



INDIAN MARITIME DOCTRINE

2025



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Foreword

1. India is a maritime nation with a prominent peninsular orientation that affords her a geographically advantageous and strategically significant position across the Indian Ocean and the wider Indo-Pacific. This expansive maritime space remains central to global trade, commerce, blue economy and uninterrupted flow of energy, even as it increasingly emerges as a focal point of geopolitical competition. The diversity of littoral states, coupled with the growing presence of extra-regional and global actors, has created a complex and evolving security environment marked by a wide spectrum of challenges. In this rapidly changing seascape, safe and secure seas are indispensable for sustaining India's growth and prosperity, thereby underscoring the safeguarding of the nation's maritime interests as an enduring priority.
2. The Indian Navy stands as the primary instrument and principal manifestation of India's maritime power, ensuring the security of the seas by deterring all forms of threats and, when required, achieving decisive victory. Its contributions to strengthening maritime security, upholding good order at sea, and providing humanitarian assistance have been significant, underpinning India's role as the region's "Preferred Security Partner" and "First Responder". These efforts will continue to reinforce India's reputation as a responsible and stabilising maritime power.
3. To provide clarity and coherence in its conduct and employment, the Indian Navy has periodically articulated its guiding principles and operational philosophies.

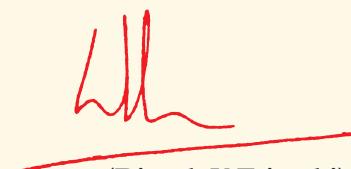
A doctrine serves to explain “Why we do, What we do” and offers a shared understanding of purpose across the Service. The Indian Maritime Doctrine (2009) and its updated online edition (2015) were important milestones in articulating the role and rationale of India’s naval power to naval personnel, the wider armed forces, Indian citizens, and the international community. These documents have effectively guided the Indian Navy’s evolution and operational orientation over the past decade.

4. Building on this, contemporary changes in technology, the evolving character of warfare, and geopolitical shifts have necessitated the revision and contemporisation of this capstone document of the Indian Navy. The Indian Maritime Doctrine - 2025 (IMD-25) is the outcome of this endeavour. While providing a common language and shared understanding of fundamental principles and operational philosophies, IMD-25 underscores the importance of a robust, adaptable, and credible posture for India in order to foster a secure and stable maritime environment. It elucidates India’s national interests, higher national directives, the maritime environment, and the Navy’s roles, purpose and application of naval combat power across the full spectrum of operations. This revision incorporates evolving realities, including grey-zone operations, no-war no-peace scenarios, and disruptive technologies that are reshaping the character of warfare, and aligns with the growing impetus on jointness and integration.

5. Doctrine is not dogma; it must remain flexible and responsive to change. The IMD-25 is conceived as a living document that is anchored in India’s maritime heritage, strengthened by operational experience, and adaptable to emerging realities. It reflects the Navy’s commitment to continuous learning, evolution, and clarity of purpose, guiding every naval professional in safeguarding India’s maritime interests, at all times.

6. I am confident that the Indian Maritime Doctrine – 2025 will serve as an enduring reference by strengthening our collective understanding of maritime principles, guiding efforts to secure the seas, advancing national interests, enhancing maritime consciousness, and contributing to a stable and prosperous India.

Sam No Varunah! Jai Hind.



(Dinesh K Tripathi)

Admiral

Chief of the Naval Staff

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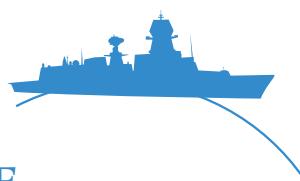
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1

INDIAN MARITIME DOCTRINE IN PERSPECTIVE





I

INDIAN MARITIME DOCTRINE IN PERSPECTIVE



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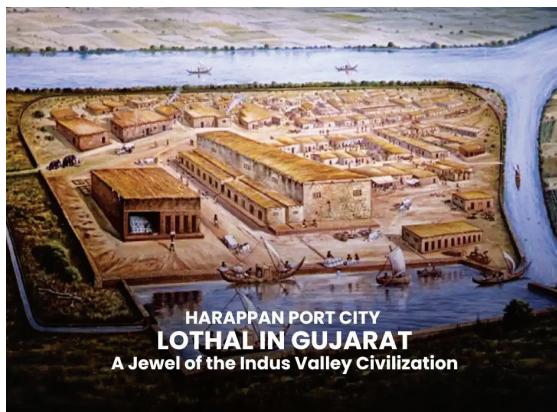
Sam No Varunah! (Be auspicious unto us, O Varuna!)

- Rig Veda



Historical Preview

 India's rich maritime tradition spans over 4,000 years. In ancient Indian texts the ocean is considered as the primordial source for creation of the universe. The earliest reference of maritime activities, dates back to the 2nd millennium BCE, with description of *Varuna* – the God of the Sea, ocean routes and naval expeditions, contained in the *Rig Veda*¹. Documented sea faring for trade, in the Indian context, can be traced back to the Indus Valley Civilization around 2300 BCE, when *Mohenjodaro*, *Lothal* and *Harappa* thrived on maritime activity with Africa, Arabia, Mesopotamia and the Mediterranean countries.



After the *Vedic Period*, the strategic thought of the *Mauryan Empire*, recognised the importance of maritime routes for governance, diplomacy and trade. The *Arthashastra* written by *Kautilya*, details a structured naval administration and provisions for riverine, coastal and oceanic operations to protect trade and combat piracy. Later, dynasties like the *Cholas*

used naval power to extend their influence overseas, particularly to South-East Asia, during the 9th to 13th centuries.

The *Maratha* Navy and the *Zamorin* Navy played a significant role in regional maritime dominance from the 16th to early 18th centuries. Maritime power saw a decline during the rule of the Delhi *Sultanate* and the *Mughal* Dynasty, as land-based threats from Central Asia, Persia and rival Indian kingdoms as also greater reliance on internal trade, diminished the urgency to control the sea routes. With the arrival of European powers, the Indian maritime landscape changed dramatically. The Portuguese, Dutch and British established their trading presence along the Indian coast and soon dominated the political scene. However, during colonial rule, India's shipbuilding industry, once a global leader, saw a steady decline and by the 20th century, India's shipbuilding capacity was reduced to a shadow of its former self, being deprived of modernisation and with limited infrastructure and resources. This deliberate marginalisation not only stifled India's maritime economy but also eroded its centuries old expertise in shipbuilding and navigation.²

During the colonial era, the British fundamentally shaped the evolution of naval power in India through the establishment and expansion of the Royal Indian Navy (RIN), in 1934. Originally formed as the East India Company's Marine in 1612, it underwent numerous reorganisations and renamings over the years viz the Bombay Marine, the Bombay Marine Corps, the Indian Navy, Her Majesty's Indian Navy, the Bombay and Bengal Marine, the Indian Defence Force, Her Majesty's Indian Marine and the Royal Indian Marine. The force was however limited to providing coastal defense, protecting merchant shipping, conducting surveys, troop transport and anti-piracy operations on behalf of the British empire.

During World War II, the RIN expanded exponentially, assuming combat, escort and patrol duties and contributed to Allied operations in the Indian Ocean and Mediterranean. Post World War II, the Royal Indian Navy Uprising of 1946 was a significant event in India's quest for independence. The experiences of the war and the tumultuous years thereafter, laid the institutional and operational foundation for the post-independence Indian Navy, as it attempted to regain its maritime moorings. With its rapidly increasing dependence on the seas for



economic and social well-being, independent India has adopted a comprehensive maritime strategy, to evolve from a coastal power to a dominant regional force in the IOR. The Indian Navy is now a force capable of performing a wide range of Military, Diplomatic, Constabulary and Benign roles. Additionally, by strengthening regional cooperation and strategic partnerships through bilateral and multilateral exercises, investing in naval infrastructure, technological advancements and maritime partnership with other nations, India has emerged as the *preferred security partner* and the *first responder* in the IOR.

What is Doctrine?

The word 'doctrine' has originated from the Latin word '*doctrina*', which implies "*a code of beliefs*" 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 school". It thus provides a framework of beliefs and teachings that guide a group in its actions.

Doctrine flows from 'concepts'. A concept is an innovative but tentative idea to solve a problem based upon inferences drawn from observed facts. Concepts when battle proven (or proven in exercises) would migrate to becoming doctrines. Military doctrines can thus be understood as sets of proven concepts and principles related to the development and employment of military power. Maritime doctrines fulfill this function primarily in the maritime domain, *at* and *from* the sea by considering all elements that constitute a nation's maritime power (for e.g. sea-based and seabed resources, space, shipping, fishing, ports, maritime infrastructure, ship building/repair, navy etc.).

Military organisations and the nature of military operations relate to group, rather than individuals or activities.³ Their functioning is dependent upon a proper and common understanding of collective activities and adherence to uniform procedures and practices. A doctrine must guide the military force in the way it organises, equips, trains, fights and sustains itself in pursuit of national objectives. Thus, it acts as a central nerve that links all facets of military power by providing a common reference point, language and purpose that guide military forces in their actions. There will, necessarily, be multiple doctrines for a military force, each related to various facets and levels of application of military power. However, every doctrine must, in its respective sphere, be able to provide a common, authoritative approach to warfare and the employment of military power and be in synergy with other related doctrines. While military doctrine provides a shared way of thinking about military issues, it does not direct how a problem is to be solved. The 'how' is answered by 'strategy'.

Doctrine, while enduring, is not dogma and remains flexible to changes in operating environment due to interplay of new technologies and political direction. Deviations from the doctrine may be warranted in accordance with the prevailing situation, but should be based on proper appraisal, knowledge and experience.

National Security Concepts and Military Doctrine

National values evolve from a nation's culture and history and are based on enduring social, religious, moral and ideological principles. The **National Aim** is derived from the Constitution of India and amplified through political directions. The mix 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 guideline for development of strategies in the exercise of national power.

National Strategy is the plan for employment of various tools of national power in accordance with the national security policy, to achieve the national security objectives in support of national interests. At times, a formal articulation of national strategy/policy, or even national security objectives and interests is not available in the public domain. This however does not necessarily imply that these do not exist or are not sufficiently understood. Indeed, such articulation by many nations is itself a relatively recent phenomenon. The National Strategy provides the basis for further development of the **Military Strategy**, with its constituent Joint, Land, Maritime, Air, Space, Cyber and Cognitive Strategies.

The conceptual framework for formulation of joint and single service military strategies is provided by the underlying joint and individual military doctrines. Military doctrine lays down the precepts for development and employment of military power. This guides military planners in devising their respective strategies in support of national interests and national security objectives, within the overarching national strategy.

The Joint Doctrine for the Indian Armed Forces was published by the Headquarters, Integrated Defence Staff in 2017. Indian Maritime Doctrine 2025 (NSP 1.1) leans on and draws directions from the Joint Doctrine, even while it is focused on the unique nature of the maritime domain and facets of naval power.

National Aim and Interests⁴

National Aim

The national aim, as derived from our Constitution and strategic vision enunciated by our leadership over the years, is directed towards 'Comprehensive National Development'. Our national aim is to create a conducive external and internal security environment for unhindered and inclusive socio-economic development.

National Interests

India's national interests are derived from the need to protect and preserve our core values as enshrined in our Constitution which are summarised as follows:-

- To preserve the sovereignty, unity and territorial integrity of India.
- To preserve the democratic, secular and federal character of the Indian Republic.
- To safeguard India's existing and emerging strategic, political, economic and military goals in consonance with the National Aim.
- To ensure a stable, secure and peaceful internal and external environment conducive to unhindered economic growth and prosperity.
- To contribute towards promotion of international peace and stability.

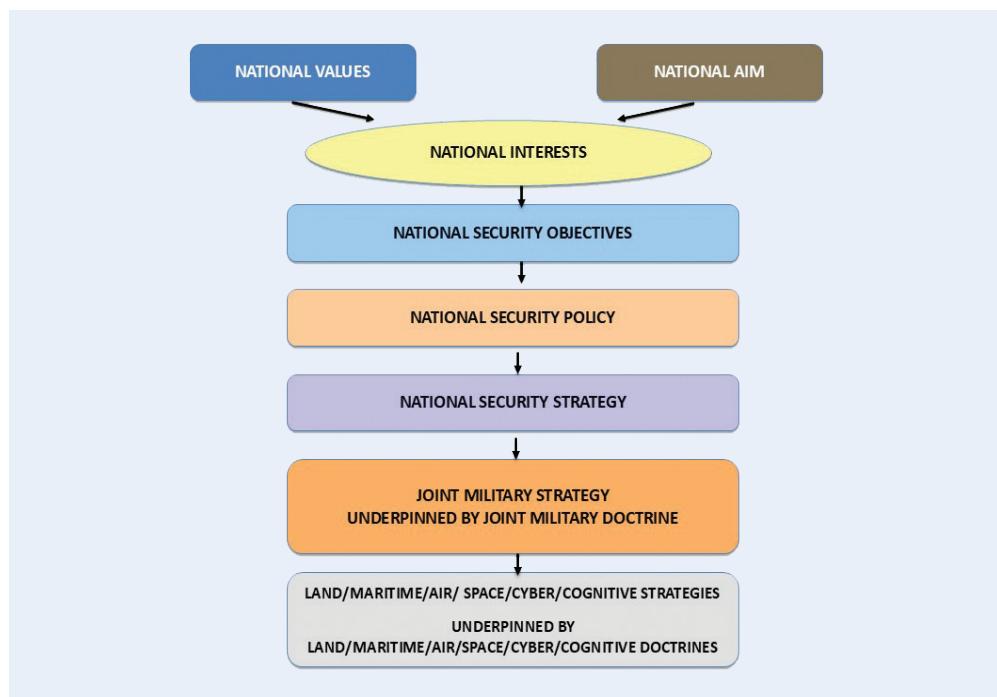


Diagram 1.1 - National Security Concepts and Doctrines

National Security⁵

National security implies the protection, preservation and promotion of our national interest against internal and external threats and challenges.

National Security Objectives

National security objectives flow from and are designed to safeguard our national interests. National security objectives, like interests, influence our political, military and economic dimensions. India's national security objectives are:-

- Maintain a credible deterrent capability to safeguard National Interests.
- Ensure defence of national territory, air space, maritime zones including our trade routes and cyber space.
- Maintain a secure internal environment to guard against threats to our unity and development.
- Expand and strengthen 'Constructive Engagement' with other Nations to promote regional and global peace and international stability.

