entire planning team in COA development. The commander's guidance and intent focus the planning team's creativity to produce a comprehensive, flexible plan within the time constraints. When possible, the commander's direct participation helps the staff

gain quick, accurate answers to questions that arise during the process.

Course of Action Analysis (Wargaming)

Course of action analysis is the process of closely examining potential COAs to reveal details that will enable the commander and staff to identify COAs that are valid. The commander and staff analyse each COA separately according to the commander's guidance. While time-consuming, COA analysis should ensure COAs are valid.

Wargaming stimulates thought about the operation so the staff can obtain ideas and insights that otherwise might not have occurred. This process highlights tasks that appear to be particularly important to the operation and provides a degree of familiarity with operational-level possibilities that may be difficult to achieve. An objective, comprehensive analysis of COAs is difficult even without time constraints. Based upon time available, the commander should war game each COA against the most likely and the most dangerous adversarial COAs (or most difficult objectives in noncombat operations) identified through the IPOE process.

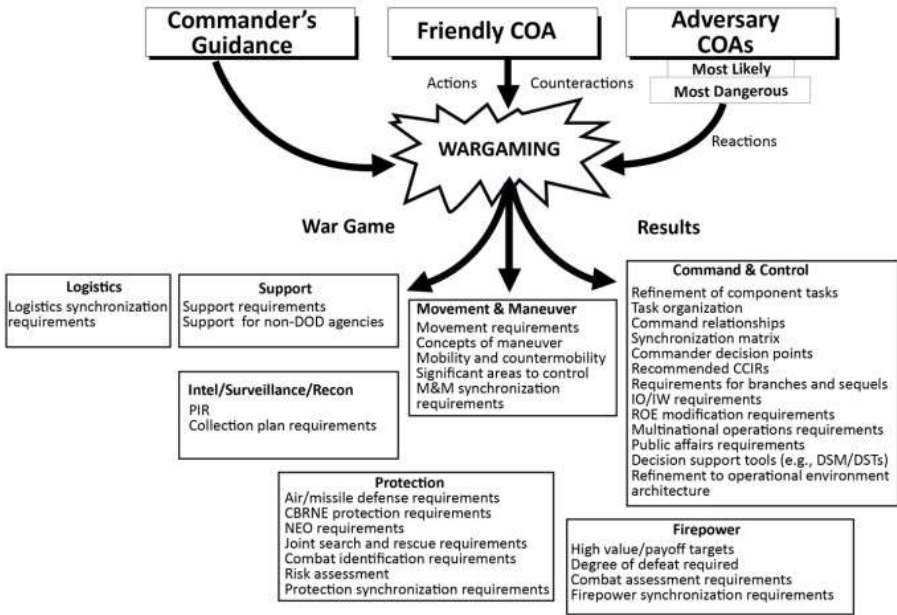


Figure 11.6 – Course of Action Analysis Summary⁹⁶

Course of Action Comparison and Decision

During COA comparison and decision the commander evaluates each friendly COA against established evaluation criteria, compares them with each other and selects the COA the commander believes will best accomplish the mission. After the commander’s decision, the decision-making portion of the NPP is completed.

The selected COA is then expanded and translated into a clear, concise concept of operations (CONOPS) that describes in broad terms how and when the force and its subordinate tactical organisations will accomplish assigned tasks.

Plan or Order Development

The purpose of the plan or order development of the NPP is to translate the commander's decisions from previous steps into oral, written, or graphic communication sufficient to guide implementation and promote initiative by subordinates.

Before initiating the plan or order development step of the NPP, it is necessary to distinguish among plans, orders and other operational directives. The staff will develop a plan if conducting deliberate planning or an order when conducting crisis action planning. Plans developed during deliberate planning can be used during crisis action planning to develop an order for execution.

Transition

The purpose of transition is to ensure a successful shift from planning to execution. There are two types of transition within the context of the NPP; external and internal. The purpose of external transition is to ensure that units tasked with execution fully comprehend the order to be executed, especially the commander's intent and the CONOPS. The main purpose of internal transition is to ensure that those charged with monitoring and directing execution fully comprehend the order to be executed.

CHAPTER 12

FUTURE NAVY

The military power has been identified as one of the key instruments of national power in addition to diplomatic, information and economic powers. Sri Lanka being an Island nation, maritime power takes leading role in her military power for attainment of national interests through the elements of national power. It will require in depth analysis on the elements of national power within, in order to identify the strengths, thus for selecting credible strategies. The importance of the Indian Ocean and the strategic location of Sri Lanka is a critical factor for enabling maritime strategies. The potential of Navy to display diplomacy and to build effective and healthy relationships with other nations considers as a vital factor. The volatility, uncertainties, complexities and ambiguities persist in the existing environment is a critical area of concern in the maritime domain. The importance of having common working strategy for the future challenges, proactive approach and interoperability with joint, multinational, multi- agency forces will be critically important.

Globalisation has inextricably linked the security and the prosperity of Sri Lanka to the wider global community. Sri Lanka will necessarily be a partner nation to the rest of the world for stability and security. It will require continuous engagement with the regional countries. Especially in the IOR, and to execute the classic role for which naval forces are uniquely suited, in order to protect and sustain the global system of independent network of trade, finance, information, law, and governance. While considering the own strength and experience, understanding the capabilities and capacities of major power in terms of their power projection and forward deployment will be a significant factor in diplomatic collaboration. It will be challenging and requires careful planning for implementing diplomatic collaboration while preserving sovereignty and independence of the country.

Threat perception will enumerate various existing security concerns that

merit analysis to make an assessment for the future. In modern world the security and the environment of the sea has become more complex and ambiguous. Terrorism has significantly increased the nature of the non-military, transactional and asymmetric threats in the maritime domain. Unlike traditional military scenarios in which adversaries and theatres of action are clearly defined, these non-military, asymmetric threats often demand more than purely military undertakings to be defeated. Maritime domain presents not only a medium by which threats can move, but offers a broad array of potential targets. Sri Lanka, strategically located in the IOR, is also prone to these emerging threats.

The main objective of the defence planning is force preparedness to safeguard the national security interests. Defence planners must therefore, have a thorough knowledge and understanding of the following:

- National interests, security and power.
- Environmental scan and threat analysis.
- Geopolitics and geo-strategy.
- Economy and budgeting.
- Technology management.
- Forecasting techniques.
- Modernisation of the force structure and develop to counter anticipated traditional and non-traditional threats.
- National security policy, strategy and doctrines.

Understanding Global Imperatives

The development of the future operational success of developed countries will rely increasingly on the use of space and cyberspace. The sufficient control of the sea, air, space and cyberspace will continue to remain vital imperative for countries. Thus, the requirement for forward presence and overseas access will be a key factor for their operational planning. The sensitivities to foreign military presence have steadily been increasing in the global environment and even close allies of their own may be hesitant to grant access for a variety of reasons. Therefore,

this diminishing access will complicate the maintenance of their forward presence, placing a premium on naval forces and their ability to respond quickly to developments around the world as well as their advantages to operate at sea and in the air, space and cyberspace. These global actors will need the assurance of access to ports and coastal waters for their future operations and will engage in peacetime operations with strategically important countries. These actors will seek global partnership for accomplishing their plans as it cannot be met unilaterally. The Maritime Strategy of Sri Lanka should sensibly encompass such partnership for cohesive development while maintaining sovereignty of the country.

The future maritime environment has the potential to produce more challenges which SLN alone will not be able to respond effectively. This requires shaping of developments of issues proactively so that they do not culminate into an unmanageable level. The establishment of cooperative maritime security arrangements in the Indian Ocean will share the burden of maintaining security and stability.

For the developed countries, the complexity of the environment and the inherent applicability of naval capabilities indicate that the Navy must be larger in order to continue to provide timely options for national leaders in areas that matter. Furthermore, platforms must be accompanied by adequate stocks of spare parts, maintenance programmes and sufficient numbers of trained people to stay balanced and capable.