National Security Policy

National security policy is based on our national security objectives and the components of national power, weighed against the prevailing and assessed future domestic and global environment. It shall entail inherent right of self-defence, possession of deterrence capability, strategic autonomy, self-reliance, cooperation, security and friendly relations with countries.

Levels of Doctrine

Apex doctrines related to national security and military power offer precepts for the development and employment of such power at the strategic, operational and tactical levels. Accordingly, doctrines have distinct levels, which broadly coincide with the levels of strategy and warfighting, viz. national-strategic, military-strategic, operational and tactical.

National Strategic Level

National strategy is determined by the Union Cabinet and draws upon the National Security Policy. It aims to synergise all components of national power, including political, diplomatic, economic, social and cultural, technological, legal, military and informational as well as geography and natural resources, towards safeguarding national interests and achieving national security objectives. The national strategy entails coordinated employment

of all elements of national power. Doctrine at this level offers precepts for the development and employment of national power. India's Nuclear Doctrine⁶ is an example of a national strategic level doctrine that guides our nuclear strategy.

Military Strategic Level

Joint military strategy is a sub-set of the national strategy for exercise of national power. It governs the development and employment of military power, along with the respective land, maritime, air, space, cyber and cognitive strategies. Military doctrine provides the conceptual framework for understanding the role, scope and application of military power and underpins the formulation of military strategy. The military strategic level is the highest level of doctrinal writing in the defence forces of India. It codifies the concepts and principles that guide the application of military power in the pursuit of national interests, including for the planning and conduct of war. *Kautaliya's 'Arthashastra'*, *Sun Tzu's 'Art of War'*, *Clausewitz's 'On War'* and *Julian Corbett's 'Some Principles of Maritime Strategy'* may be considered as doctrines that are mostly at the military strategic level.

Operational Level

Military doctrine at the operational level guides employment of military force in the preparation and execution of campaigns and major operations within defined geographical theatres. It describes the concept of operations and the use of Operational Art to attain operational objectives within the broader national and military strategic aims. The Joint Doctrine of the Armed Forces and the Indian Maritime Doctrine are such doctrines and they bridge both the military- strategic and operational levels.

Tactical Level

The tactical level involves employment of military weapon systems and platforms in physical combat. Tactical doctrines comprise a framework of principles, practices and procedures for efficient exploitation of military hardware and optimum application of combat force. Tactical doctrines are issued as general fighting instructions for various tactical situations, for exploitation of specific naval combat systems and platforms, etc.

Maritime Power, Strategy and Doctrine

Maritime Power is the ability of a nation to use all available means connected to the seas to safeguard and progress its national interests. The components of a nation's maritime power encompass the use of naval forces, other maritime security forces or agencies, merchant shipping, maritime and offshore assets and international maritime cooperation. As such, a nation's maritime power informs

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 ambit of the apex national strategy and/ or policies.

Maritime Doctrine provides the conceptual framework for devising such a maritime plan or strategy, seeking to develop and employ maritime power in pursuit of national objectives and interests.

Navy and Maritime Doctrine

The navy is the principal instrument and manifestation of the maritime power of a nation-state. The *raison d'être* of a navy is to safeguard the nation's use of the seas for its legitimate sovereign purposes, whilst concurrently guarding against inimical use of the sea by others. The Indian Maritime Doctrine, therefore, focuses on that **military** dimension of maritime power, which enables use of the seas by all stakeholders and protects the nation from external threats.

Indian Maritime Doctrine

Indian Maritime Doctrine 2025 (NSP 1.1), deals specifically with the concepts and principles of employment of India's naval power, across the spectrum of conflict. It reflects on the concepts, characteristics and context for employment of combat power *at and from* the sea. It is aimed at generating a common understanding among all stakeholders in the development and employment of India's maritime military power, so as to unite their actions in support of India's national interests and national security objectives.



Tactical issues have been deliberately kept outside the purview of this doctrine, as several other naval publications comprehensively address these aspects. Hierarchically, NSP 1.1 is the capstone doctrinal publication for the Indian Navy (IN), which should serve as the 'guiding light' for the Service.

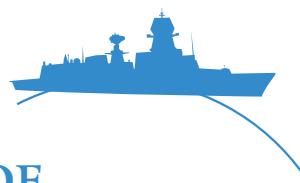




2

THE SPECTRUM OF CONFLICT





2

THE SPECTRUM OF CONFLICT



“कर्मण्यकर्म यः पश्येदकर्मणि च कर्म यः।
स बुद्धिमान्मनुष्येषु स युक्तः कृत्स्नकर्मकृत्॥”

He who sees inaction in action,
and action in inaction, is the wise one among men.
He is the true performer of all actions.

- Bhagavad Gita 4.18



Preamble

 The concepts of peace and war are particularly complex with interleaving layers of subtlety and overlap. This chapter covers the peace-war continuum and then contextualises this continuum with the spectrum of conflict that ranges from Cooperation (at the lower end) to Conflict (epitomised by war at the extreme end of the spectrum). Employment of naval forces in the spectrum of conflict differs in scope and scale depending upon the outcomes intended. It is important to note at the outset itself that the dividing line among the echelons of the peace-war continuum and conflict spectrum are not always distinct, due to the inherently complex and fluid nature of geopolitics and inter-state relations. For example, assistance to or abetment of internal violence by a foreign state could lead to inter-state armed conflict below the threshold of war. The attendant difficulty in classifying the conflict is accompanied with major politico-strategic consequences, particularly in terms of deciding the nature of military response.

Peace-War Continuum

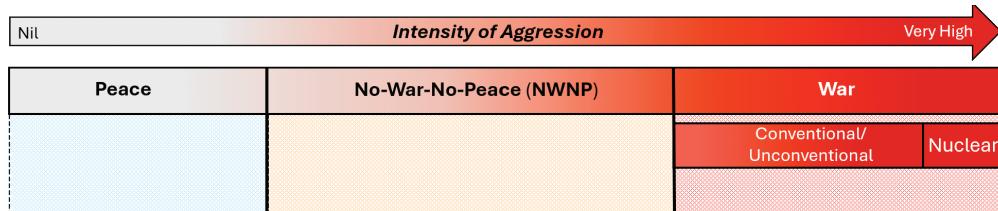


Diagram 2.1 – Peace-War Continuum

Peace

Peace refers to a condition wherein there is absence of violence. Maintenance of peace, internally and externally, is an enabling condition for national growth and development and thus among the foremost objectives of the government. While this is primarily done through social, economic and diplomatic strategies, military power also plays an important and supportive role. Military power, first and foremost, acts as a deterrent against adversaries harbouring ill-will and if peace is endangered, military power can be used to restore peace on terms favourable to our own national interests.

Peace is closely interconnected with the concepts of **security** and **stability**. Promoting peace can play a significant role in ensuring both security and stability.

Security refers to a condition where a state and its citizens have *freedom from threat of violence or other forms of harm*. The degree of security is proportional to the level of such freedom. The retention of state control over the instruments of violence and development of state capability, to prevent or counter the use or threat of use of violence from internal and external actors, is necessary for higher security. Military power is a central factor in the attainment of desired level of security.

Maritime Security relates to the freedom from threats at or from the sea, against the nation's maritime interests. The threats to maritime security include those from war, maritime terrorism, maritime crimes, environment and those requiring Humanitarian Assistance and Disaster Relief (HADR) etc among others.

Stability refers to a condition where a state's elements of national governance remain effective and strong, resulting in a sense of security and well-being among the citizens of the country. A stable nation is marked by a smoothly functioning political system, effective national institutions and policies that consistently meet the expectations of the citizens. Violence if experienced, is restrained at a sufficiently low level that does not obstruct the pursuit of development and progress by the state and the way of life of its citizens.

Security and **Stability** are interconnected concepts that are complementary and not exclusive. It is crucial to understand that an impact on one will have a consequential impact on the other.

Peace, Security and Stability are vital national interests, as they are primary conditions governing a nation's survival and development. Military power plays a central role in the national strategy developed towards attainment of this prime objective. During peace, the security and stability of the nation are at the highest levels.

"A good Navy is not a provocation to war.
It is the surest guaranty of peace."

— Theodore Roosevelt

No War No Peace (NWNP)

NWNP refers to a degraded security situation vis-à-vis another state, group or internally, that is characterised by elevated levels of distrust, cross-border/ internal violence with persistent threat of escalation necessitating a higher state of military/ armed forces readiness, which is neither a state of war nor a stable peaceful environment.

An NWNP situation is marked by the necessity to control the behaviour of the adversary by use of measured responses/ actions utilising all lines of government effort, including the military and employment of armed violence when necessary. Although the term *No War No Peace* appears ambiguous, certain defining criteria of such a situation – though varying in intensity – are as under:-

- Marked uncertainty and tension in the security situation.
- Competition, confrontation and low-level armed conflict is pervasive. Hence, creating concerns of escalation into a full-scale war (inter-state or internal civil war).
- Heightened international concern over the deteriorating or poor state of the security situation.
- With specific reference to an inter-state centred NWNP situation:-
 - Military forces in a prolonged heightened state but not mobilised, such as for war.
 - Recurring incidents of cross-border tensions and confined incidents of violence below the threshold of war.
 - Harassment, shadowing, buzzing by aircraft, deliberate close-quarters manoeuvres between naval platforms at sea.

- Downturn in diplomatic relations, marked by acrimony, distrust and strong language.
- Actions and counter-actions in commerce, trade and information spheres, especially cyber space.
- NWNP phase is not defined by duration and can be indeterminate or long term.
- Security and stability of the nation is imperilled by the elevated state of tensions which can also have an impact on regional security and stability.

War

War, distinguished from civil war and NWNP, is a large-scale armed conflict sanctioned by a nation-state against another nation-state or non-state actor. A war is marked by significantly higher level of violence and destruction to achieve politico-military ends. The term **Civil War** is used to describe a severe state of internal conflict, where large sections of the populace are engaged in a violent struggle, with or without external influence and interference. The conflict is generally limited to the geographical boundaries of the afflicted state.

Although the *nature of war* has remained constant, the *character* of war evolves due to various factors such as, technology, culture, political systems, economic



conditions and international norms. Some defining characteristics of war are as under:-

- War is sanctioned and approved by the political leadership, although a state of war may not be officially declared by the government.
- Prosecution of war objectives is supported and led by the apex politico-military leadership.
- Involves large-scale mobilisation and employment of the nation's defence forces and application of lethal military power.
- Involves the utilisation of all elements of national power and resources to support the politico-military objectives of the war.
- Wars are characterised by significantly higher levels of violence, destruction, casualties and human suffering.
- Wars not only seriously undermine national security and stability but also regional or global security and stability.

There has been a reluctance to use the term '*war*' for a variety of reasons ranging from legal provisions requiring formal declaration for the conflict to be termed as war, to the possibility that such a classification could itself lead to an escalation. On the other hand, terms such as 'border clashes', 'armed interventions', 'precision/surgical strike', 'limited strike' etc. are more appropriate to describe limited military action as the scale, scope, duration and intensity of the action is less than war. These limited offensive actions fall under the NWNP segment of the Peace-War continuum.

War and *warfare* are related concepts. War is a state of fighting, warfare describes the methods – ways and means – in which the war is fought. Understanding of the term warfare for the sake of specificity in this doctrine has been limited to association with war and not with broader forms of conflict like economic warfare, psychological warfare etc. When describing a war, it would be appropriate to classify it with the dominant form of warfare employed. The types of war – based on the most prominent and consequential ways and means of warfare employed are summarised below:-

Nuclear War is one where nuclear weapon(s) has (have) been used in combat. Threats or signalling use of nuclear weapons does not constitute a nuclear war. To date, World War-II (nuclear bombing of Hiroshima and Nagasaki on 06 and 09 Aug 1945 respectively) is the solitary example of a nuclear war.

Conventional War is fought by regular armed forces of the State employing traditional 'ways' and 'means' that are recognised as lawful under international law. It excludes ways and means of warfare prohibited by international law such as use of chemical or biological weapons. A new tactic ('way' or

‘method’) employing conventional assets (‘means’) does not itself render a war unconventional. The Indo-Pak 1971 war was a conventional war.

Unconventional War is characterised by unconventional ‘ways’ and ‘means’ such as use of irregular forces, emerging/ new technology and departure from the norms of international law or combination of above thereof. While typically adopted by weaker forces to offset the disadvantage in conventional combat capability, peer competitors may also engage in unconventional warfare by employing novel technologies. The Viet Cong in the Vietnam War (1965–1975) and the Afghan mujahideen in the Soviet-Afghan War (1979–1989) each waged unconventional (guerrilla) wars against U.S. and Soviet forces, respectively.

Spectrum of Conflict

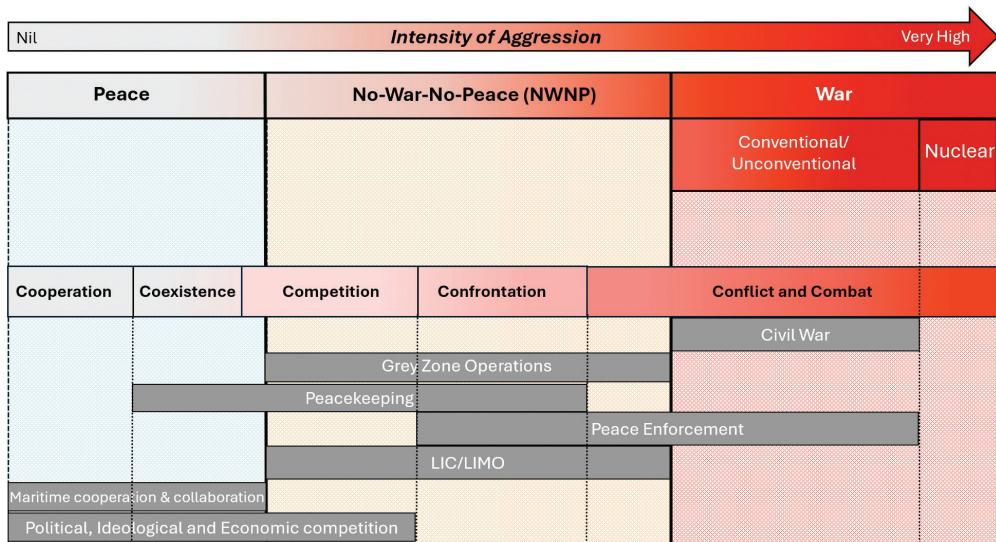


Diagram 2.2 - Spectrum of Conflict

Cooperation and **Coexistence** are states of relationship which may co-exist between nation states while they seek to further their respective national interests. High level of inter-state cooperation and peaceful coexistence conform to the state of peace and are most desirable for Security and Stability. These two states of relationship align most closely with the state of peace in the peace-war continuum.