Naval diplomacy which applies to a wide range of peacetime naval activities whose purpose is to influence the behaviour of another nation will play a predominant role in the future maritime context. In addition, continuation of issues such as refugees, human rights, transnational crime and terrorism, drugs and the political environments, globalisation, as well as the economics, intellectual property and technology concerns require new forms of diplomacy. This, in turn, has changed diplomatic techniques and practices. These emerging problems are transnational and have its impact on every country. In these circumstances, the central task of diplomacy is not only the management of order, but also the management of change and the maintenance by continual activity.

The scope of diplomacy has assumed formidable dimensions and apart from political, cultural, financial and commercial it involves military as well. Thus the naval diplomacy to be played by the SLN will have much significance.

Force and Force Structure

The requirement of force and force structure planning according to the perceived threat will enable to implement the strategies, thus reaching the end result. While assessing the capacity and capabilities of force and force structure of SLN it is required to analyse whether it suits for the perceived threat. The force and force structure include both men, women and material and it is very important to analyse how well SLN is structured her force to implement the strategies to meet the end results. Therefore, SLN will endeavour to be more inclusive in recruitment and operational employment of personnel in line with the operational and administrative needs. The key focus will be to recruit, train and equip the right person for the right task. In this context it is imperative to measure the military effectiveness in order to support the grand strategy of the country and to have well planned and productive defence budget for Navy.

Since future holds quite a promise for Sri Lanka, the Navy needs to expand to keep pace with the developments. It is a fact that SLN fleet with small ships and boats is quite a punch as far as brown and green water operations are concerned but the capability to operate in blue waters over extended ranges is a future concern. The number of ships in the naval fleet determines where we can be and being there is a key to naval power. Also mere numbers are not enough and it must consider the capability and capacity of them to create an effect. How much to expand using current operating concepts, platforms and modestly incorporating technological upgrades should be a key consideration. Assessing of own capabilities and capacity in terms of force and force structure, knowledge and professional abilities, required to be done accurately to avoid both over and under estimation. The planning could be done accordingly to build required capabilities and capacity for the SLN to perform her expected role in the maritime domain. Greater

connectivity and capability will enable new ways to combine ships and aircraft that may have the potential for increased capability and flexibility. Over the longer term, the range of possibilities can expand to more fully integrate space, surface, air, undersea and cyber and electronic warfare capabilities. Therefore, it should be analysed and derive the category of force projection Navy, that we need to focus for future.

It is also a fact that over a period of time there can be evolution of various naval components for specific roles. However, it needs careful analysis to avoid overlapping or the repetition of similar role within different components. The effective utilisation of resources both men and material is utmost important in the force structure planning. Therefore, disintegration and integration may require, facilitating re-structuring the force for effective and efficient role.

The future architecture and designs of naval fleet needed to account for the new competitive dynamics of the information age. Thus, future naval forces should shift from independent operations to fleet battle networks consisting of integrated sensors with network centric operations for better command and control. To take best advantage of new technologies, we need to build versatility, capacity and agility into our platforms and systems. The Navy should also embrace a future that will ensure joint operations with sister services.

Human resource management will be a challenging task which needs to be carefully addressed. Structures should be planned to function the system effectively, whilst avoiding disparities/conflicts to maintain command and control. Human resource policies in the Navy must be tailored to project the service in its true colours. It also requires addressing the empowerment and aspirations of our personnel whilst also developing professionalism and leadership. It must look into further develop, healthy organisation culture in the Navy for cohesive environment protecting naval ethos and values.

Naval personnel will remain the most important factor as it is they who will enable us to adapt to this technologically enabled fast changing world. They are and will remain our most potent and flexible asset.

Demographics, technology and social change mean that the competition for talented recruits will become increasingly passionate. SLN will face great challenges in recruiting and retaining the men and women of quality that will be needed to achieve the desired objectives in the backdrop of lucrative opportunities outside as the country's economy globalises further. This will demand strong leadership at all levels and responsive management linked to flexible career structures underpinned by appropriate conditions of service, remuneration and care for families. Meeting these challenges and becoming the employer of choice, will require a process of continual adaptation and improvement that balances the needs of people against the demands of maritime operations. This will be a vibrant element of the SLN's plans for the future.

Future SLN Fleet

Considering the SLN's 2025 Maritime Strategy, SLN should pay attention to following main key aspects prior developing the 2025 naval fleet:

- **Influence events at a distance** – SLN needs to be capable of remove or at least mitigate the direct threat of danger to the continental homeland and the immediate offshore areas.
- **Freedom of the seas** – SLN needs to nurture a stable environment at sea sensibly managed through the cooperative efforts of ocean users.
- **Joint enabler** – SLN needs to be capable of getting the Sri Lanka Army to the required locations and sustaining it with logistical and fire support. The ability to project superior military power by sea is an essential component of modern diplomacy.
- **Wide range of operations** – A state's global interests in the maritime environment will continue to be served best by remaining fully capable of conducting sea control and sea denial operations in home waters, exploiting a broad range of crisis management and naval diplomacy opportunities, and cooperating in power projection operations on a limited scale.
- **Versatile and combat capable** – A broad base of capabilities is the surest guarantee of a flexible response, of independence of action in a crisis, and of managing the response to that crisis.

- **Alliances/ Coalitions** – The necessary weight of the forces can only be obtained by working in combination with other states.
- **Interoperability** - This is the corollary to collective action, in that Navies must be able to cooperate both jointly with their other national services and in combination with their allies.

Network Enable Capability

The overall strategy of the maritime surveillance is to detect, identify and classify all the players in maritime domain within Sri Lankan water. Integrating land and sea assets will enhance the overall MDA thus to monitor all the activities at sea. It is required to develop a common operating picture from the data extracted from the Network Centric Sensors deployed around the island with a sophisticated software application and fusion for anomaly detection.

The roots of maritime domain are expanded to multi domain where cyber space has also come into the equation of the security architecture and become critically important. Developing of intelligence through the collection of data from various sources and fusing is very much essential in order to fight the unlawful maritime activities. It needs to have a good knowledge of their kind, of their volume and consequences, of their location, of the criminals' habits and modes of action, in order to:

- Identify the national priorities.
- Evaluate the needs of capacities to counter the threats.
- Define the relevant procedures for implementation.
- Plan surveillance and readiness of action capacities.
- Detect the case of interest and intervene when necessary.

The trust and confidence established through good maritime order will also compliment to regulate exclusive commercial interests like port operations, industrial development, ship building, fishing, tourism and leisure related industries. Significant maritime traffic generates a very sensitive risk of pollution which could be disastrous for natural resources, thus affect the marine environment and also for the tourism. Therefore, it is important to monitor all the seafarers who are mishandling or non-

compliance of international norms in navigation.

The Information and Communication Technology (ICT) is a fastest developing technology and in this digital age the world is now considered as a global village. In this context SLN should positively seek for a joint monitoring system, information sharing system and cross-border collaboration and quick response system. This will help timely announcement of significant events, disaster weather warning message, oceanic pollution message, piracy and maritime distress, basic meteorological information and emergency rescue approach for oceanic activities.

Maritime Intelligence

After the end of protracted conflict in Sri Lanka in year 2009, new maritime threats have emerged which are very complex and interwoven and continue to evolve in various forms affecting the sustainable development of the country. It is observed many incidents mainly; drug trafficking, human smuggling, maritime pollution and IUU fishing in the Sri Lankan waters. In most of such unlawful acts, perpetrators have used asymmetric tactics to achieve their objectives. Therefore, it demands deployment of more assets at sea and the use of advance technology for real time information gathering in the maritime domain in order to have effective maritime surveillance. Also these gathered information need fusion in logical sequence to convert them for maritime intelligence, where vulnerabilities can be identified and critical issues can be addressed according to the priority and magnitude.

The information may gather through collaboration with various sources mainly from naval ships, Coast Guard, coastal surveillance sensors, structured and unstructured information through various other sources such as local Intelligence Services, Department of Fisheries and Aquatic Resources, open source web applications, human intelligence and foreign intelligence. SLN is required to enhance the capability to integrate those information and fusion to produce intelligence to facilitate decision makers to take prompt action. Therefore, establishment of a Maritime Information Fusion System with modern technology will

facilitate decision makers to make a learnt decision from huge volume of input received from various sources that gather maritime information. Further, SLN is required to strengthen the endeavour by collaborating and developing partnerships with other maritime fusion centres with in the IOR.