Competition is a quest by States to seek and gain advantage in international relations. This quest may include challenging the existing instruments for conduct of international relations including trade, alliances or partnerships and various other instruments of power, to gain advantage while not resorting to violence.

As Competition intensifies, it may shift to a level of **Confrontation**, particularly where cooperative frameworks, dialogue and mutual trust are absent or give way. Confrontation is manifested initially at the political or diplomatic level and may escalate to the use or threat of use of military force. Confrontation has a larger role for the military than Competition, including resorting to employment of violence by State and non-State actors. Competition and in particular Confrontation, closely links with an NWNP situation. The role of conflict (use of violence) becomes apparent in a state of Confrontation.

Conflict is a broad meaning word that refers to a struggle, disagreement or clash between opposing parties, which may arise from differences in interests, values, goals or perceptions. In an overarching sense, conflict may be violent or non-violent. In the context of this doctrine, conflict is understood to be the use of armed and organised violence that has the potential and intention to cause physical injury and destruction. It is important to understand that all wars are armed conflicts, however, all armed conflicts need not constitute a war. An armed conflict may take shape in overt and covert ways and employ direct or proxy means. The ways and means of conflict govern its nature, which can be categorised in terms of intensity.

Low Intensity Conflict (LIC) is a politico-military confrontation between contending States or groups, below conventional war and above routine peaceful competition among States. It is generally carried out by covertly organised forces operating in small groups, which mostly employ means to inflict confined and limited violence. LIC may be waged against symbols of state sovereignty or the common people and are often characterised by their political, social and economic objectives rather than military objectives. It includes insurgency, guerrilla warfare and terrorism. Apart from Civil War, internal conflicts usually involve LIC.

In the maritime context, **Low Intensity Maritime Operations (LIMO)** addresses low intensity threats, without escalating to significant mobilisation or preparation for combat. It normally encompasses actions taken to counter piracy, terrorism, insurgency and includes maritime interdiction and maritime law enforcement operations, aimed at maintaining good order at sea.

High Intensity Conflict entails level of aggression at significantly higher scale and tempo, resulting in greater violence, destruction and casualties. High intensity conflict correlates strongly with war when military forces are extensively deployed and at the extreme level may, but not necessarily, culminate into nuclear war.

Conflict waged by a regular military force of a state is termed as **combat**. The purpose of combat is to help achieve political objectives of the state by the use of force.



Increasing relevance and role of Space, Cyber and Cognitive domains in military operations often in conjunction with the traditional domains of Land, Sea and Air, are changing the character of war. In addition, there has been a marked proliferation of new concepts of warfare, which is likely to endure in the near future, for e.g., several conflict-centred terminologies, such as Irregular Warfare, Hybrid Warfare, Grey Zone Operations (GZO) among others have gained prominence in the academic and strategic lexicon. These terms tend to be used interchangeably and can thus lead to doctrinal ambiguity. This doctrine intends to clarify the meaning of Irregular Warfare, Hybrid Warfare and GZO recommending that the naval practitioner ensures that any new/other concept or term being introduced is sufficiently disambiguated.

Irregular Warfare is considered synonymous with Unconventional Warfare. **Guerrilla Warfare** is a subset of land-based Unconventional Warfare and is usually carried out by non-state actors, using small, irregular forces against stronger forces and is based on intimate knowledge of the local terrain and often with the support of the local population.

Hybrid Warfare combines conventional and unconventional methods and means, coordinated in multiple domains, in NWNP and conflict situations, utilising both military and non-military capabilities to effect multi-dimensional outcomes for achievement of objectives. Such strategies are often designed to be ambiguous and exploit the vulnerabilities of an adversary across multiple domains, complicating

the ability to counter the threat. It could involve, for example, cyber attacks, disinformation, covert action and economic disruption against an opponent.

Grey Zone Operations (GZO) take place in the zone of NWNP with an aim to reduce the relative time and cost of achieving significant objectives, by circumventing existing deterrence mechanisms, or increasing the relative cost of conventional engagement in that zone for the adversary. GZOs are characterised by an *ambiguity about the legitimacy of the action, or its perpetrator*. Use of proxies, skewed narratives and different interpretation or exploitation of existing rules and norms are usually adopted to achieve ambiguity, whilst endeavouring to remain below the threshold of armed conflict.

Terrorism is a deliberate and systematic unlawful act of violence committed against people or property, generally non-combatants. As the name implies, terrorist acts are meant to spread terror and fear among the populace so as to coerce or intimidate governments and societies, often to achieve political, religious or ideological objectives. Terrorism is generally carried out by non-state actors, often with sponsorship by inimical state agencies.

Intervention involves entering the territorial space of another state for conflict prevention, peacemaking, peace enforcement or peace building. An armed intervention is one that involves the use, possible use or threat of use of any or all components of a nation's defence forces. Intervention may be carried out by a state independently or as part of a collective grouping. These could be either in keeping with or in contravention of international law or sanctioned by the United Nations Security Council or when formally requested by a nation's political leadership.

Levels of War⁷

There are four traditional levels of war addressed by national and military planners for determining the quantum and manner in which national power in general and military power in particular, is to be applied. These are grand/ national strategic level, military strategic level, operational level and tactical levels of war.

Grand/ National Strategic Level

The grand/ national strategic level is, in essence, the political executive leadership of a nation. At this level, all resources of the nation (diplomatic, military, economic, information, technological, etc.) are directed towards attainment of national security objectives. Decisions at this level, on the planning and prosecution of war and the use of force, are taken by the Cabinet Committee on Security (CCS), with inputs from the National Security Council (NSC), Intelligence agencies, various government ministries (especially Defence, External Affairs, Home and Finance) and the armed forces.



Military Strategic Level

At the military strategic level, the national military leadership, headed by the Chief of Defence Staff (CDS), determines the manner of employment of military power in accordance with the national strategic decisions. This is done by the CDS led COSC which determines the military-strategic objectives and the military strategy required to achieve the political aims of the war. There is necessarily a close inter-relation and co-ordination between the national and military strategic levels of war. Political strategy should be in synergy with the military capability and situation. Similarly, military objectives and strategy should lead to attainment of the political objectives. In practice, political and military strategies may require mutual adjustments to keep them synergised.

Operational Level

The operational level is directed by the Commanders of defence forces, primarily the Commanders-in-Chief of geographic single and joint Commands. At the operational level, campaigns and major operations are planned, conducted and sustained to accomplish military-strategic objectives within dimensions and areas of operation. The orchestration of military activities at this level is termed as Operational Art, which provides the link between the setting of military strategic objectives and the tactical employment of forces.

Tactical Level

The tactical level is the lowest level of war. It is at the tactical level that the naval battle and engagement occurs, involving the active direction of military resources and application of firepower or so to say, '*where the actual combat takes place*'. The role of the Commanders at this level is to achieve the assigned tactical objectives that in turn contribute to the accomplishment of operational missions and realisation of the higher commander's intent.

The boundaries between individual levels of war are not constant and often overlap. This is especially so in the maritime domain, where tactical actions may lead to a strategic effect. An instructive example is the Battle of Midway (WW-2) when in a matter of minutes, commencing about 1025 hours on 04 Jun 1942, three Imperial Japanese Navy aircraft carriers were fatally damaged and later in the evening a fourth carrier as well. The Imperial Japanese Navy never recovered from this decisive loss in a tactical level action. The inherent attributes of maritime forces, particularly **Reach, Versatility and Presence**, play a vital role in precipitating strategic impact as the physical presence of formidable maritime forces in an area is representative of national interest and political intent.

Domains of Warfare

Domain is defined as a "*critical macro manoeuvre space whose access or control is vital to the freedom of action and superiority required by the mission*". The domains of warfare include **Land, Sea, Air, Space, Cyber** and **Cognitive**. The degree of control established over these domains will dictate the capability and degree of freedom of military forces for conduct of military operations. If one domain is compromised or disabled, it can have a cascading effect that disrupts operations across other domains. For example, disruption of satellite services in the space domain can impact communication, navigation and targeting.

Modern warfare increasingly relies on coordination across multiple domains for ensuring seamless and effective operations. **Multi Domain Operations (MDO)** refers to the coordinated, integrated and synchronised employment of military forces and non-military national capabilities across Land, Sea, Air, Space, Cyber and Cognitive domains. Each of these domains have distinct characteristics, operational tempos and challenges. MDO seeks to create converging effects, by integrating capabilities across these domains by leveraging Artificial Intelligence (AI) and Machine Learning (ML) and through network centric operations.

Domains of warfare should not be confused with dimensions of warfare or operations that relate to the scope, aspect and size (extent) of impact of warfare. A war can have multiple dimensions of impact/ effect, such as economic sanctions, environmental impact, shaping of diplomatic alliances, international trade etc.

Purpose of War

The purpose of war and use of military force is always political, not military. The political objectives of the war govern determination of the national strategy for prosecution of the war, including “*where*” and “*how much*” military force is to be used. Military objectives are defined in support of the political objectives. The military strategy is shaped for attainment of these objectives, in keeping with the national strategy and determines “*what*” and “*how*” military force is to be used. It follows that there must always be synergy between the political and military objectives and the national and military strategies.

The aim in any war is determined by a paramount political objective and the enabling military objectives. Victory in war is measured by attainment of the political objective of the war, not by the number or nature of military victories. It is entirely possible to lose the war despite attaining military objective and winning military engagements, especially if there is divergence between the political and military objectives, or disparity between the national and military strategies. The use of military force, therefore, should flow from and be in accordance with the overarching national security policy and the political objectives.





3

CONCEPTS OF WAR



3

CONCEPTS OF WAR



हतो वा प्राप्यसि स्वर्गं जित्वा वा भोक्ष्यसे महीम्।
तस्मादुत्तिष्ठ कौन्तेय युद्धाय कृतनिश्चयः॥२.३७॥

Slain, you will obtain heaven; victorious, you will enjoy the earth;
therefore, stand up, O son of Kunti, resolve to fight.

- Bhagavad Gita 2.37



Preamble

 Concepts of war have emerged over millennia and continue to be refined. The foundational concepts of war – in terms of its nature (unchanging) and character (changing) – have been clarified in the Peace-War continuum in Chapter 2. It is important for the naval practitioner to imbibe the attributes of war and grasp the concept of utility of military force without employment of offensive lethal power or violence. This essentially refers to the concepts of coercion and deterrence that are covered in this Chapter. That the possession of strong naval capability itself deters adversaries and non-State inimical actors to escalate tensions or undertake hostile actions is important to grasp. Finally, men in uniform – exemplifying the values of Duty-Honour-Courage of the Indian Navy – need to scrupulously adhere to the Laws of Armed Conflict that work towards fighting a war justly, minimising the deleterious impact of war and suffering of the innocent, to finally effect ‘peace’ that sustains once the fighting ends.

Attributes of War

War and armed conflict are marked by certain well-recognised attributes, whose salient features are discussed below. These attributes emanate from the core nature of war that Clausewitz explained as three enduring, though paradoxical tendencies:-

- Primordial violence, hatred and enmity.
- Chance, luck and probability.
- Element of subordination as an instrument of policy.



Friction

Friction is described as the resistance to motion when one surface slides over another. Clausewitz alluded to the fact that "*Everything is simple in war, but the simplest thing is difficult*". These difficulties are a result of 'friction'. In war, the execution of military activities usually experiences difficulties that did not exist in planning. These are due to the environment of war, in which there is external resistance by the enemy and internal resistance from own weaknesses. This is termed as 'friction in war'. Friction can be caused by unanticipated enemy action and/or own inability to cope with the stress of war and changes in situation. Friction can be reduced by robust systems, training and procedures, but cannot be entirely done away with. It must be catered for both in the preparation and prosecution of plans to minimise its effect.

Fog of War

There is intrinsically an atmosphere of uncertainty and confusion generated in wartime due to incomplete, inaccurate or contradictory information and/

or knowledge of events. This realm of uncertainty is termed as '*fog of war*'. Improvements in technology, especially Intelligence, Surveillance and Reconnaissance (ISR) have helped in reducing the fog of war at the tactical level to a considerable extent. However, the ability to process vast amount of information and disseminate actionable output with sufficient rapidity and accuracy, remains a challenge. ISR is particularly challenging in the relatively opaque underwater sub-domain. Moreover, *fog of war* can precede commencement of hostilities. For instance, strategic deception can lead to uncertainty and dilemmas, for example, conduct of a large-scale military exercise during heightened tensions near the national border or the deployment of a large naval force in a contested sea area. In addition to technological solutions, fog of war can be reduced by constant preparations for contingencies and the ability of the leadership at all levels of war to manage change.

Fluidity

Each sequel and stage in a conflict is unique, requiring its own approach and action. At the same time, no stage can be viewed in isolation. Rather, each one merges with others that precede and follow it. This provides a continuous, fluctuating fabric of activity called '*fluidity of war*'. This fluidity offers both fleeting opportunities and unforeseen reversals, inherent in the factor of change and linked nature of events in war. Success depends in large part on the ability to adapt to a constantly changing situation, especially in creating and exploiting fleeting opportunities. This requires a high state of readiness and training for all possibilities, with an aggressive mindset that seeks to quickly recognise opportunities and rapidly seize and hold the initiative.

Disorder

In an environment of friction, fog and fluidity, war gravitates naturally towards disorder, which cannot be completely eliminated. In the heat of battle, plans will go awry, instructions and information will get garbled or unclear and may get misinterpreted, communications will fail and mistakes and unforeseen events will be commonplace. It is precisely this natural disorder that creates conditions ripe for exploitation by a ready and opportunistic force. A better trained force with more battle conditioning is placed better to maintain its cohesion and focus and is also less susceptible to disorder. On the other hand, it can use its own training and cohesion to build and maintain a high tempo of operations to create and exploit disorder in the opponent.

Violence and Danger

The means of war is force, applied in the form of organised violence. It is through the use of violence or the credible threat of violence that a nation compels its adversary to bend to its will. While its magnitude may vary, violence *per se* is an integral element of war. The determined use of violence and constant exposure to danger and suffering is the very essence of warfighting. Wars are finally won at the strategic level, but the victory is delivered by a series of tactical engagements that involve use of and exposure to, high amounts of violence. This needs to be imbibed in the planning, preparation and prosecution of war at all levels.

Destruction and Attrition

The use of military force to physically destroy an opponent's warfighting capability, including military equipment, troops, bases, command, control, communications and other enabling infrastructure, is termed as *destruction*. It is the natural effect and consequence of physical combat. Physical destruction is also feasible by exploiting the cyber domain. Offensive cyber operations employ customised malware and targeted attacks to physically destroy or damage computer-controlled infrastructure, equipment and systems etc.

A concept related to destruction is *attrition*, which can be both physical and non-physical. Attrition is the partial and progressive destruction of the opponent's military forces, thereby steadily reducing his war-waging ability. Offensive actions by the navy or joint forces, including offensive cyber operations, leads to physical attrition. Likewise, sustained information operations *attrit* the will and spirit of the enemy. Without attrition of either the enemy's physical military assets or intangibles like popular support or political will, the ultimate objective of winning a war is likely to be elusive.



Concepts Related to Use of Force

The nature of a state's relationships dictates the corresponding use of force. To sustain cooperation and coexistence, measures such as diplomacy are employed. The application of force by a nation on the other hand, can range from persuasive diplomacy to outright destruction, as illustrated in Diagram 3.1.

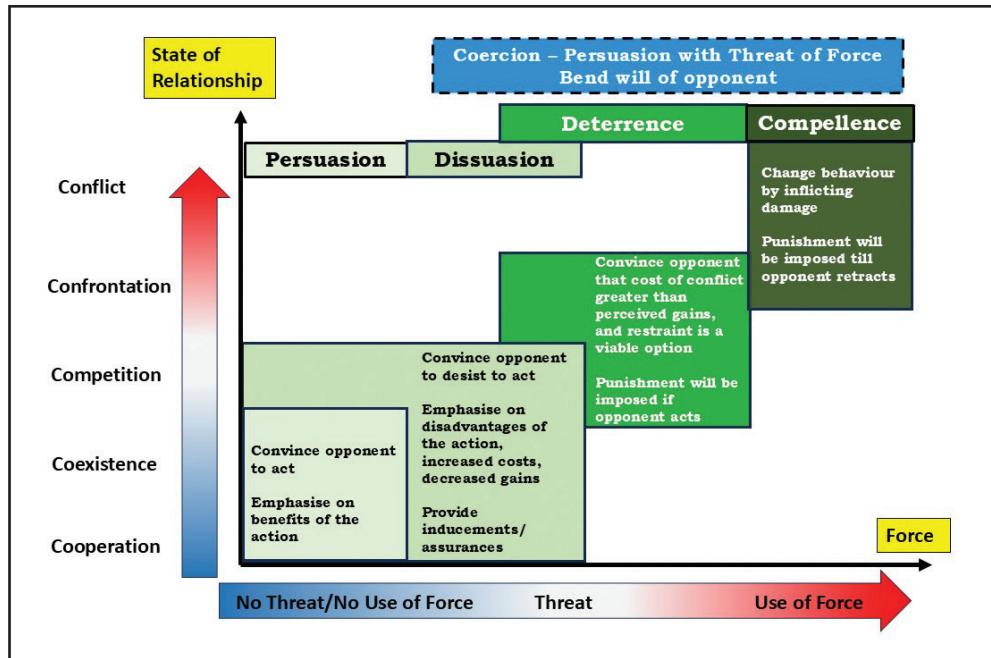


Diagram 3.1 – State of Relationship vs Application of Force

Coercion

The threat of use of force against an opponent to bend his will in order to achieve acquiescence is termed as *coercion*. The force is kept poised and ready while psychological pressure is built up on the opponent that force could be used so as to signal capability and intent aiming to shake the opponent's confidence and will to resist. Coercive pressure may be calibrated with the pressure eased or withdrawn upon acquiescence. Traditionally, naval forces have been effectively used as tools of coercive diplomacy, as they signal political intent and military capability without being unduly offensive since they operate in international waters and can be rapidly deployed and withdrawn. Coercion is normally felt at strategic level, even if it is applied at operational or tactical levels.

Compellence

The use of force to induce an opponent to change behaviour is termed as Compellence. It entails *infliction of escalatory punishment* upon the opponent by effecting damage and destruction, with the threat of continued use of a superior force till acquiescence to the demands made. Compellence may be carried out at the tactical level, e.g. to stop or divert a ship or aircraft; at the operational level, e.g. to effect surrender of the opposing force; and even at the strategic level, e.g. to make the other state alter its policy or action. Compellence requires superior force to be brought to

bear on the opponent in escalatory steps and clear demands communicated on what action is required of the opponent to stop the use of force. This entails a clear plan on the series of escalatory steps and stages for increasing pressure on the opponent.

Deterrence

Deterrence is preventing aggression by convincing a potential aggressor that the cost of coercion or conflict would be more than its likely gains. In other words, the aggressor must be convinced that the cost-benefit ratio of aggression is to his detriment. This can be done either by raising the costs or by denying the gains. The former is known as '*deterrence by punishment*', while the latter is termed as '*deterrence by denial*'.

Deterrence by punishment requires a strong retaliatory capability and a politico-military posture that assures the potential aggressor of unacceptably high costs.

Deterrence by denial entails the ability and intent to deny victory to the enemy, regardless of the cost.

Deterrence can also be defined in terms of posture, viz. active or passive. *Passive deterrence* is implicit in the maintenance of military capability and strategy, while *active deterrence* requires a more overt posture in terms of deployment and readiness.

In all cases, deterrence needs to be *credible*, i.e. the potential aggressor should be convinced that the opponent's military capability and political will are adequately robust to hurt him badly or to thwart victory. In the nuclear era, the essence of deterrence remains the same. By virtue of its stealth and attendant survivability of second-strike capability, a nuclear powered ballistic missile submarine (SSBN) is particularly suited for *nuclear deterrence*.

In essence, deterrence is a fundamental concept in the use of force. Among all national maritime agencies, the Navy stands out as the only one with extensive lethal and destructive power. This power functions as a strategic deterrent, contributing to preservation of peace and mitigating the risk of escalation.

Persuasion and Dissuasion

Persuasion is convincing another state, by diplomatic means and without threat or use of force, to carry out certain actions that are in its own interests, by emphasising the benefits of the action to that state. *Dissuasion* is convincing another state, by diplomatic means and without threat or use of force, to desist from carrying out certain actions that are inimical to our interests, by emphasising the disadvantages of the actions to that state. Given its inherent attributes and roles, naval power is ideally suited for persuasion and dissuasion.

Disruption

The inability of a protagonist to function cohesively in combat as a result of actions by the opponent is termed as *disruption*. It can be caused by destruction or attrition of the adversary's combat cohesion, by targeting the component elements, such as command and control, communications, logistics, surveillance, network centric operations, etc. Naval power is capable of not only disrupting the adversary's warfighting potential through economic warfare, but also severely dislocating its military-strategic infrastructure in the littoral areas through strikes ashore. Disruption can overload the opponent's ability to cope with the change and break the opponent's Information-Decision-Action (IDA) cycle.⁸

Escalation

Increase in the intensity of conflict during the course of an operation is termed as *escalation*. It can be evinced by change in the ways, means and ends of use of force, such as increase in the quantity and type of forces used and their targets. *Horizontal escalation* entails an increase in the geographical area of operations, while *vertical escalation* indicates a higher level of violence. There is inherent scope for escalation whenever force is used, as the equilibrium of force is not determined by one side alone. It is equally dependent on the response of the opponent (including lack thereof), such as to Compellence, prompting either side to increase the level of force used to attain its objectives.

Conflict Termination

Conflict termination is a strategy to bring war to most favourable conclusion. Military plans and operations serve to support the attainment of political objectives. Therefore, these should focus on achieving the political objective by establishing conditions necessary to sustain the objective following conflict termination. The terms and conditions under which a conflict is terminated must address our underlying cause(s) of war. This calls for planning based on the desired end state, ensuring that the long-term political objective of the post - conflict environment is preserved following conclusion of conflict. It should ensure that the terms and conditions imposed on the adversary to cease hostilities are enduring. Conflict termination is a facet of operational art. However, if the duration and cost of war escalate, termination assumes strategic proportions. Timing of terminating a military operation and to preserve achieved advantage is a component of both strategy and operational art.

Confidence Building Measures

Confidence Building Measures (CBMs) allow adversaries to communicate and exchange information in ways, which reassure each other and obviate the need for

a military aggression or escalate an ongoing conflict to a higher level. Mutually agreed treaties with provisioned clauses for disclosing force movements, exercise schedules and even supervision in certain cases form the basis of CBMs.

Laws of Armed Conflict (or International Humanitarian Law)

The conduct of war has been governed by laws from ancient times. In the time of the *Mahabharata*, warfare was restricted between sunrise and sunset, to be fought between equals, on a designated battlefield, with attack prohibited against defenseless or wounded persons. Kautilya's *Arthashastra* (322-298 BCE) conceptualised the justification for war and described in detail the various conditions and rationale for going to war. These two ancient Indian treatises articulated laws that governed justification for war and conduct during war. They also provided guidelines for proportionality in use of force, protection of non-combatants, humane treatment of prisoners of war and prohibition of deceitful and excessively destructive tactics in addition to emphasis on ethics, restraint and humanity. In the West, similar views, which have been broadly accepted as modern laws of armed conflict, are codified under the Latin phrases *Jus ad Bellum* (Right to use of armed force) and *Jus in Bello* (Rules for conduct of armed conflict). The main sources of laws of armed conflict are the four Geneva Conventions, Additional Protocols I & II of 1977, Additional Protocol III of 2005 and customary laws.

Basic Principles of Laws of Armed Conflict

The Laws of Armed Conflict seek to limit the use of violence in armed conflict. It is from this that the basic principles are drawn and represented as below:-

- 1** **Distinction** - between civilians and combatants
- 2** **Prohibition** - to attack those 'out of combat' due to injury or damage
- 3** **Restraint** - from inflicting unnecessary suffering
- 4** **Necessity** - of degree and kind of force to achieve enemy's earliest possible submission with minimum expenditure of life and resources
- 5** **Proportionality** - of means and methods of warfare. The use must not be disproportionate to the military advantage sought

Diagram 3.2 : Basic Principles of Laws of Armed Conflict

UN Charter on the Right to Use Force

The principal justification of *Jus ad Bellum* is the right to individual or collective self defence, which is an inherent right laid down in the UN Charter (Article 51) and the Constitution of India. These legitimise the use of force to defend one's territory, forces and nationals in various conditions, such as response to an armed attack. According to the accepted norm, such response must be governed by three important principles, viz. necessity, proportionality and distinction. The text of Article 51 may be interpreted to include anticipatory self-defence where an attack is deemed imminent. Anticipatory self-defence has a historical foundation that predates the UN Charter and stems from customary international law. It is also governed by the above principles of necessity, proportionality and distinction.

In addition to the provision of self-defence, the UN Charter (Article 42) also authorises the collective use of force to preserve international peace and security. Article 43 makes it obligatory for UN member states to make available to the Security Council *inter alia* their armed forces for the purpose.

Rules on Conduct of Armed Conflict

- **Geneva Conventions.** The concept of *Jus in Bello* relates to the conduct of forces in international armed conflict. It is governed by the four Geneva Conventions of 1949, Additional Protocols I and II of 1977 and Additional Protocol III of 2005. These are also called 'International Humanitarian Laws' (IHL) and are aimed at protecting persons who do not or are no longer taking part in the conflict, such as the wounded, sick or shipwrecked at sea/field, prisoners of war and civilians. These laws place restrictions on the ways and means of using force, which must be governed by the two cardinal principles of 'necessity' and 'proportionality'. To limit 'collateral damage', these laws require discrimination between military/ combatant and civil/ non-combatant targets and also proportionality between degree of force used and the military aim. The laws prohibit use of weapons that cause superfluous or unnecessary harm to human beings and environment and have specifically banned chemical and biological weapons, incendiary bombs, exploding bullets, blinding laser weapons, anti-personnel mines, etc. However, in recognition of *realpolitik*, there is no ban on use or threat of use of nuclear weapons. Also, the principle of military necessity is recognised, wherein reasonable force may be used for attaining military objectives and collateral damage sustained whilst striking a legitimate military target. The rules for use of force against insurgents and terrorists are governed by domestic laws and human rights laws.

- **San Remo Manual.** The San Remo manual on international law applicable to armed conflicts at sea, was jointly prepared by naval practitioners and legal experts and published by the International Institute of Humanitarian Law. It is a comprehensive, internationally recognised document, which contains contemporary

restatement of the laws applicable to armed conflicts at sea⁹, besides the proviso of the UN Charter and conventional state practices with regard to these issues. However, the document does not wield legal authority.