Maritime Aerial Surveillance

Securing the SLOC from various threats possess a challenge, mainly non-traditional threats; piracy, terrorism, drug trafficking, human smuggling, maritime pollution and IUU fishing which continue to develop the tension in the Indian Ocean including sea area belongs to Sri Lanka. The significant maritime traffic generates a serious risk of pollution and their consequences for the maritime environment will be huge. The form of pollutants discharged into the ocean by ships adversely affects the fish stock and the habitability of the coast, thus could result in significant damage to the maritime environment. The potential economic impact of these factors will be of a grave concern.

The incidents taken place in particular area may spread over time to other areas as well. The surveillance is required to plan not limiting to detection, but classification and identification of illegal actors. The aerial platforms will provide advantage to have effective surveillance without the reach of naval ships and craft. The present concept and methodology in place should be evaluated for its performance and effectiveness, thus it should incorporate the aerial platforms to enhance the surveillance. Therefore, it demands the new methods to re-strengthen the maritime surveillance system with state of the art technology.

The aerial platforms are very much essential to overcome these limitations in the maritime surveillance. Maritime enforcement can be enhanced by establishing aerial surveillance together with Information Fusion Centre for fusing and producing intelligence. The capabilities of the existing platforms for the operation of aerial surveillance are an important factor. It is required to consider the aerial surveillance capabilities of sister forces, analysis on the capacity and limitations of the existing platforms in terms of quantity, endurance, sensor capabilities

and limitations, operational environmental restrictions and deployment limitations. This will provide naval planners for how best it can be used for collaborative approach and develop Concept of Operation (CONOP).

Consideration for the use of modern assets and advance technology for aerial surveillance is an important factor. The modern sensors such as Electro Optical and Infra-red cameras, Side-looking airborne radar, search radar, AIS transponder, Direction Finder, hyper spectral scanners, microwave radio meters, VMS and new communication equipment with data links will facilitate maritime surveillance in many aspects and provide important information for the protection of all kinds of threats at sea. Thus, it is important to know the capabilities of these platforms in order to analyse and decide what aspects to be looked into when considering unique requirement.

In the modern concept, use of UAV is a smart machine use for aerial reconnaissance. This reduces the huge cost involvement for the surveillance operations and also increases the flexibility of operations. At the beginning it is important to have a conceptual transformation in order to instil the positive approach and subsequently establish a systematic way of developing and gradually reaching the desired level for aerial surveillance.

Surveillance activities based on land sensors are limited by their coverage due to line of sight conditions and equipment capability. The airborne AIS systems are introduced to cater to this peculiar limitation and a Maritime Patrol Aircraft fitted with an airborne AIS and AIS software application can effectively carryout a surveillance mission covering a large sea area of interest.

The importance of aerial surveillance in maritime enforcement need to be identified and it is required to fill the gap with the use of appropriate mechanism with the balance and progressive development. Therefore, a gradual process with laid down policies and clear road map for establishing aerial surveillance as a powerful means of gathering vital information will strengthen the maritime enforcement.

Naval Aviation

When analysing the potential of the present naval assets against the ocean mass that has been vested to Sri Lanka, the requirement of positioning the Navy in a much stronger position is essential. The vastness of the ocean space presents challenges to even the most advanced and developed navies in the world. No Navy has the capability and capacity to place surveillance on each and every square mile on the ocean space.

It is a well-known fact that effective maritime surveillance and sea control with the assistance of foreign nations have immeasurably contributed to the eradication of terrorism from this island which was almost dragged for three decades. There are enough evidence from modern history of this island nation to prove the necessity of fleet air arm for SLN and modernized threat scenario having varying dimensions; mainly drug trafficking, arms and human smuggling, IUU fishing, pollution prevention, and protection of commercial shipping lanes have enhanced such necessity.

Therefore, it is timely that SLN recommence the endeavour of forming the Naval Air Arm. At present SLN possesses five helicopter landing platforms and few more to include in the inventory with the advancement of SLN Maritime Strategy 2025. Training is already underway with the assistance of SLAF. In addition, steps have been taken to acquire UAVs to commence limited air surveillances. The greater active involvement of the SLAF, utilizing its core competencies would provide to augment the role already played by the SLN and the SLCG. To meet this need we need to identify a sound mechanism, specifics, build capacity and share knowledge and participate in a wider spectrum of activities. Thus, the way forward is to utilise available OPV/AOPV helicopter platforms which are already equipped with other related infrastructure with helicopters as a short term measure to expand the present surveillance and as a long term measure by establishing a naval air arm and augment surveillance with fixed wing maritime patrol aircraft for a more effective and a long range maritime surveillance.

Defence Budget and Expenditure

The planning and expenditure of defence budget is the driving component in all activities done by the Navy. Meticulous planning has to be done in consideration all factors in the recurrent and capital nature. In terms of existing force structure and future development expected, it should be planned, allocated and carry out expenditure in order to achieve the desired targets. The performance of the planned and allocated military budget should be measured in terms of productivity. Therefore, accurate budget planning is essential to bring out the clear vision that where the Navy can reach at particular time of the future.

Strategic Planning and Management Process

Strategy formulations and implementation is a function of management at the conceptual level. It is the determination and evaluation of alternatives available to the Navy and the selection of the alternative to be pursued. It is concerned with the relationship between ends and means, power and objectives, capabilities and intentions, forecasting and foresight. It is a means to achieve the Navy's organisation vision.

The clarity in the vision of the future environment will determine the degree of effectiveness and efficiency that organisation can aspire for and it is the job of the leadership at the apex level to provide that vision. The four important aspects with respect to success of the organisation are the effective management of people, structure, task and technology. The strategic planning must encompass macro environmental factors for the visionary future planning. The interactive organisations do not accept the future as inevitable. They study trends and forecast future and then make strategic interventions to shape future environment as most suited to them. SLN's strategic planning process must include both operational and administrative function. The vital aspect of envisioning Navy's long term desired 'end state', reviewing goals, setting realistic objectives, aligning with dynamically changing environment is necessary.

The strategic management has relatively long term focus in comparison to the operational management. The scope of the management of national security is vast, thus needs to be managed most intricately and

effectively to ensure existence and growth of the nation in a dynamically changing regional and global environments to ensure wellbeing of citizens, fulfilment of their aspirations, and ultimate realization of long term national goals and vision. Critical analysis must be done to find out; where is the organisation at present? Where is it headed without any changes? What need to be done to achieve goals?

Future Trends

The focus on developing indigenous platforms, weapons, sensors and systems is vital in order for modernisation of the Navy. In this context research and development for new designs which are cost effective and productive in application will drive the future developments and achievements. It is required the transformation from a buyer's navy to a builder's navy. However, it has to be carefully planned to avoid delays and cost overruns.

In this context SLN plans to develop an operational concept to include unmanned and autonomous technology into fleet operations both ashore and at sea in the coming years. The two technological areas along with artificial intelligence (AI) will play a major role in maritime security in the coming years. The integrated system will be a force multiplier thereby enhancing MDA capabilities allowing effective networked warfighting, provide vital round the clock capabilities for HADR, SAR, pollution monitoring, and control and law enforcement at sea.

The building up of multi-dimensional capabilities will enhance the maritime fighting power. In this context the naval aviation will facilitate command and control by observation, orientation, deciding and to act against adversaries. Unmanned systems will also be an integral part of the future fleet. The advantages such systems offer are even greater when they incorporate autonomy and machine learning. Further, these platforms required to be affordable enough to buy them in large numbers, or build them and networked in order to expand the command and control in key areas.