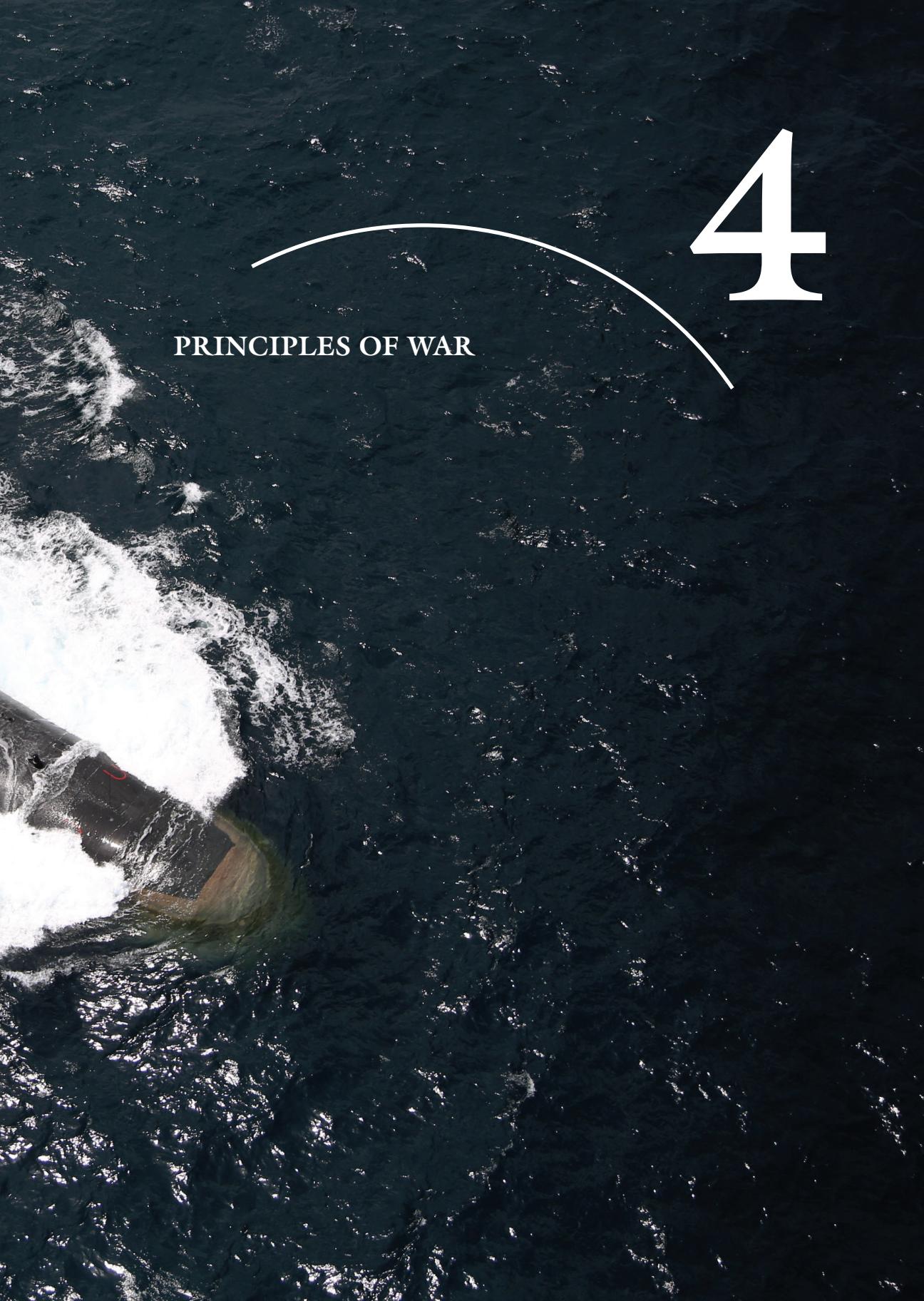
- **Hague Conventions.** Hague Conventions (1899 and 1907) especially Convention VI, VII, XI and XII relate to enemy merchant ships, conversion of merchant ships, naval mines and neutrality in naval war respectively. Hague conventions also cover conduct of hostilities and limits to weapons that applies in general to naval warfare as well. While Geneva conventions and more modern bodies of law have further developed on the International Humanitarian Law, provisions and principles of the Hague Conventions remain relevant and applicable.
- **Customary Law.** Customary law is a body of rules that States regard as binding under international law. These rules are identified by looking at the practices of States (including official accounts of military operations and other official documents, military manuals, national legislation and case law). These rules, which are accepted as law, need to be distinguished from practices that States do not regard as obligatory (e.g. practices followed as a matter of policy rather than out of any sense of legal obligation). Customary law may fill certain gaps in the protection provided to victims of armed conflict by treaty law.





4

PRINCIPLES OF WAR



4

PRINCIPLES OF WAR



तस्मादज्ञानसम्भूतं हृत्यं ज्ञानासिनात्मनः ।
छित्त्वैनं संशयं योगमातिष्ठोत्तिष्ठ भारत ॥ 42 ॥

With the sword of knowledge, slay the ignorance in your heart.
Establish yourself and perform your duties.

- Bhagavad Gita 4.42



Preamble

 Principles of war are fundamental propositions and norms applicable at all levels of war, upon which the success of military operations tend to rely. Over hundreds of years of warfare, certain maxims and tenets have been validated and held to be generally true, therefore worthy of serving as guiding precepts for military leadership at all levels of war. Since the character of war has been evolving over the years especially due to impact of new technology, norms of human conduct in warfare and accompanying organisational changes, it follows that the principles of war also need to be interpreted keeping current era and developments in perspective.

It is important to note that principles of war, though enduring, are not inviolable or timeless. Study of various wars indicate that not all principles of war were applied in a winning campaign and some were even violated. Hence, the key point is to consider these principles as *useful guides* for developing a comprehensive and thorough operational plan. The question invariably is one of weightage accorded to each principle of war and this varies as per the operational situation and Commander's decision. In the development of an operational plan, staff is well advised to pay particular attention to instances when a principle of war is being ignored or downplayed in importance and, particularly, if a principle is being violated.

The Principles of War are:-

| | |
|--------------------------------------|-----------------------|
| 1. Selection and Maintenance of Aim. | 2. Offensive Action. |
| 3. Concentration of Force. | 4. Economy of Effort. |
| 5. Surprise. | 6. Flexibility. |
| 7. Cooperation. | 8. Sustenance. |
| 9. Security. | 10. Morale. |
| 11. Intelligence. | |

Selection and Maintenance of Aim

Selection and maintenance of aim is the *master principle*. Selection of the Aim requires, firstly, a clear and unambiguous comprehension of the 'Desired End State', with careful contextualised assessment of 'own' and the 'enemy' to *identify the main effort* that will win the war/ campaign/ battle (as applicable at the level of war).

A well-articulated aim is *simple* (brief, concise and devoid of complex words), *specific* (unambiguous, clear and leaving no room for misinterpretation), *realistic* (based on practical aspects of the current circumstances) and *relevant* (aligned with and contributes to the higher directive). In case the aim creates doubt in the subordinate formation, then it is imperative that necessary clarification is sought from the higher (issuing) authority.



Once the aim has been selected, the main effort and all available resources should be directed in synergy, with each other and across all levels of war, towards its attainment. This requires constant focus on the selected aim, as diversion of attention and resources that are invariably limited may prove to be the difference between success and failure.

It is possible that the selected aim may undergo a change during operations. A change in aim should be inescapable, rare and a consequence of a significant internal or external development during course of operations that renders the initially selected aim irrelevant or inadequate. Moreover, although it is ideal to have a singular aim, multiple aims are often dictated by the higher authority during a war. This is particularly true at the higher levels of war viz, operational and strategic, where the scope of military and political objectives is much greater than the tactical level. Nevertheless, the primary objective (main effort) in a higher directive must be clearly identified and ascertained, ensuring that all individual subordinate objectives are distinct, non-contradictory and complement the primary objective.

Offensive Action

The principle of offensive action implies seizing and retaining the initiative in all domains of warfare, which keeps the enemy '*off balance*', forcing him to adopt a defensive and reactive posture. It is offensive action that best degrades enemy's offensive capability, limiting freedom of action, exposing vulnerabilities and prolonging the decision cycle. Concomitantly, offensive action permits our forces to



set the agenda and tempo of operations while ensuring own freedom of operations, domain awareness and information superiority facilitating identification and pursuance of opportunities for application of combat power to strike the enemy at the place and time or our choosing.

The principle of 'offensive action' is not to be interpreted as inapplicable or incompatible with a concept of operations that is 'defensive'. Even in a 'defensive' concept of operations, an offensive mindset is advised so as to seize the initiative by capitalising on fleeting opportunities and exploiting the enemy's weaknesses. For e.g., if the mission is to protect own SLOCs, the principle of 'offensive action' continues to apply by ensuring defence-in-depth, robust ISR, tactical routing and implementing various countermeasure so as to retain the ability to initiate decisive action against the enemy.

Concentration of Force

The concentration of force at the decisive point in time, space or the information environment maximises the chances of victory. Concentration of force provides warfighting advantage sought over the enemy by delivering an effect far greater than the sum of individual or periodic sequential attacks. A weaker force, by skillfully maximising and concentrating force at a particular time and space, can reverse or counter an enemy with higher combat potential. As stated in the Joint Doctrine of Indian Armed Forces (2017), cooperative centralised planning among joint forces enables appropriate concentration of forces, with the right mix at the right time and place.



During earlier times, application of force was seen primarily in terms of mass, the generation and concentration of which provided the necessary force at the decisive point. Destructive power of military forces over the years has increased with higher explosive power per unit mass, improved accuracy and longer reach of weapons. The emphasis, over the ages, has shifted from physical massing of platforms as a large task force to massing of firepower at the decisive point. The

modern naval force can be geographically widely dispersed but can still concentrate firepower and deliver desired effect at the chosen objective. For e.g., neutralising the enemy's command and control centre can be accomplished by both kinetic means (long-range weapons) and non-kinetic means (offensive cyber operations).

Economy of Effort

Economy of effort is the principle of judicious employment of forces to maximise the effect of available resources and avoid them being idle or wasteful. This principle emphasises the need to ensure appropriate and adequate allocation of resources and their effective utilisation. Economy of effort may be seen as an adjunct to the principle of concentration of force/ firepower and aiding the master principle of selection and maintenance of aim, wherein the available resources are principally focused on the main effort. On the other hand, equally important is to avoid wastefulness, excessive redundancy and be mindful in allocation of limited resources to pursuance of secondary or non-essential objectives.

Jointness among defence forces facilitates economy of effort in a major way by unity of effort in planning, mobilisation and execution of military operations. Jointness – being a cooperative organisational approach – minimises/ avoids duplication of action ensuring proper consideration to optimising resource allocation.

Surprise

The principle of surprise implies striking the opponent at a time, place or manner for which he is unprepared. Surprise is, therefore, crucial to unbalance the enemy, sow confusion and degrade his integrity. Surprise places the enemy at immediate disadvantage and imbalances his efforts, creating operational space

Operation Trident. The crippling strike on Karachi harbour by Indian Navy missile boats during the 1971 Indo-Pak War is an example of operational level surprise. It is also instructive to note that the principle of offensive action links closely with the principle of surprise. The operation comprised of the first missile attack on Karachi harbour, on the night of 04/05 Dec 1971, by Indian Naval Ships Kiltan, Katchall, Nipat, Nirghat and Veer. Karachi was attacked again on 07/ 08 Dec 71, this time from the West. INS Vinash fired four missiles which damaged MV Gulf Star, MV Harmatton and Pakistan Navy's Tanker Dacca and left Kiamari oil fields ablaze. In rememberance of these valiant actions, 04 Dec was declared as Indian Navy Day.



and opportunities to achieve decisive results, which could be out of proportion to the effort expended. However, surprise can be effective only if it catches the opponent unprepared and off-guard, impacting the enemy's decision-making cycle and his ability to take appropriate countermeasures. To inflict surprise, certain constituent and inter-related elements become relevant; these include *speed* and *rapidity* of undertaking action, doing the *unexpected* and *deception* to catch the enemy unprepared and thus seize the initiative. Surprise also uses the principle of flexibility, wherein surprise challenges the enemy's ability to employ this principle even as it enables our forces to exploit the same. Surprise amplifies the impact of offensive action by sowing confusion, panic and disorientation of the enemy and thus aids in seizing the initiative.

Asymmetry is one of the chosen means to attain surprise. Leveraging unexpected methods, unconventional tactics or disproportionate responses, unsettles the adversary and disrupts their planning. In the maritime domain, asymmetry compels opponents to operate in uncertainty, creating openings for decisive advantage.

Flexibility

Operations may not always go as per the plan during a war, which brings to fore the importance of flexibility as a principle of war. Flexibility signifies the capacity to cope with and adapt to changing situations. This is caused by the very nature of war exemplified by inherent fog and friction in war, enemy action, unforeseen contingencies or simple chance. Flexibility entails possessing the ability to remain unburdened and unhindered by fluid, uncertain conditions and to seize fleeting opportunities to accomplish the objective. Flexibility is necessary in both mental and physical terms, organisationally and individually, as it allows one's forces to face unexpected developments and respond appropriately to changes imposed upon them. In particular, it must be imbibed in military leadership at all levels and incorporated into the planning and staff process to enable rapid responses to changing scenarios. As a matter of sound military organisational culture, subordinate commanders should be given the freedom of action to seize the initiative presented in a fleeting opportunity and not lose precious time waiting for approvals from higher authorities especially in a dynamically evolving situation. This military leadership ethos is known as *Mission Command*.

Cooperation

Cooperation of all elements of national power viz political, diplomatic, military, societal, economic etc are critical to ensure a shared understanding at all levels - strategic, operational and tactical, to achieve the national aim. Cooperation implies the efficient compounding of all the elements of a nation to attain an aim that could not have been achieved separately. Unity of command, jointness and integration are integral components of cooperation. The spirit of cooperation in the defence forces

must be rooted in the mind of military personnel, characterised by mutual trust, understanding and a culture where the need for working together is imbibed in both letter and spirit.

Jointness in the military refers to a high degree of cooperation, coordination and collaboration among participating forces to harmonise military operations, enhance overall operational effectiveness and efficiency, to provide a distinct warfighting advantage across domains. Although, wars are inherently joint and a whole of nation effort, jointness does not manifest organically during war or operations. In order to be joint and integrated, certain pan-defence forces organisational imperatives and requirements come into play, such as emphasis on setting up integrated organisations, training/ exercises, interoperability, joint procurement policies and planning processes among others.



Sustenance

History proves that forces which are effectively sustained eventually win wars. Sustenance in war entails procuring, stocking and positioning all types of supplies and services required by one's forces, so as to maintain desired warfighting capability over a period of time. This requires efficient supply chain management across various categories of fuels, oil and lubricants (FOL) for land, sea and airborne assets, arms and ammunition, machinery and electronic spares, food, water, medical facilities and supplies, maintenance facilities and workshops, transportation of men and material, etc, in order to meet the rate of consumption of materiel and tempo of operations, and ensure combat-effective logistics. However, sustenance in a large scale/ long drawn conflict is inextricably linked to the strength, resilience and responsiveness of the nation's defence industrial base. This

entails the ability of the nation to meet surge production demands in ship building, ammunition stores, critical machinery spares, medical supplies etc in times of conflict.

Naval operations are usually spread over large, often distant sea areas necessitating setting up of maintenance, repair and materiel support facilities to effectively sustain deployed naval units. Such operations, centred on mobility and reach, require tactical and strategic sustainment assets, including setting up of forward bases, availability of multi-modal means of transportation, adequate number of versatile fleet support ships and transport aircraft etc. Leveraging the nation's existing logistics infrastructure and policies also ensures overall preparedness and responsiveness.

The key enablers of ensuring sustenance include advanced logistics management networks, incorporating Artificial Intelligence (AI) and Machine Learning (ML) driven networked Decision Support Systems; robust infrastructure such as multi-modal transportation networks and warehousing; skilled personnel with standardised processes; strong collaboration across supply chain partners and overseas logistic bases, along with international logistic agreements.



Security

The principle of security entails measures to protect our assets in all domains from offensive and disruptive action by the enemy. This includes *physical security* of our forces, bases, lines of communication and logistics, command and control centres, space-based assets, networks and data centres, other vulnerabilities etc. and *information security* of our war plans by physical, cyber and electronic security measures.

Security is an enabler for attaining and maintaining favourable asymmetry over the enemy, as well as for maintaining the offensive and exploiting freedom of action. In the absence of effective measures for maintaining security, there is risk of our vulnerabilities being exploited and targeted, thereby losing the advantage and freedom of action. Many principles of war rely on the assurance of security to achieve desired outcomes. Without security, maintenance of aim, surprise, offensive action, concentration of force and sustenance are particularly affected.



Morale

The principle of morale underpins the fighting capability of a force providing the military personnel motivation and mental toughness. It relates to the general fighting spirit and state of mind of the personnel comprising a military force and governs their ability to fight under all conditions. High morale gives rise to courage, energy, optimism and the urge for affirmative, positive action. This, in turn, imbues



a fighting unit with offensive spirit and the determination to accomplish the aim against heavy odds. A battle is ultimately decided by the quality of fighting, which depends significantly on morale.

There are many factors that determine the morale of a force, including the standard of leadership, training, discipline, vertical and horizontal cohesion, camaraderie and communication, management of conditions, administration, societal support, etc. It bears note that each of these factors contributes to morale and not the other way around.

Intelligence

Military intelligence – as an end product – comprises of accurate, actionable and in-depth information of the battle space and the strengths and vulnerabilities of the adversary. The purpose of intelligence is to assist the Commander in decision making and is normally future oriented to facilitate proactive responses. Collation, processing of information, its analysis and finally production and dissemination of intelligence is a rigorous 24x7x365 process resulting in intelligence estimates at the tactical, operational and strategic levels. Naval intelligence concerns primarily with the naval and maritime aspects of the adversary, which also requires consistent interaction with other national and military intelligence agencies. Intelligence agencies beyond the military focus on obtaining intelligence in non-military spheres like financial intelligence, political intelligence, cyber intelligence etc, all of which also aid military intelligence.

Time-sensitive intelligence is critical to effective planning and execution of combat operations. Commanders at various levels must have access to reliable, timely and actionable intelligence, for them to be able to develop or refine strategy. It is not sufficient to have information only about the battlefield. Decision makers need strategic intelligence related to a country, its intentions and its capabilities. This may relate not only to military power, but also to economic power and other resources that sustain war efforts.





5

INDIA'S MARITIME ENVIRONMENT AND INTERESTS



5

INDIA'S MARITIME ENVIRONMENT AND INTERESTS



“The vital feature which differentiates the Indian Ocean from the Atlantic or the Pacific is the subcontinent of India, which juts out far into the sea for a thousand miles. It is the geographical position of India that changes the character of the Indian Ocean.”

- KM Pannikar

Preamble

 In an overall context, our maritime environment and interests underpin the development of our doctrine. Formulation of maritime strategies requires consideration of broader geo-strategic imperatives, national security objectives, apex level or joint doctrines/ policies/ strategies, along with the maritime environment and interests. Hence, it is important to appreciate the distinct characteristics and varied nuances of our maritime environment, as also the broad, permanent tenets of our maritime interests. This understanding is important because the maritime environment and interests govern the development of a nation's maritime power and consequently its employment in the peace-war continuum.

Importance of the Seas

Historically, man has depended on the seas for his economic and social well-being. The seas are vital to our planet, regulating the climate, serving as a rich source of resources and playing a crucial role in global transportation and associated industries. The seas are abundant in biological, mineral and energy resources and are exploited for food, mined for minerals and the sea bed drilled for oil and natural gas. The seas are indispensable for international trade, as it provides the fastest, cheapest and safest means to transport bulk goods. Furthermore, industries such as tourism, shipbuilding, fishing and marine biotechnology thrive on the resources and opportunities provided by the oceans. The oceans also provide

us a sustainable and clean source of renewable energy through wave energy, tide energy, thermal gradients and salinity gradients.

With the maturation of technologies to conduct deep sea exploration and resource extraction, there is rising international concern on the health of the seas. Provisions of United Nations Convention on the Law of the Sea (UNCLOS) 1982, Biodiversity Beyond National Jurisdiction (BBNJ) Agreement (also known as the High Seas Treaty), MARPOL (International Convention for the Prevention of Pollution from Ships), among other legal frameworks are particularly relevant to promote conservation, prevent pollution and ensure sustainable use of marine resources.

Relevant Facts of the Maritime Environment¹⁰

- The Earth is fundamentally a water planet as the oceans, seas and other water bodies cover 70.8¹¹ of its surface. Almost 361¹² million square kilometres of the earth's surface is covered by the oceans.
- The seas are the single biggest environment that regulate the planet's climatic conditions.
- Oceans provide access to all parts of the globe. 85% percent of nation states have a coastline.
- 75% of the world's population lives in the littoral, i.e. less than 200 nautical miles (nm) from the sea.
- 80% of capital cities of the world and nearly all major centres of international trade and economic power are located on the coast.
- 36% of the world's oceans are encompassed within UNCLOS definitions of Exclusive Economic Zone (EEZ).
- More than 80% of the world's trade (by volume) is transported by sea.
- Approximately 99% of the world's data including internet traffic, financial transactions and communication is through undersea cables.¹³

Characteristics of Maritime Environment

Global Common

The natural tendency of nation-states is to establish control, be it political, physical or economic, over their environment and inhabitants. Nearly all the land masses of the world today are politically organised as sovereign states, with the exception of Antarctica. However, as much as the land lends itself to control, the natural condition of the sea leans towards lack of political control. While maritime nations may seek to establish their influence or dominance over the seas as per their interests, such control is not permanent. It is, mostly, transient and enabled

for a specific purpose, for a finite period of time and over a selected geographical area. Since the seas cannot be politically organised or controlled, to any significant distance from shore, the high seas are not 'owned' by any one state and afford free movement to all. Hence, they are justly described as the '**global common**'.

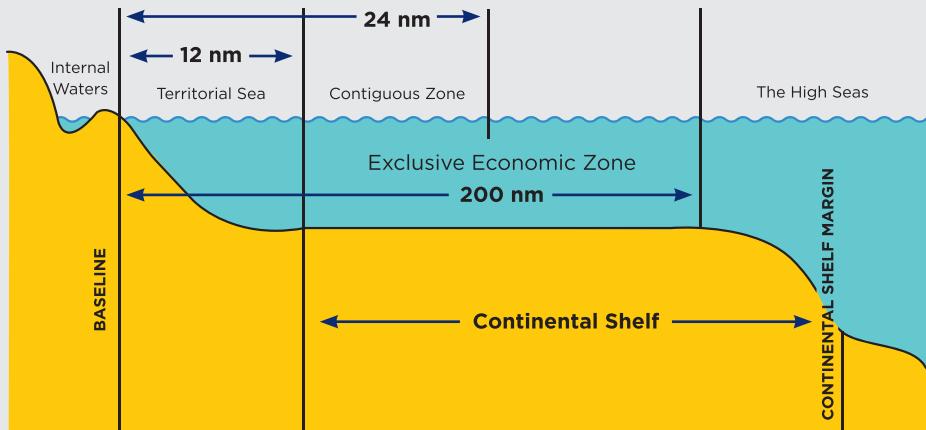
Global Trade and Connectivity

Approximately 71% of the Earth's surface is covered by oceans and seas. Roughly 80% of global trade by volume and 70% by value is transported by the seas. Hence, it is no exaggeration to state that economic prosperity and growth of nations' world over relies on efficient, safe and unhindered conduct of trade over the seas. An interesting modern age development and a unique characteristic of the maritime environment has been the immense growth of submarine communication cables that carry approximately 99% of the international data traffic. On the other hand, subsea pipelines carry oil, gas and water to various consumers over very long distances thus becoming critical to global energy infrastructure. Global trade and connectivity is therefore truly sea dependent, which has vital implications for national security.

Legal Dimension

The growing importance of the maritime realm is reflected in inter-state friction over its use. The UNCLOS, 1982 sought to reduce tensions by conceding expanded jurisdiction to states over their adjoining maritime zones like territorial seas (articulated as 'Territorial Waters' in MZI Act), contiguous zone, EEZ and Continental Shelf including for exploitation of living and non-living natural resources. Notwithstanding the attendant restrictions, UNCLOS continues to uphold the traditional principle of *Mare Liberum* (freedom of the sea). International law provides vessels of all nationalities (including warships) free access to the entire ocean realm comprising International Waters, which includes the Contiguous Zone, EEZ and Continental Shelf of all coastal states. This implies that a naval task force can legally approach a foreign country up to 12 nm from its coast, presenting itself as a neighbour and influencing the strategic frontiers of both nations. Furthermore, the Law provides the right of 'innocent passage' through foreign territorial waters and archipelagic waters, the right of 'transit passage' through international straits and archipelagic sea lanes, even if these waters constitute the territorial seas of the adjoining state(s).

While some restrictions are posed on the ship undertaking 'innocent passage', its rights of unimpeded 'transit passage' remain unfettered. For example, whereas a submarine must surface for an 'innocent passage', it may undertake the transit passage in dived mode. A thorough understanding of the Laws of the Sea and the legalities imposed by them on the maritime environment is vital for all mariners and naval officers in particular, as they have to both follow and uphold them. These



The United Nations Convention on the Law of the Sea (UNCLOS), adopted in 1982, provides the comprehensive legal framework governing the rights and responsibilities of nations in the use of the world's oceans. It defines various maritime zones including Internal Waters, Territorial Sea (up to 12 nautical miles), Contiguous Zone (up to 24 nautical miles), Exclusive Economic Zone (EEZ) (up to 200 nautical miles) and the Continental Shelf, each conferring specific rights of sovereignty, resource exploitation and jurisdiction. UNCLOS serves as the foundation for global maritime order and the peaceful resolution of disputes at sea. In alignment with its provisions, India enacted the Maritime Zones of India (Mzi) Act, 1976, to delineate and regulate its maritime zones and associated rights.

have been comprehensively described in Indian Naval Book of Reference (INBR) 1652. Notwithstanding, the advent of uncrewed equipment and uncrewed systems have challenged the legal framework of traditional maritime law.

Hydrography and Climatology

The sea is known to have a direct influence on global climatic conditions. The seas regulate the Earth's climate and acts as a carbon sink absorbing a large portion of atmospheric carbon dioxide thus directly impacting the well-being of life on the planet. Man has sought to unveil the secrets of this medium



through oceanographic, meteorological and hydrographic studies. This expertise is essential for utilising the maritime environment fully and properly, whilst learning to minimise its adverse effects especially regarding safety of life at sea. The seas have a direct and decisive impact on climate. Climate changes have caused rise in sea levels, thereby resulting in changing coast lines and threat of existence to many low-lying island nations.

India's Maritime Environment

Indian Ocean

The Indian Ocean, with an area of 68.56 million sq km, is the third largest body of water in the world and covers about 20% of the earth's surface. The Indian Ocean is separated from the Atlantic Ocean by the meridian of 20° East and from the Pacific by the meridian of 147° East.¹⁴ The northern limit of the Indian Ocean is the Persian Gulf, at the approximate latitude of 30° North. Extending southwards down to Antarctica. The Indian Ocean is nearly 10,000 km wide at the southern tips of Africa and Australia and extends nearly 13,500 km from the Persian Gulf to Antarctica. The great Indian peninsular landmass, jutting out for a thousand miles, characterises the Indian Ocean and lends it its name.

Indian Ocean Region (IOR)

The IOR is a vast area of water and land that stretches from Africa's eastern coast to Australia's western coast. It is a vital trade route for energy, commerce and food and is home to many countries and diverse cultures. There are several important straits, gulfs, bays and seas within the IOR, most of them being in the northern part. Major shipping lanes criss-cross its vast expanse, with strategic waterways and choke points linking the Indian Ocean to other important water bodies on the globe. A striking feature, one that is of great geo-strategic importance to the furtherance of maritime power, is the distribution of islands and archipelagos in the IOR.

Indo - Pacific Region¹⁵

The Indo-Pacific maritime region spans the entire width of the Indian and the Pacific Oceans and has gained geopolitical significance owing to its significant economic rise and the increased tensions in the region. The IOR is subsumed within the Indo-Pacific region. It is home to 64% of the world population and accounts for 62% of the world's GDP. 50% of international trade and 40% of oil passes through Indo-Pacific region. In the Indian context, 90% of our trade and 80% of our critical freight-coal, petroleum and gas, iron ore, fertilisers, etc. transit through the region.

Choke Points in the IOR

The Indian Ocean is distinguished by a land rim on three sides, with maritime access to the region only possible through a few narrow gateways or choke points. A 'choke point' at sea refers to a narrow passage or strait, where a large volume of maritime traffic must funnel through a confined area, making it a critical point of control and potential vulnerability for international trade and navigation. Choking of any one of these points could cause disruption of seaborne trade and volatility in oil and commodity prices, leading to upheavals in the global economy. Choke points are therefore of abiding and crucial maritime interest for the nation and the Navy. To the East in the IOR, the Straits of Malacca, Sunda and Lombok connect the South China Sea to the Indian Ocean. To the West, busy shipping lane passes through the Strait of Hormuz, which connects the Persian Gulf to the Indian Ocean. The Suez Canal and eventually the Strait of Bab-el-Mandab connects Mediterranean through the Red Sea to the Indian Ocean. These narrow straits/ waterways constituting entry/ exit choke points of IOR are critical for international trade and commerce. The primary choke points in the IOR are: -

| | |
|---------------------------|--|
| 1. The Suez Canal. | 6. Ombai and Wetar Straits. |
| 2. The Strait of Hormuz. | 7. The Lombok Strait. |
| 3. Bab-el-Mandeb. | 8. The Sunda Strait. |
| 4. Mozambique Channel. | 9. The Straits of Malacca and Singapore. |
| 5. The Cape of Good Hope. | |

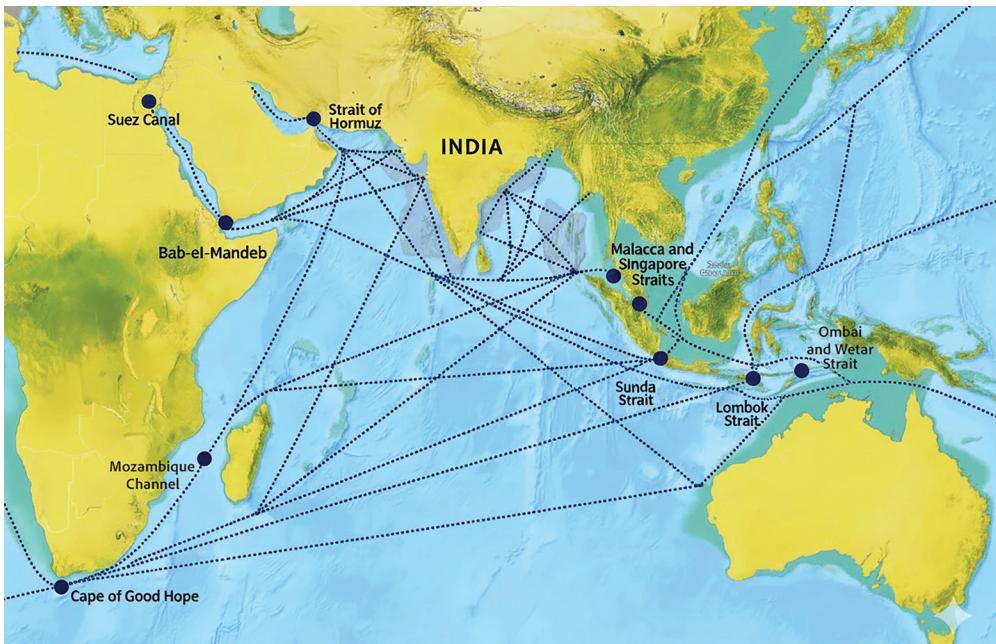


Diagram 5.1 – Entry/Exit Choke Points and ISLs of the IOR

Littoral States

The Indian Ocean Region (IOR), comprising 36 littoral states along with the offshore territories of the British Indian Ocean Territory (BIOT) and Overseas Departments of France (DROM), represents a complex maritime milieu, with India as a major regional actor and a natural and enduring maritime interlocutor. By virtue of geography, history and strategic interest, India's engagement transcends proximate neighbours. Such positioning underscores India's capacity to influence normative structures, safeguard critical sea lanes and contribute to a rules-based order that is both inclusive and reflective of the IOR's multidimensional interdependencies.