The Road Map Towards - SLN 2025

In the road map towards SLN Maritime Strategy 2025, the following distinctive characteristics will define what the SLN will be:

- **Professionalism** – built on a foundation of professional men with the highest standards and values who are trained and educated to maintain the fighting edge; able to operate in and from the sea with a strong team ethos, cohesion and identity.
- **Operational Versatility** – a Navy capable of contributing to all operations at sea, on land, in the air and across the seams of those environments.
- **Interoperability** – SLN needs to be an interoperable Navy, in order to operate with sister services, allies, regional/ international partners and other government agencies.
- **Deployable** – SLN has to focus on the regional deployment as well as take part in multinational deployment opportunities.
- **Information Focused** – SLN need to embrace on the emerging information and surveillance technologies and improve expertise at using information as a tool and a weapon.
- **Agility** – SLN need to continue to learn, exploit current operational knowledge to develop future requirements and thereby to react swiftly to the changing demands of an uncertain world.
- **The Right Expansion** – SLN needs to expand in a timely and a sufficient manner to fulfil its commitments and thereby be able to conduct the broad range of maritime defence and security tasking mandated by government policy.
- **Asymmetric Warfare (AW)** – SLN remains as one of the leading Navies in the world which has pioneered tactics and strategies of AW. SLN need to look through a different path in addressing the present and future expected maritime challenges through innovativeness in AW.
- **Decisive Leaders** – Develop and sustain a leadership climate that encourages, initiative, decisiveness and trust while improving SLN's future leaders' abilities to lead and manage effectively.

- **Strategic Partnerships:** SLN needs to focus on establishing clear strategic, external partnerships or better position SLN to achieve broader maritime goals through national objectives.

Balancing Present and Future

One continuing challenge for SLN is the requirement to balance the allocation of resources between current capability and future development. Considering the rapid advances in information systems and the computer processor power, the development and acquisition of new technology for maritime operations is relatively protracted. Especially, when compared with the speed at which the strategic environment is changing.

It is very hard to have a simple division between the existing force, the enhanced force and the future force, because at any point the requirement for the employment of combat capabilities may emerge at short notice. Considering the volatility in the environment, there will be very less time and space for the acquisition of these capabilities. SLN must therefore ensure that they maintain appropriate levels of current capability for preparedness while ensuring that they acquire sufficient future capability with sound focus and planning.

Future Navy: Prospects and Challenges

To sustain and achieve Navy's vision and respond to mitigate future maritime challenges, crisis and strengthen existing partnerships, SLN will:

- Develop a motivated and relevant future force of officers and sailors who are diverse in experience, capable and professional to conduct naval operations.
- Advance her naval capabilities that maintain our surveillance and monitoring in the maritime domain, especially in contested environment. SLN will continue to develop sensors, whilst deploying advanced unmanned sensors and protection systems on ships and shore installations.

- Improve SLN capability to seize, establish, sustain and protect naval assets that enhance naval operations in anti-access/area-denial the threat environment.
- Involve continued R & D projects to enhance capability of force multipliers.
- Continue developing innovative technologies to ensure marine environment preservation and protection.
- Increase capabilities in C4ISR along with other maritime partners in the region to improve MDA.
- Enhance interoperability and capability to perform VBSS operations in contested maritime environment.
- Improve interoperability between Navy and Coast Guard in accordance with the national security policy to maximize sea control and to enhance maritime security in the region.
- Develop mutual understanding and support with regional and extra regional partners through training, exercises and develop own capabilities to address comprehensive maritime security challenges.
- Preserve existing inventory that are combat ready and prepared to rapidly respond to crisis, major contingencies and threats against the country/region.
- Develop a balance fleet to all kind of maritime challenges including surface ships with integrated air arm and auxiliary fleet.
- Ensure safety, security and quality of; professional and personal life of SLN personnel and allow them to thrive through their commitments.
- Continue developing naval leaders with their obligation to the naval profession by upholding core values, ethos and abiding sense of accountability for their actions.
- Evolve counter small boat swarm tactics with the use of innovative technologies to counter emerging threats.
- Enhance cyber security and resiliency by introducing modernise information technology network.

SLN will increasingly leverage its Navy in the pursuit of its national security objectives. In this turbulent world, SLN provide nation with credible and flexible option to sustain freedom of seas, rapidly respond

to crisis and handle emerging maritime threats by ensuring the safety and security of seas around the country as well as in the IOR.

As SLN faces new challenges in the 21st century, SLN will remain committed to the development of the Navy by validating with new operational concepts, employing innovative capabilities that sustain our capabilities and capacities.

SLN's foremost priority remains the security and prosperity of our nation. Hence, SLN ensures continue rendering the yeoman service as the Silent Service of the Nation.

GLOSSARY

Advance Force Operations

A temporary support force assigned to the amphibious force that conducts shaping operations in the amphibious objective area or operational area prior to the arrival of the amphibious force.

Agility

The combination of robustness, resilience, responsiveness, flexibility, innovation and adaptation.

Aid to Civil Power

Naval operations to provide military assistance to the civil power are usually aimed at supporting domestic law enforcement at sea and land within national jurisdictions.

Amphibious Operation

An amphibious operation is a military operation launched from the sea by an amphibious force (AF) to conduct landing force (LF) operations within the littorals. The littorals include those land areas (and their adjacent sea and associated air space) that are predominantly susceptible to engagement and influence from the sea.

Amphibious Ships

These ships are designed to embark land forces and their equipment and have an inherent, although limited, capacity to sustain land operations.

An Amphibious Assault

A type of amphibious operation that involves establishing a force on a hostile or potentially hostile shore.

An Amphibious Demonstration

A type of amphibious operation conducted for the purpose of deceiving the enemy by a show of force with the expectation of deluding the enemy into following an unfavourable course of action.

An Amphibious Raid

A type of amphibious operation involving swift incursion into or temporary occupation of an objective followed by a planned withdrawal.

An Amphibious Withdrawal

A type of amphibious operation involving the extraction of forces by sea in ships or craft from a hostile or potentially hostile shore.

Asymmetric Warfare

Unconventional strategies and tactics adopted by a force when the military capabilities of belligerent powers are not simply unequal but are so significantly different that they cannot make the same sorts of attacks on each other.

Attrition

Gradual but, steadily destruction of enemy's war fighting capabilities in order to degrade the war-waging ability.

Auxiliaries

These ships are specifically designed to support other ships with limited self-sustainment capacity. They carry and have the ability to lift personnel, deliver provisions, general stores and they deliver and receive fuel.

Barrier Operations

Conducted where geography and/or oceanography combine to create a focal area that can be closed to an adversary.

Biomedical Engineering

Biomedical engineering is the application of the principles and problem solving techniques of engineering to biology and medicine.

Blockade

An operation intended to disrupt the enemy's economy by preventing ships of all nations from entering or leaving specified coastal areas under the occupation and control of the enemy. Blockade is an act of war and the right to establish it is granted to navies under the traditional laws of war. This law requires, inter alia, that the blockade must be effective, that it is to be declared by the belligerent so that all interested parties know of its existence and that it is confined to ports or coasts occupied by the enemy. The expression is used more broadly to mean a combat operation carried out

to prevent access to, or departure from the coast or waters of a hostile state.

Blue water

The high seas and open oceans.

Brown water

Navigable rivers, estuaries and associated ports.

Campaigns

A series of related major operations aimed at achieving strategic and operational objectives within a given time and space.

Centre of Gravity

The source of power that provides moral or physical strength, freedom of action, or will to act.

Chartered Shipping

Support capabilities which can be enhanced by chartering or leasing merchant ships and modifying them to the extent required by an operation.

Choke Point

Where maritime traffic converges to move from one ocean or sea to another include the straits.

Coercion

The use of own military capabilities as threat against the enemy to hinder their will to fight and achieve superiority over them.

Combat power

The total means of destructive and/or disruptive force which a military unit/formation can apply against the opponent at a given time.

Combatant

All members of the armed forces of a party to the conflict are combatants, except medical and religious personnel.

Command of the Sea

Complete, absolute and permanent control of a specific part of the ocean or sea area, thereby ensuring one's free use of sea lanes of communication and full denial of it to the adversary.

Commander's Intent

A clear and concise expression of the purpose of the operation and the desired military end state that supports mission command, provides focus to the staff, and helps subordinate and supporting commanders act to achieve the commander's desired results without further orders, even when the operation does not unfold as planned.