India's Maritime Legal Framework

The Maritime Zones of India (MZI) were established by the 'Territorial Waters, Continental Shelf, Exclusive Economic Zone and other Maritime Zones Act' passed by the Parliament in 1976. MZI refers to distinct regions of the sea where India exercises various degrees of sovereignty, jurisdiction and rights in accordance with International law (UNCLOS, 1982). Multiple Acts passed by the Government of India form a part of the legal framework to empower the constabulary forces to exercise jurisdiction in the MZI on the living and non-living resources of the sea, maritime security issues, port security etc.

Naval Dimensions of the Maritime Environment

Multi-Dimensional

The oceans are essentially a three-dimensional battle-space in which naval forces must operate, viz. on, below and above the sea surface. They must also be able to use outer space and the electromagnetic medium. Naval power thus finds its expression through surface ships, submarines, aircraft (including uncrewed systems in all the three dimensions) and space-based assets and is highly technology intensive. Weapons can be delivered from maritime platforms, against other maritime platforms or targets ashore, through any of the three primary dimensions, alongwith use of space-based assets and the electromagnetic spectrum. These weapons may even have to travel through the interface of two dimensions, as in the case of submarine - launched missiles and air launched torpedoes and depth



charges. In naval combat, the hunter and the hunted may operate in totally different dimensions. This multi-dimensional nature affects every facet of maritime warfare - surveillance, classification, localisation, targeting and weapon delivery, wherein the threat can come from any direction and dimension.

Challenge of Surveillance

Unlike on land, at sea there are no defined battle or physical boundary lines. A threat can emerge from any direction or dimension. The biggest challenge, therefore, is in detecting and identifying potential threats. Often, large areas need to be kept under surveillance. The challenges to effective surveillance are as follows: -

Surface and Air Surveillance.

There is increasing traffic on and over the seas. The vast spaces and volumes of traffic challenge the ability to monitor the seas and air spaces and maintain a recognisable situational awareness picture over the oceans. This is compounded by the presence of uncrewed systems. The legal status of the oceans, which allows access to most water-parts and permits free movement across the vast 'global common' further underscores the importance of all round and effective surveillance of the sea as also the level of difficulty.



Underwater Surveillance. The sea is very nearly opaque to a majority of sensors. In addition, the temperature and pressure profile and salinity conditions of the sea seriously impinge on the performance of underwater surveillance equipment. Submarines, for example, routinely use these conditions to their advantage, which are more pronounced in warm, saline waters.



Geographic Influence

The geographic conformation (including its sub-surface component) plays a significant part in shaping the military maritime environment. The confluence of International Shipping Lanes (ISL) close to a country's shores, especially through important straits, gulf, bays and other choke points, bestows on it a unique strategic leverage, which has to be taken account of by its potential adversaries. Similarly, the seas may provide access to vital or vulnerable areas of the adversary, which are otherwise not accessible by land. Accordingly, these areas would form part of the area of operations for naval forces from both sides, seeking 'use' for itself and 'denial of use' to the adversary. Unlike the threat on land or in the airspace over it, the threat at sea is not confined to international boundaries. It is important to remember that where naval warfare is concerned, the enemy at sea need not be a neighbouring country, because indeed every country with a sea coast is potentially a maritime neighbour. Navies are meant to fight wherever the nation's interests are threatened. This may well be in a sea area adjacent to or even belonging to a third country. Local geographic conditions also influence the nature and conduct of maritime operations, enabling one type and hindering another, such as submarine and anti-submarine operations in littoral areas and in varying hydrological conditions, carrier operations in restricted surface and air space or dense traffic areas, etc.

Presence of Neutrals

The lack of earmarked or physical boundary lines and the unhindered use of the seas - bestowed by the international body of laws facilitating the 'global common' to be regularly used by all nations - accord an omnipresent possibility of presence of neutrals in the maritime battlespace. The presence of neutrals complicates the maritime picture with a high potential for misidentification that can lead to severe consequences in both cases, viz. hesitation in not engaging a belligerent due to possibility of it being neutral and suffering possible loss or damage to our forces, as

also of attacking a deemed hostile who may later turn out to be neutral. Exponential growth of technology has both salutary and unwelcome impacts; one of easing the identification problem by better sensors, processing, networking and dissemination, while also complicating identification through invoking of false contacts, deception, disinformation, concealment, spoofing etc.

Mobility and Fluidity at Sea

Another characteristic of the military maritime environment is the intrinsic mobility of naval operations in a fluid medium. In contrast to the land, the sea is a medium for movement. The sea cannot be permanently occupied or fortified; control is always temporary, local and contested. The only measure of combat effectiveness at sea is the successful use of ocean areas or the denial of the same to an adversary, all aimed at furthering national interests, in war and peace. In other words, the capability of a navy to effect Sea Control or Sea Denial in the ocean areas of its interest would be a major determinant in the outcome of a war.

International Shipping Lane (ISL) vs Sea Lines of Communication (SLOC)

Sea trade is carried by merchant ships along the most suitable sea routes, which are usually the shortest navigable routes that provide the best environmental conditions and proximity to staging ports enroute. These internationally used sea trade routes are called ISLs. However, in times of NWNP and conflict, a nation may prefer other sea routes or one/ more of the ISLs, for its merchant traffic or to sustain a maritime/ expeditionary operation, which it can protect from interdiction by the adversary. Such routes, which may coincide in part, full or not at all with ISLs, are termed as the SLOCs of that nation.

Medium for Power Projection

The ability of a nation state to ensure free and full use of the seas, for trade, transportation and to meet resource needs, is critical to robust economic growth. The sea is the most effective domain for projecting power far and wide beyond national territory. The maritime environment, accordingly, offers power and dominance to those who are strong at sea. It is not surprising, therefore, that the seas have hence remained a medium of intense competition between nation-states. This jostling ranges from wielding political influence, fishing and mineral mining rights, offshore economic activities like prospecting for oil and gas etc., to denying potential adversaries use of the seas by various 'hard' and 'soft' measures. A nation needs to develop adequate maritime power to effectively safeguard and progress its national interests. A powerful Navy can project power to great distances on the sea or from the sea to well inshore.

Medium for Influencing Operations Ashore

The maritime environment offers a medium to naval forces to influence land battles. This may be achieved *directly* by projecting naval power ashore *from* the sea, or *indirectly* by projecting such power *at* sea. The former method is by delivery of ordnance or troops ashore, which includes land attack by delivering ordnance using integral weapon systems, aerial platforms and shore-based strike vectors and also by transporting land forces across the seas onto the land, i.e. by amphibious operations. The latter method is by interdicting the adversary's shipping, in order to deny him the essential commodities required for waging the war.

India's Maritime Interests

Stability, Security and Safety at Sea

The importance of the seas and dynamics of the maritime environment point to the need for maintaining stability, security and safety at sea, particularly in the IOR. This would enable use of the seas to progress economic development and provide appropriate maritime environment for unfettered pursuit of national interests. The absence of requisite level of safety and security adversely affects the maritime environment and all activities therein, including maritime trade, shipping, fishing, natural and energy resource extraction, security of our seaborne, off-shore and coastal assets, etc.

| | |
|------------------------------|--|
| Total Length of Coastline | 11098.81 km |
| Mainland | 7870.51 km |
| Lakshadweep Islands | 144.80 km |
| A & N Islands | 3083.50 km |
| Number of Island Territories | 1389 |
| A & N Islands | 836 |
| Lakshadweep Islands | 33 |
| Off India's West Coast | 412 |
| Off India's East Coast | 108 |
| Territorial Sea | 45,450 sq nm/ 155,889 sq km |
| EEZ | 2,305,143 sq km |
| Continental Shelf | 3.274 million sq km |
| Deep Sea Mining Area | 95,000 sq km |
| Stations at Antarctica | <i>Maitri</i> (70° 46'S 11° 50' E) – set up in 1989 <i>Bharati</i> (Larsmann Hill) – set up in 2012 |
| Station in the Arctic Region | <i>Himadri</i> (1200 km from North Pole) – set up in 2008 |

Table 5.1 – Maritime Statistics of India

Seaborne Trade

India's economy is critically dependent on the seas for conduct of trade. More than 95% of our trade by volume and 68% by value¹⁶ is transported over the seas. For a growing economy seeking new markets worldwide, these trade figures will only spiral upwards in the years to come. Indian merchant ships are valuable maritime assets for transporting trade, especially in times of armed conflicts where they would be essential for transportation of strategic commodities under Naval Cooperation and Guidance to Shipping (NCAGS). In 2024, India's merchant fleet comprised 1545 ships totalling 13.5 million GRT¹⁷.

Submarine Cables

Approximately 99% of international internet exchanges are carried through undersea fiber-optic cables. India's economy is largely dependent on these submarine communication cables for digital trade, seamless connectivity and integration with global markets. The submarine cables in the seas and the landing stations along India's coasts are thus critical infrastructure, ensuring connectivity for financial transactions, cloud services, e-commerce, defence communication and government operations. In 2025, India has over a dozen active submarine cable systems with landing stations in various coastal hubs, forming the backbone of the nation's digital economy and a vital component of national security in the information age.

Sea Resources

The fisheries sector occupies an important place in the nation's socio economic development. Fisheries and Aquaculture Sector in the country provides livelihood support to a total 30 million fishers.¹⁸ Out of these, 2.78 million fishers are full-time actively engaged in fisheries and related activities.¹⁹ The sector has also been one of the major contributors of foreign exchange earnings through export. The security aspect of fishing entails safeguarding our EEZ against poaching, SAR cover and protection against use of fishing as a cover for inimical activities against the nation.

Seabed Resources

The seabed holds valuable mineral resources and Rare Earth Elements (REEs) in the form of polymetallic nodules, vital for any economy and new age technologies. It additionally, houses oil and gas pipelines and submarine cables which drive the world economy. India has been granted exploration rights for three sites by the International Seabed Authority (ISA). These are in the Central Indian Ocean Basin (CIOB), Central Indian Ocean Ridge and part of Carlsberg Ridge amounting to a total of 95,000 sq km.

Energy Security

India is the third²⁰ highest energy consumer in the world and needs assured supply of adequate energy to sustain its growth. Energy security is ensuring the required energy supply over the long term and at affordable cost. India's major energy requirements are met through the maritime domain – be it imports or through offshore production.

The GoI has a four-pronged strategy²¹ to achieve energy security namely, diversification of energy supplies, increasing India's exploration and production footprint, alternate energy sources and meeting energy transition through gas-based economy, green hydrogen and EVs. Whilst the country has sought to diversify its sources of energy the dependence on hydrocarbon based sources of energy is unlikely to reduce in the foreseeable future, since we import more than 85% of our crude oil requirements and almost all of it coming through sea.²² Oil and natural gas will therefore remain critical to our energy security for several decades to come.

Security of Energy

Security of energy implies safety and security of various energy assets, including supply sources, production infrastructure and means of transportation that belong to the country. It also includes both the safe passage of energy imports, as well as security of Offshore Development Areas (ODA), Single Point Moorings (SPM), sub-sea pipelines etc. It encompasses both military and quasi-military ways adopted to address the safety of these assets. The Persian Gulf, Russia and Africa



are the major sources of India's oil and gas imports, which are carried by sea. Our off-shore oil and gas fields on both coasts contribute to a majority of our domestic production. These traditional sources are unlikely to change in the near to medium term. India is also investing in hydrocarbon assets worldwide, which would have to be maintained by sea and use the sea lanes for repatriation to India. Security of energy, thus, has a strong maritime component, which will remain of prime national concern.

Arctic and Antarctica

The Arctic and Antarctica are of maritime interest to India primarily because they enable scientific research and detailed environmental studies for monitoring meteorological data towards prediction of the Indian monsoon, upon which our agriculture and hence our economy largely depends. These also help to serve India's geopolitical interests in these remote regions.

India's Maritime Security Challenges

Maritime Terrorism

The IOR has witnessed a steep increase in global terrorism, with many regional organisations covertly or even inadvertently aiding and abetting subversive elements. Originating from within the IOR, various organisations have spread their tentacles of terror across the globe and directly impact India's security and national interests.

The traditional principle of *Mare Liberum* (freedom of the sea) and the 'global common', has been used by various terrorist groups to export their ideology and expertise – the globalisation of maritime terror. Coastal gun-running, hijacking, bombings etc are another manifestation of maritime terrorism which have seen a marked increase in the IOR.

Piracy

The IOR is a hotbed of international crime, with a number of incidents of piracy, gun-running and human and drug trafficking taking place in its waters. Piracy is the biggest scourge of modern-day shipping, which exploits the convergence of merchant traffic at choke points. It is particularly prevalent in and around the Horn of Africa/ Gulf of Aden. In 2008, the acts of piracy on mercantile shipping in the Gulf of Aden witnessed a steep rise, resulting in disruption to normal trading routes, thus impacting shipping, fuel and insurance costs. Coordinated efforts by international navies, have drastically reduced this piracy. However, it persists sporadically in some areas showing a sharp rise in the first half of 2024 due to regional geo-political events. Continued vigilance remains critical to deter its rise in the future.