Compellance

Achieving the change of behaviour of enemy by inducement using own military force and its capabilities.

Concept of Operation

A verbal or graphic statement that clearly and concisely express what the joint force commander intends to accomplish and how it will be done using available resources.

Conflict

A conflict is a situation in which violence is either manifested or threatened. It is a struggle or a clash between contending wishes.

Constabulary Role

Forces are employed to enforce law of the land or to implement a regime established by an international mandate. Force is only employed for self-defence or as a last resort in execution of this role.

Containment

The operations to restrict the freedom of action of enemy forces.

Cooperation

Coordination of all units to achieve the maximum combined effort. Cooperation occurs when Commanders proactively seek to understand and support the objectives fellow Commanders working to achieve the same aim.

Courage

Courage is the ability to control our fear in a dangerous or difficult situation and strength of character to do what is right in the face of adversity. It demands unwavering obedience to moral principles.

Course of Action

Any sequence of activities that an individual or unit may follow. A scheme developed to accomplish a mission.

Cover

These are the operations conducted to provide support to less powerful units or detached elements in order to provide security to the detached units out at sea.

Critical Capability

A means that is considered a crucial enabler for a center of gravity to function as such and is essential to the accomplishment of the specified or assumed objective(s).

Critical Factors

An attribute considered crucial for the accomplishment of the objective that describes the environment and must be identified and classified as either sufficient or insufficient.

Critical Information

Specific facts about friendly intentions, capabilities, and activities vitally needed by adversaries for them to plan and act effectively so as to guarantee failure or unacceptable consequences for friendly mission accomplishment.

Critical Requirement

An essential condition, resource, and means for a critical capability to be fully operational.

Critical Vulnerability

An aspect of a critical requirement which is deficient or vulnerable to direct or indirect attack that will create decisive or significance effects.

Decisive Point

A geographic place, specific key event, critical factor, or function that, when acted upon, allows commanders to gain a marked advantage over an adversary or contribute

materially to achieving success.

Destruction

Physically destroying of enemy's war fighting capabilities such as their military hardware, troops, command and control facilities mostly by using military force.

Deterrence

Preventing aggression by convincing a potential aggressor that the cost of coercion would be more than its likely gain.

Disorder

An attribute of war especially due to the environment of friction, uncertainty and fluidity where set plans will be ineffective, instructions and information will be distorted, misunderstood and communication will be failed resulting mistakes and unpredicted events will take over the arranged plans.

Disputed Sea Control

Disputed sea control occurs when the opposing sides possess roughly equal capabilities and opportunities to obtain sea control in a theatre as a whole (or in one of its parts) and there is no significant change in the ratio of forces, nor change of the initiative to either side. Disputed sea control often occurs in the initial phase of a war. It is characterized by an almost continuous struggle for control of certain sea or ocean areas.

Disruption

The actions of the enemy to disturb and unable the effective function of the cohesiveness of the troops in combat.

Dissuasion

Convincing another state by diplomatic means without the threat or use of force to abstain from carrying out certain actions that are harmful to own interest.

Diving Tender

A small craft that utilized for Diving and Salvage operations.

Doctrine

Fundamental principles by which military forces guide their actions in support of objectives. It is authoritative but requires judgment in application.

Drug Trafficking

Drug trafficking is a global illicit trade involving the cultivation, manufacture, distribution and sale of substances which are subject to drug prohibition laws.

Economy of Effort

Economy of effort is the prudent allocation and application of resources to achieve the desired results and needs to be balanced with the other principles of war, notably security and sustainability.

Electronic Warfare

Military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy.

Embroidment

It is a situation where conditions are altered to use of force to attain political objectives by a large scale, of greater intensity, or longer duration than it had predicted or was prepared at the initial stages.

End State

The set of required conditions that defines achievement of the commander's objectives.

Environmental Doctrine

Environmental doctrine draws on functional and thematic doctrine that is specific to the maritime, land, air, space, information (including cyberspace) and electromagnetic environments. It describes doctrine within the context of the surrounding or conditions within which operations occur.

Escalation

Increasing the intensity of the conflict during the course of an operation.

Essential Task

A specified or implied task that an organisation must perform to accomplish the mission that is typically included in the mission statement.

Established Peace

There is no threat or actual violence. However, this is a transitory condition, generally not enjoyed for long.

Exclusive Economic Zone (EEZ)

A maritime zone adjacent to the territorial sea that may not extended beyond 200 nautical miles from the base line from which the breadth of the territorial sea is measured.

Fleet in Being

Concept involves the advantage a weaker power has of avoiding a head on confrontation with a stronger power by forcing the stronger power to divert valuable resources to contain it. Thus, a Fleet in Being can compel the enemy to concentrate its forces, against its will, in a valuable area; or around valuable units; or cause him to route its passage to its disadvantage; or to amend its operational plans.

Flexibility

The capacity to adapt plans to take account of unforeseen circumstances to ensure success in the face of friction, unexpected resistance, or setbacks, or to capitalise on unexpected opportunities.

Fluidity

Conduct of war requires flexibility of thoughts. Thus, success will be determined on the ability in adaptation, proactively shaping the events to own advantage and reacting to constantly changing conditions.

Fog of War

Uncertainty and confusion generated in wartime by a combination of limited, incomplete, inaccurate and contradictory information, deliberate deception and the mayhem and stress caused by combat.

Fragile Peace

In a situation following a conflict; if the basic causes and effects have not been fully dealt with or restored, the peace that exists will be fragile and will demand careful steps to rebuild and consolidate.

Friction

Friction is the element that amalgamates to form the atmosphere of war and turn into a medium which hampers activity. Simply it is a struggle between two or more opposing concepts or wills.

Full scale war

Full scale war refers to the stance of the nation fighting. Another term for it is 'Total War', that means the nations near total focus is to fight the war.

Functional Doctrine

It describes a joint approach and is set at the operational level. Supporting publications provide additional detail for each area of functional doctrine.

Golden Crescent

The name given to one of Asia's two principal areas of illicit opium production (with the other being the Golden Triangle), located at the crossroads of Central, South and Western Asia. This space overlaps three nations, Afghanistan, Iran and Pakistan, whose mountainous peripheries define the crescent.

Golden Triangle

The area where the borders of Thailand, Laos and Myanmar meet at the confluence of the Ruak and Mekong rivers.

Green Water

Coastal waters, ports and harbours.

Greenhouse Gas

A gas that absorbs and emits radiant energy within the thermal infrared range. Greenhouse gases cause the greenhouse effect.

Gunrunning

Gunrunning is the activity of taking or sending guns into a country secretly and illegally.

Honesty

Honesty is always being true to self and others.

Honour

Honour is the vital value on which the each person's moral and ethical standards are reflected.

Human Smuggling

Human smuggling is defined as those activities that facilitate illicit crossing of national borders with consent of the individuals smuggled.

Human Trafficking

The action or practice of illegally transporting people from one country or area to another, typically for the purposes of forced labour or sexual exploitation.

Humanitarian Assistance and Disaster Relief (HADR)

Assistance to provide a comprehensive logistic support and refuge offshore base for humanitarian assistance as a means of transport and offshore base. The attribute of flexibility of maritime forces will enhance the effectiveness in disaster relief especially in the early stages of disasters.

Hydrographical Surveys

Survey of sea and sea bed area for the purpose of navigation or operations.

Implied Task

In the context of joint operation planning, a task derived during mission analysis that an organisation must perform or prepare to perform to accomplish a specified task or the mission, but which is not stated in the higher headquarters order.

Information Fusion

Combination of data from multiple sources and gather that information into discrete, actionable items in order to achieve inferences, which will be more efficient and narrowly tailored than if they were

Instruments of National Power

All of the means available to the government in its pursuit of national objectives. They are expressed as diplomatic, economic, informational and military.

Integrity

Integrity is being committed to always doing what is right, no matter what the consequences. It defines the moral power and underpins fighting spirit.

Interdiction

Interdiction operations will be conducted to divert, disrupt, or destroy the enemy before inflict damages to friendly forces.

Interest Based Conflict

A conflict arising from a dispute over trade, resources, international or regional status is considered to be interest based.

Interoperability

The ability to operate in synergy in the execution of assigned tasks. The condition achieved among communication-electronics systems or items of communication-selectronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users. The degree of interoperability should be defined when referring to specific cases.

Joint Intelligence Preparation of the Operational Environment (JIPOE)

JIPOE is a product of Intelligence Staff Estimate. Most important portions of the estimate enemy's objectives, respective (COG) and enemy's most likely and dangerous COA. All planners need a basic familiarity with the IPOE process in order to become critical consumers of the products produced by the intelligence community.

Layered Defence

Operations conducted by maritime forces, including as it does the method of convoy. Escorts, generally surface or airborne, provide warning and weapon coverage against air, surface or underwater threats by acting as moving screens around the high value unit or units to be protected.

Lift Capacity

Capacity to support to deploy, withdraw, maintain, and reinforce military capabilities and requirements.

Limited War

This is a cold war term and was principally used to distinguish international conflict in which it was thought there would be no way out to nuclear weapons.

Littoral

The littoral comprises two segments of the operational environment: 1. Seaward: the area from the open ocean to the shore, which must be controlled to support operations ashore. 2. Landward: the area inland from the shore that can be supported and defended directly from the sea.

Littoral Countries

Countries which are in the littoral zone or near shore. Littoral zone is the part of a sea, lake, or river that is close to the shore. In coastal environments, the littoral zone extends from the high water mark, which is rarely inundated, to shoreline areas that are permanently submerged.

Logistics

Planning and executing the movement and support of forces. In its most comprehensive sense, the aspects of military operations which deal with: design and development, acquisition, storage, movement, distribution, maintenance, recovery and disposal of materiel; transport of personnel; acquisition or construction, maintenance, operation and disposition of facilities; acquisition or furnishing of services; medical and health service support.

Loyalty

Loyalty is being committed to each other and to the duty of service to the country.

Main Effort

The Main Effort is what the commander considers to be the activity which is crucial to the success of the mission.

Major Vessels

Vessels which are designed to operate independently in most navigable areas of regional/ extra regional oceans. They are capable to operate extended periods at sea by replenishing supplies including fuel, water, provisions and ammunition while underway.

Maritime Doctrine

Maritime doctrine is that component of military doctrine which endures the employment of armed forces at and from the sea. It is derived from the hard won experience of those who have gone and involved in action before. This publication, Maritime Doctrine of Sri Lanka (SLN BR 1), explains the key concepts for the conduct of successful maritime operations. At a fundamental level it explains why Sri Lanka has a Navy.

Maritime Domain

The series of jurisdiction zones that surrounds the coast of a state. It includes territorial seas and the exclusive economic zone.

Maritime Domain Awareness (MDA)

MDA is the effective understanding of anything associated with the maritime domain that could impact the security, safety, economy, or environment of the country.

Maritime Fighting Power

Defines the ability to fight, and comprises three components; conceptual, moral and physical.

Maritime Piracy

Any criminal acts of violence, detention, rape, or depredation committed for private ends by the crew or the passengers of a private ship or aircraft that is directed on the high seas against another ship, aircraft, or against persons or property on board a ship or aircraft. Piracy can also be committed against a ship, aircraft, persons, or property in a place outside the jurisdiction of any state.

Maritime Power

The ability to project power at sea and from the sea to influence the behaviour of people or the course of events.

Maritime Power Projection

Power projection is in and from the maritime environment, including a broad spectrum of offensive military operations to destroy enemy forces or logistic support or to prevent enemy forces from approaching within enemy weapons' range of friendly forces.

Maritime Rescue Coordination Centres (MRCC)

A centre established for Maritime Search and Rescue Coordinating to achieve safety of life at sea

Maritime Routes

Maritime routes are a function of obligatory points of passage, which are strategic locations that act as chokepoints. Physical constraints (coasts, winds, marine currents, depth, reefs, ice) and political borders also play an important role in shaping maritime routes.

Maritime Strategy

A maritime strategy comprehends naval strategy but is broader in nature. Maritime strategy is creating and orchestrating the elements of sea power in the spectrum of conflict (peace and war) to achieve national maritime policy objectives.

Maritime Strike

Combat operations that are conducted against an adversary's combat and logistics shipping for either a direct strategic effect or to meet and operational or tactical aim.

Maritime Trade

Principal means of transporting raw materials and manufactured goods. Nearly Ninety percent of the entire world's trade by weight is still carried by ships. The sea remains the primary and it is the most cost-effective, means for the movement of international trade.

Maritime Trade Routes

A logistical network identified as a series of maritime routes and stoppages used for the commercial transport of cargo.

Media Operations

An important component of Information Warfare. During an operation, media influences public opinion at home, in the adversary country and in the international community. It thereby impacts significantly on the course of the operation in many ways.

Military Doctrine

Military doctrine is based on in depth analysis and comprehensive understanding of the history of human conflict and military experience. It guides armed forces on how

to conduct themselves on operations. It is also a body of professional knowledge and a common basis for understanding the nature and conduct of armed conflict.

Mission

The task together with the purpose, that clearly indicates the actions to be taken and the reason therefore. When applied to lower military units, a duty assigned to an individual or unit.

Mission Command

The conduct of military operations through decentralised executions based upon mission type orders.

Mobility

Ability to move, replenish and be prepared for the sea within short notice, carrying huge payload of fuel oil, foods, arms and ammunitions provides enhance flexibility in both tactical and operational levels.

Motivation

The process of stimulating people to accomplish desired goals.

National Aim

National aim provides the basis for defining national interests. Sri Lanka's national aim is derived from the Constitution, is the creation and preservation of a just and free society guaranteeing the dignity and wellbeing of succeeding generations, with unhindered economic progress, social and cultural order attained, the unity of the country restored, and concord established with other nations.

National Interests

The combination of national values and national aim gives shape to National Interests which in turn determine the National Security Objectives. Sri Lanka's national interests are expressed in the Constitution.

National Security Objectives

The security objectives that determined from the national interests.

National Security Policy

National Security Policy is formulated by viewing the national security objectives and the components of national power in the domestic and global environment both prevailing and predicted. It provides the policy guidelines development of strategies in the exercise of national power.

National Security Strategy (NSS)

NSS is creating and orchestrating the instruments of national power in support of National Security Policy objectives. The NSS provides the essence for further development of the Joint Military Strategy, with constituent Land, Maritime and Air Strategies underpinned by the Land, Maritime and Air Doctrines.

National Strategy

National Strategy is the plan for employment of various tools and instruments of national power in accordance with the national security policy, to achieve the desired national security objectives in support of national interests.

National values

The values which evolve from a nation's, history and culture. Democratic Socialist Republic of Sri Lanka recognises freedom, equality, justice and fundamental Human Rights as core national values based on the constitution.

Naval diplomacy

The use of naval force in support of diplomacy to support, persuade, deter or compel.

Naval Infantry

The Naval Infantry constitutes the land fighting component to conduct combat operations on land.

Naval Strategy

A naval strategy deals mainly with the development and employment of naval forces. It is the planning and conducts of war at sea, the naval equivalent of military strategy on land.

Navy Planning

A comprehensive process that facilitates commanders and staffs at all levels to make informed decisions, solve multifaceted problems, and ultimately achieve assigned missions. The process facilitate the commander envisages an end state as well as the

arrangement of potential actions in time and space that will allow the realisation of that future.

Network Centric Operations

The style of operations that can be undertaken by a networked force where the automatic and rapid transfer of information enables the most effective use of combat power and takes place when the force can operate as a single virtual network.

Network Centric Operations

Defined as networking and combination of present tactics, techniques, and procedures fully or partially in order to achieve advantage over adversaries. It is an information superiority which generates increased combat power by networking sensors, decision makers, information and operational/tactical levels to achieve shared awareness, increased speed of command, high tempo of operations, greater lethality, increased survivability, and a degree of self-synchronisation.

Network Management Centre

Centre established for operation and management of data and telecommunication network, including, Microwave Links, Wide Area Network and Local Area Network.

Objective

The clearly defined, decisive, and attainable goal toward which every operation is directed. The specific target of the action taken which is essential to the commander's plan.

Oceanic Resources

All living and non-living resources in the ocean. Energy resources such as minerals and all living resources.

Offensive Action

The action taken against the enemy to gain and retain the initiative. In most circumstances, such action is essential to the achievement of victory. When offensive action is required, it must be swift, decisive and should be directed towards the achievement of the end state. Offensive action is not limited to the application of force but encompasses the proactive use of non-kinetic capabilities such as information dominance and influence.

Operational Art

Defined as the cognitive approach by commanders and staffs—supported by their skill, knowledge, experience, creativity, and judgment—to develop strategies, campaigns, and operations to organise and employ military forces by integrating ends, ways, means, and risk. Operational art requires broad vision and the ability to anticipate.

Operations Other Than War

Operations other than war embrace peace support operations within which is peacekeeping, peace enforcement, conflict prevention, peace-making, peace building, humanitarian operations and counter insurgency operations.

Patrol Craft

Smaller vessels which are designed to operate for much shorter periods. Patrol craft are small, fast and robust vessels armed with medium and short ranged surface and anti-air weapons.

Peace

Peace is a condition that exists in the relations between groups, classes or states when there is an absence of direct or indirect violence or the threat of violence.

Peace Building Operations

The actions that support political, economic, social and military measures and structures, aimed to strengthen and solidify political settlements in order to address the causes of conflict.

Peace Keeping Operations

The operations that are undertaken with the consent of all the major parties in a conflict under Chapter VI of the UN Charter, to monitor and facilitate the implementation of peace agreement. Not all peace keeping forces, however, are controlled by the UN.

Peace Making Operations

The activities conducted after commencement of a conflict, to secure a ceasefire or prompt a rapid peaceful settlement.

Persuasion

Persuasion is convincing another state, by diplomatic means without the threat or use of force to carry out certain actions that are in its own interests, by emphasising the benefits of the actions to that state.

Poise

Ability to remain on station for an extended period of time both covertly and overtly based on the situation. During the time on station, they have the option to do what is the best suited to the particular situation. They will be allowed to seize the initiative, act as a force for coercion or deterrence.

Policy

Policy articulates a choice leading to a course of action proposed or adopted by a government. It is a statement of intent, or a commitment to act.

Preventive Diplomacy

Aims to prevent disputes for developing, or to prevent existing disputes from escalating.

Principles of War

Principles of warfare are the evolved concepts, laws, rules and methods that guide the conduct of combat related activities during conflicts. Throughout history, soldiers, military theorists, political leaders, philosophers, academic scholars, practitioners of international law and human rights advocacy groups have sought to determine fundamental rules for the conduct of warfare.

Rapid Action Boat Squadron (RABS)

Special naval unit that based on swarming tactics in which a flotilla of small boats, operating as swarm confronts enemy craft.

Regional Conflict

The term regional conflict describes a limited conflict arising out of regional issues in a specific geographical area.

Salvage Operations

Special operation conducted at sea or inland water to recover the damage from disaster.

Scheme of Manoeuvre

The scheme of manoeuvre expands the intent to describe how the commander sees his operation unfolding.

Sea Control

Condition in which one has freedom of action to use the sea for one's own purposes in specified areas and for specified periods of time and, where necessary, to deny or limit its use to the enemy. Sea control includes the airspace above the surface and the water volume and seabed below.

Sea Denial

Partially or completely denying the adversary the use of the sea with a force that may be insufficient to ensure the use of the sea by one's own forces.

Sea Lines of Communication (SLOC)

The sea routes that connect an operating military force with one or more bases of operations and along which supplies and reinforcements move. The expression is sometimes used more broadly in a strategic sense to include commercial shipping routes.

Sealift

The movement of resources between points by carriage in shipping.

Search and Rescue Region (SAR)

Area demarcated internationally to maritime states for the purpose of search and rescue.

Security

The measures taken by a command to protect itself from espionage, sabotage, subversion, observation or surprise.

Shaping

Creating the conditions for mission success.

Shore Support

The logistic support mechanism which is established to provide service facilities such as bases and supply units, private contractors involve in both domestic and international.

Specified Task

In the context of joint operation planning, a task that is specifically assigned to an organisation by its higher headquarters.

Spectrum of conflict

Signifies the full range of situations in which military forces may be called upon to operate, ranging from stable peace to full scale warfighting.

Sri Lanka Volunteer Naval Force

A force of volunteer naval personnel supplementing the regular naval force in operational, administrative, technical, training duties and nation building endeavours along with regular naval personnel.

Strait

A narrow passage of water connecting two seas or two other large areas of water.

Strategic Intent

The philosophical base of the strategic management process. It implies the purpose, which an organisation endeavour of achieving. It is a statement, that provides a perspective of the means, which will lead the organisation, reach the vision in the long run.

Strategy

Strategy is creating and orchestrating the instruments of power in support of long term policy objectives.

Surprise

An effective and powerful influence on combat operations and its psychological effect can be immense.

Sustainability

The range and endurance that provides individual units to sustained and reach extended period at considerable distances from shore or base support. It describe the force's ability to continue to conduct operations, measured in terms of the personnel, equipment, facilities and consumables needed to complete operational tasks.

The Maritime Domain

The maritime domain is simply defined as 'the oceans, seas, bays, estuaries, island, coastal areas, and the airspace above these, including the littorals'. It is all areas and things of, on, under, relating to, adjacent to, or bordering on a sea, ocean, or other navigable waterways, including all maritime-related activities, infrastructure, people, cargo, and vessels and other conveyances.

Navy Planning Process

The specific process for planning naval operations where commander can plan for, prepare and execute operations from the operational through the tactical levels of war. It ensures that the employment of forces is linked to objectives, and integrates naval operations with the actions of the joint force.

Principles of War

Principles of War are a distillation of experience and a simplification of complex and sometimes contradictory ideas. They are broad precepts for the conduct of armed conflict and should be used to inform all military strategic and operational decisions rather than as a planning checklist.

Thematic Doctrine

Thematic doctrine operationalizes functional doctrine within a specific context or for a particular contingency.

Total War or General War

This is commonly used to define major unrestricted conflict in which national survival is at stake. The definition is; General war implies a total national effort in, which all elements of society will be involved.

Track 2 Diplomacy

Interaction among people from advisory groups or nations, intended to explore issues and solutions on an informal and unofficial basis.

Understanding

Understanding is defined as: the perception and interpretation of a particular situation in order to provide the context. Insight and foresight are required for effective decision making. Understanding should not be confused with intelligence or information.

Value Based Conflict

A conflict arising from a dispute relating to territory or resulting from religious or ethnic rivalry can be considered to be value based.

Versatility

Ability to change their military posture, undertake several tasks concurrently and be readily available for re-tasking.

Vulnerable Peace

In circumstances where peace is threatened it could be termed as vulnerable peace.

War

Defined as a clash between organised groups characterised by the use of military force, established nation-states or non-state groups. A violent struggle between two hostile, independent, and irreconcilable wills, each trying to impose itself on the other.

Warning Order

A preliminary notice of an order or action that is to follow. A planning directive that initiates the development and evaluation of military courses of action by a supported commander and requests that the supported commander submit a commander's estimate. A planning directive that describes the situation, allocates forces and resources, establishes command relationships, provides other initial planning guidance, and initiates subordinate unit mission planning.

Weapon Engineering

Weapons Engineering involves developing and testing the weapons of a nation's military

Weapon of Mass Destruction

A nuclear, radiological, chemical, biological, or any other weapon that can kill and bring significant harm to numerous humans or cause great damage to human-made structures (e.g., buildings), natural structures (e.g., mountains), or the biosphere.

White Shipping

White shipping means sharing and exchange of advance information regarding identity and movement of non-military commercial vessels.

Will Power

Human component to overcome the friction.

Work Life Balance

Comforts and activities of normal elements of person's life to ensure they live well, work well and be well.

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ABBREVIATIONS

AIS	Automatic Identification System
AOPV	Advance Offshore Patrol Vessel
AW	Asymmetric Warfare
BM	Breakdown Maintenance
BOD	Board of Directors
BOM	Board of Management
BR	Book of Reference
C4ISR	Command, Control, Communications, Computers, Intelligence,
CBRN	Chemical, Biological, Radiological and Nuclear
CC	Critical Capability
CCIR	Commander’s Critical Information Requirement
CMDT NMA	Commandant Naval & Maritime Academy
CNI	Commandant Naval Infantry
CNVF	Ceylon Naval Volunteer Force
COA	Course of Action
CofN	The Commander of the Navy
COG	Centre of Gravity
COIN	Counter Insurgency
COMVNF	Commandant Volunteer Naval Force
CONOP	Concept of Operation
COS	Chief of Staff
CR	Critical Requirement
CRD	Centre for Research and Development
CRNVR	Ceylon Royal Naval Volunteer Reserve
CS	Continental Shelf

CSC	Cyber Security Cell
CST	Captain Sea Training
CV	Critical Vulnerability
DAE	Director Automobile Engineering
DCA	Director Civil Administration
DCOS	Deputy Chief of Staff
DES	Director Engineering Services
DG(B&F)	Director General Budget & Finance
DGA	Director General Administration
DGCE	Director General Civil Engineering
DGE	Director General Engineering
DGHS	Director General Health Services
DGL	Director General Electrical and Electronic Engineering
DGLOG	Director General Logistics
DGO	Director General Operations
DGP	Director General Personnel
DGS	Director General Services
DGT	Director General Training
DHE	Director Hull Engineering
DILMS	Director Integrated Logistics Management System
DIME	Diplomacy, Information, Military and Economy
DLMC	Director Logistics Management Cell
DME	Director Marine Engineering
DMSF	Director Marine Special Forces
DN (FP)	Director Naval (Foreign Procurement)
DN (Ins)	Director Naval Inspectorate
DN (V&C)	Director Naval Victualling and Clothing
DN(LOG)	Director Naval Logistics

DN(P&P)	Director Naval (Pay & Pension) DF - Director Finance
DNA	Director Naval Administration
DNB	Director Naval Budget
DNC	Director Naval Communication
DNCE	Director Naval Civil Engineering
DND	Directorate of Naval Design
DND	Director Naval Design
DNDS	Director Naval Dental Services
DNFC	Director Naval Foreign Cooperation
DNI	Director Naval Intelligence
DNI	Director Naval Infantry
DNIT	Director Naval Information Technology
DNL (A&U)	Director Naval Electrical and Electronic Engineering (Admin & Utility)
DNL (F&W)	Director Naval Electrical and Electronic Engineering (Fleet & Weapon)
DNLS	Director Naval Legal Services
DNMS(D&C)	Director Naval Medical Services (Diagnostic & Curative)
DNMS(P&R)	Director Naval Medical Services (Preventive & Rehabilitation)
DNO	Director Naval Operations
DNP	Director Naval Personnel
DNPP	Director Naval Projects and Plans
DNT	Director Naval Training
DNW	Director Naval Welfare
DNWP	Director Naval Weapon
DOM	Director of Music
DP	Decisive Point
DRU	Disaster Response Unit

DS	Director Sports
EEZ	Exclusive Economic Zone
ENA	Eastern Naval Area
ENDC	Electrical New Design Centre
EPABX	Electronic Private Auto Branch Exchange
ESM	Electronic Support Measures
FAC	Fast Attack Craft
FGB	Fast Gun Boat
Flag I	Flag Lieutenant I to the Commander of the Navy
FMV	Fast Missile Vessel
FOCNF	Flag Officer Commanding Naval Fleet
FOCNF	Flag Officer Commanding Naval Fleet
FOP	Future Operation
FOST	Flag Officer Sea Training
HADR	Humanitarian Assistance and Disaster Relief
HHQ	Higher Headquarters
HMCyS	Her Majesty's Ceylon Ship
HMS	Her Majesty's Ship
ICRC	International Committee of the Red Cross
ICT	Information and Communication Technology
IHL	International Humanitarian Law
IMO	International Maritime Organisation
IOR	Indian Ocean Region
IPKF	Indian Peace Keeping Force
IPOE	Intelligence Preparation of the Operational Environment
ISBA	International Seabed Authority
ISPS	International Ship and Port Facility Security (Code)
ISR	Intelligence, Surveillance and Reconnaissance

IT	Information Technology
IUU	Illegal Unreported and Unregulated Fishing
JA	Judge Advocate
JIPOE	Joint Intelligence Preparation of the Operational Environment
LOAC	Law of Armed Conflict
LOSC	Law of the Sea Convention
LTTE	Liberation Tigers of Tamil Eelam
MDA	Maritime Domain Awareness
MDSL	Maritime Doctrine of Sri Lanka
Media Co	Media Coordinator and Naval Coordinator Media Centre for MOD
MOD	Ministry of Defence
MRCC	Maritime Rescue Coordination Centre
MTTU	Machinery Testing and Trial Unit
NA	Naval Assistant to the Commander of the Navy
NAD	Naval Armament Department
NARA	National Aquatic Resources Agency
NATO	North Atlantic Treaty Organisation
NBBY	Naval Boat Building Yard
NBU	Naval Biomedical Unit
NCNA	North Central Naval Area
NEO	Non-combatant Evacuation Operations
NHO	National Hydrography Office
NMC	Network Management Centre
NNA	Northern Naval Area
NPP	Navy Planning Process
NSP	National Security Policy
NSS	National Security Strategy
NWNA	North Western Naval Area

OE	Operational Environment
OOTW	Operations Other Than War
OPLAN	Operation Plan
OPORD	Operation Order
OPT	Operational Planning Team
OPV	Offshore Patrol Vessel
PBED	Plan, Brief, Execute, Debrief
PLC	Public Limited Company
PM	Provost Marshal
PPM	Planned Preventive Maintenance
PSEC	Aide & Personal Secretary to the Commander of the Navy
PSYOPS	Psychological Operations
R&D	Research and Development
RABS	Rapid Action Boat Squadron
RABU	Rapid Action Boat Unit
RCC	Recompression Chamber
RDU	Research and Development Unit
ROE	Rules of Engagement
SAE	Service Assisted Evacuation
SAR	Search and Rescue
SAS	Special Air Service
SBS	Special Boat Squadron
Sec to CofN	Secretary to the Commander of the Navy
SENA	South Eastern Naval Area
SLA	Sri Lanka Army
SLAF	Sri Lanka Air Force
SLCG	Sri Lanka Coast Guard
SLN	Sri Lanka Navy

SLNHS	Sri Lanka Navy Hydrographic Service
SLNS	Sri Lanka Naval Ship
SLOC	Sea Lines of Communication
SLVNF	Sri Lanka Volunteer Naval Force
SNA	Southern Naval Area
SOE	Special Operations Executive
SOLAS	Safety of Life at Sea
SOP	Standard Operation Procedure
SPE	Service Protected Evacuation
TEU	Twenty Foot Equivalent Unit
UAV	Unmanned Aerial Vehicle
UN	United Nations
UNODC	United Nations Office on Drugs and Crime
VBSS	Visit, Board, Search and Rescue
VMS	Vessel Monitoring System
VSS	Volunteer Special Scheme
WARNOD	Warning Order
WEU	Weapon Engineering Unit
WMD	Weapons of Mass Destruction
WNA	Western Naval Area
4RU	Rapid, Response, Rescue and Relief Unit

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Doctrine Development Team

Cmde UVMP Perera, RSP & Bar, USP, ndc, psc

Cmde (E) HK Dassanaiké, USP, psc

Cmde HGUD Kumara, USP, psc

Cmde (L) KMMP Karunathilake, USP, psc

Capt (S) ABRA De Silva, RSP & Bar, USP, psc

Capt (SBS) AD Weerasinghe, RSP, psc

T/Capt (NP) CV Dangampala, USP, psn

Cdr (G) ERPK Udakumbura, RSP & Bar, psc

Cover Design

LCdr WMIRL Suriyabandara

Type Setting and Design

Lt CK Samararatne

IT I PHMP Maduranga