On 16 March 2024, INS *Kolkata*, mission-deployed in the Arabian Sea, intercepted the hijacked merchant vessel *MV Ruen* about 260 nm east of Somalia. Through a sustained 40-hour operation, involving precision engagement, drone surveillance and deployment of Marine Commandos, the Indian Navy compelled 35 Somali pirates to surrender. All 17 crew members were rescued unharmed and the vessel was secured—demonstrating Indian Navy's resolve and capability in ensuring maritime security far from its shores.

Narco Terrorism

Most of the poppy (opium) cultivation in the region takes place in the areas that encircle the Indian Ocean. Terrorist groups in conjunction with transnational criminal organisations, drug cartels and war lords, use drug money to procure weapons, arms and ammunition to support terrorist activities and insurgencies. The transshipment of these tools of terror, often takes place in the waters of the Indian Ocean. The vast swath of the open seas and porous nature of the vast coastline additionally makes monitoring and law enforcement extremely difficult. In short, the IOR is the hotbed of narco terrorism, smuggling, gun-running and associated crimes.

Maritime Crimes

Maritime crimes also pose a major security challenge for India, threatening our strategic as well as economic interests. Illegal, Unreported and Unregulated (IUU) fishing depletes resources and impacts coastal livelihoods, while marine pollution undermines environmental security and port operations. Smuggling, fuel siphoning and other economic crimes exploit busy sea lanes, even as cyber-attacks on ports, shipping and traffic management systems exploit vulnerabilities in critical infrastructure. The risk of deliberate interference with undersea communication cables - vital to India's digital economy - further compounds these threats. In addition, trafficking in arms, narcotics and dual-use technologies, adds to the complexity. Addressing these maritime security challenges demands sustained vigilance, robust legal frameworks and enhanced cooperation with regional and international partners.

Coastal Security

A substantial amount of India's industrial and economic activity, including nuclear power stations, are located within 200 km of its 11098.81 km long coastline. The country's 1389 islands also have substantial economic potential. India has 12 major and 200 non-major ports, with a large number under development.²³ Safeguarding the long coastline, including the littorals and interests of the coastal regions form a vital cog in the wheel of maritime security.

Extra-Regional Presence

The IOR has historically been a key area of interest for extra-regional forces due to its strategic importance as a major trade route, economic potential and security imperatives. Further, increased scientific exploration activities in the IOR add to the complexities. Many countries from the European Union, China, USA etc. have a strong military, economic and diplomatic presence in the region. Their presence in the IOR has been supported through military bases in the region and deployment of units as independent deployments and as part of various Task Groups and Coalition Forces.





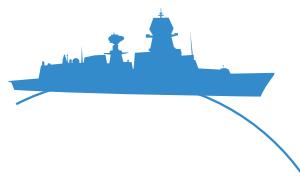
6

CONCEPTS OF MARITIME POWER



6

CONCEPTS OF MARITIME POWER



‘जलमेव यस्य, बलमेव तस्य’

‘One who controls the sea is all powerful.’

- **Anonymous**



Preamble

 The seas are the common heritage of mankind, which offer every nation legal access to the entire globe. A maritime nation must have freedom of action to use the seas in order to further its national interests. Concepts and techniques that protect this freedom and enable use of the seas are applicable across the entire spectrum of maritime activities in peace and war alike. The nation’s political objectives – and thus its military objectives – are inextricably linked to events on land. In the broader sense, therefore, whatever concepts that maritime forces adopt must eventually (directly or indirectly) impact affairs on land. This chapter sets forth the concepts of maritime power and their interplay in the conduct of maritime operations.

Enablers of Maritime Power

Some of the main enablers that determine the maritime power of a nation are:-

- The geography of a nation and its adjacent seas, including its access to the seas, proximity to ISLs and the share of these ISLs in transportation of global trade.
- The maritime bent of mind of the Government, the people and other organs of the state.
- Supportive and facilitative national instruments such as policies, directives, laws, acts and budgetary support.
- The size of seafaring population and its enterprise, including merchant marine, fishing, off-shore and deep-sea commercial activities, naval forces, etc.

- The shipbuilding capability, technological ability and industrial support infrastructure.
- The number, type and functional efficiency of ports. This includes cargo handling capacity and infrastructure for multi-modal transport of seaborne goods.
- The size, age and condition of the merchant fleet – both coastal and ocean-going.
- The percentage of imports and exports being carried in national flagged vessels.
- The state, size and technological advancement of the coastal and deep-sea fishing fleets, their geographic spread and fish catch.
- The size, state, characteristics and combat preparedness of naval forces.

Attributes of Maritime Forces

The maritime environment dictates the attributes of maritime forces and enables their unhindered deployment. A sound and thorough understanding of these attributes is essential for all military planners, for the application of maritime force:-

- **Access.** Over two-thirds of the world's mass is water and the long-standing principle of freedom of navigation in international waters, makes a major part of the planet navigable by ships. It enables nations to secure SLOCs/ ISLs, project influence across seas and safeguard their interests. Naval forces serve as a critical instrument in ensuring access to majority of these international waters, as and when required by the nation.
- **Mobility.** Naval forces can move hundreds of miles every day over more than two thirds of the world's surface. A task force operating off the Eight-degree Channel could be off the Gulf of Aden within 36 hours and could arrive at the entrance to the Persian Gulf the following day. This mobility enables naval forces to move quickly across large distances and use the access potential of the seas to deploy to the particular area of interest quickly and with requisite combat power.
- **Sustenance.** Sustenance of naval forces at sea, far away from land based support, is a cornerstone of maritime power projection. As a result, naval forces carry their own ammunition, spares, consumables, repair and medical facilities. This ensures operational continuity, flexibility of deployment and operations across large areas. These supplies can be replenished and augmented through specialist logistic ships, which permit replenishment at sea.
- **Reach.** The attributes of access, mobility and sustenance together accord naval forces the ability to apply national maritime power over long distances

and for extended periods. This reach of naval forces enables a wide spectrum usage of maritime power in areas of national interest overseas, which would otherwise be beyond the sphere of the nation's influence using other components of national and military power.

- **Flexibility.** The attributes of reach, access, mobility and sustenance make naval forces capable of adapting to a plethora of situations, ensuring a high degree of flexibility in the application of maritime power. Warships can calibrate their response in terms of visibility, intensity and longevity as required. They can be rapidly positioned in an area of interest, remaining unseen over the horizon or be clearly visible, to signal latent or direct national interest, or be as quickly and unobtrusively withdrawn, with little ado or notice.
- **Versatility.** The various attributes also enable naval forces to be highly versatile and adapt to a wide range of roles from benign operations like disaster relief and humanitarian assistance to low tempo operations like LIMO, to high tempo response during conflict. Thus warships can easily change their military posture, undertake several tasks and roles concurrently and be rapidly redeployed for others.
- **Ability to Influence Events Ashore.** Naval forces can influence events on land both directly and indirectly. Although it flows from 'versatility' of naval forces, this important attribute merits treatment in greater detail. Mostly, naval forces influence events ashore indirectly by shaping the maritime environment or by influencing trade flow, which affects the well-being and growth of the state and its population. Naval forces can also apply maritime power directly on land, either by means of transporting land forces to the land area of interest, or by delivering ordnance onto land using integral weapon systems, aerial platforms and shore-based strike vectors. This attribute is based on the earlier attribute of reach and has two components of Sea Lift and Shore Strike within the overall ambit of power projection.
- **Multi-Domain Capability.** Naval task forces constitute a **multi-domain** capability with integral platforms, weapons and sensors (besides other components) that find applicability across all domains of military operations – land, sea (including the underwater sub-domain), air, space and cyber. A naval force exerts multi-dimensional impacts beyond the military to trade, diplomatic, informational spheres for example.
- **Resilience.** Warships have high resilience. They are designed to absorb substantial damage and still be able to carry out their role. While a loss of fighting capability by damage can degrade operational performance, ships crews are trained to restore fighting efficiency as quickly as possible.

Maritime Command and Control

The Concept

Command is the exercise of authority and direction over forces assigned, by an individual so designated, for the accomplishment of a mission or a task. Control is the process through which Command is exercised, by the Commander organising, directing and coordinating the activities of the forces. Effective communications and computerisation along with the integration of Intelligence, Surveillance and Reconnaissance (ISR) are critical enablers of Maritime Command and Control (C²).

Rules of Engagement (RoE)

The RoE lie at the apex of maritime C² functions. RoE may be defined as a set of rules factoring provisions of international law and political directives meant to authorise and guide operational Commanders with regard to the freedom to initiate or continue combat and extent of use of military force in a specified scenario. While Standing RoE cover various types of contingencies/ scenarios in the entire spectrum of conflict, Special RoE are promulgated for specific operations as required, especially in a non-conflict state. The former are required to be reviewed periodically in tandem with changes in the underlying factors, particularly in terms of international law, foreign policy imperatives and the political outlook.

Maritime Domain Awareness (MDA)

MDA, as defined by the International Maritime Organisation is '*the effective understanding of anything associated with the maritime domain that could impact the security, safety, economy or environment*'.²⁴ The concept of MDA has evolved significantly over the years. MDA is inherently multi-domain, taking into ambit the sea (surface and under sea) and airspace, as well as threats emanating from land, space and cyberspace, not only for generation of an integrated picture for maritime battlespace transparency but also to address traditional issues and illegal activities such as Illegal, Unreported and Unregulated (IUU) fishing, pollution, piracy, contraband smuggling, dark shipping and human trafficking/ irregular migration etc. Underwater Domain Awareness (UDA), is a part of MDA and refers specifically to the complex and challenging underwater domain with its multiple stakeholders.

An effective organisation for Maritime Domain Awareness (MDA) encompasses the ability to keep oceanic areas of interest under sustained surveillance using all possible means including space-based surveillance and is critical for informed decision-making at strategic, operational and tactical levels using big data analytics, Artificial Intelligence (AI) and Machine Learning (ML). This requires the integration of diverse surveillance systems and sensors across the maritime domain, ensuring that no area remains unmonitored. Within India, the National Maritime Domain

Awareness (NMDA) serves as the cornerstone of this approach, providing a unified framework to synergise efforts of all stakeholders - civilian, military and diplomatic - in order to ensure security, safety and good order at sea. The Indian Navy is the lead agency that synchronises NMDA efforts through inter-agency coordination among naval forces, national security and intelligence agencies, as well as through robust international and regional cooperation. By integrating national capabilities with international linkages, NMDA enhances India's ability to generate a comprehensive, accurate and actionable maritime picture. This ensures effective anticipation of threats, decisive responses and collective maritime security, across the IOR.



Application of Maritime Power

Sea Control

Sea Control is an important manifestation of maritime power and denotes a condition where one is able to use a defined sea area (surface, underwater and airspace) including the electromagnetic environment, for a defined period of time, for one's own purposes and at the same time deny its use to the adversary. Sea control is an enabler that affords freedom of action to those who possess it, but denies it to those who do not. It is derived from the erstwhile concept of 'command of the sea', which, as the phrase indicates, was unqualified by time and space. However, maritime strategists are in general agreement that total 'command of the sea' is rarely, if ever, achievable.

Sea Control is not applicable in peacetime or generally in NWNP situations when it is more appropriate to use terms like 'influence operations' or 'presence and surveillance' or 'sanitisation' etc that aim to protect maritime interests or address

maritime security threats. Sea Control is inextricably linked with employment of naval combat power that seeks to bring under its control all seaborne activities in the area of operations. Sea Control operations may also take place during peace enforcement and a civil war that spreads to adjoining sea areas.

Sea control is normally not an end in itself. It is a means to a higher end and very often a pre-requisite for other maritime operations and objectives including power projection, blockade, SLOC protection/ interdiction and amphibious operations.

Since Sea Control operations – on most occasions – are contested by belligerents, the degree of Sea Control established depends on the freedom from enemy interference that provides freedom of action to pursue assigned tasks. The size of the Sea Control area depends on a number of factors, principally the naval objectives, maritime topography (open, semi-enclosed or enclosed sea area), presence of neutral traffic (International Shipping Lanes) and the differential between own and enemy combat potential. Recent conflicts have demonstrated the ability of shore-based missiles, air power and sensors to exert influence over adjoining sea area, which is significantly enhanced in enclosed, semi-enclosed and sea areas proximate to shore. This makes establishing Sea Control more challenging in the littorals.

Sea Denial

Sea Denial operations aim to deny adversary the use of a sea area for a certain period of time, when it is not required for our use. Submarines are considered platforms-of-choice for the exercise of sea denial in choke points, areas particularly closer to enemy coast and in open ocean in designated areas and under conditions favourable to it. Other options that could be resorted to are mining, shore-based aviation including the employment of uncrewed systems in multiple domains.



Mobile Missile Coastal Batteries (MMCBs) with long-range shore-based missiles along the coast, can also afford effective Sea Denial, especially in the littoral waters with the support of effective MDA.

Sea Denial and *Sea Control* are not necessarily mutually exclusive but serve complementary objectives. Moreover, by establishing Sea Control in a given area, a force automatically denies the use of the sea area to the enemy. On the other hand, successful Sea Denial activities do not necessarily translate into obtaining Sea Control as the latter necessitates proactive and sustained presence of the naval force, especially surface combatants, in the area of operations.

Fleet-in-Being

A “*Fleet-in-Being*” is one that physically exists but is not deployed into the battle space, leaving the adversary in uncertainty and forcing him to consider the effect of its potential deployment at any stage. This is applicable even if there is reasonable knowledge of sub-optimal capability resident in such a fleet including unproven technology/ systems. This strategy relies on the psychological and operational impact of the Fleet’s presence rather than its immediate use. The concept highlights the value of deterrence and strategic positioning in maritime warfare. Generally, *Fleet-in-Being* is the strategy of a weaker maritime power, though the concept can be used by either side.

Littoral Warfare

The littoral refers to the area near the coast, both landward and seaward, within which shore-based and seaborne forces can apply military power upon each other. Its extent depends on the reach of land and sea-based forces. The reach and accuracy of modern weapon platforms and systems have enlarged the littoral space. *Littoral warfare* refers to military operations conducted in the littoral region. With advent of long range missiles and high endurance uncrewed systems, the effective expanse of the littoral area has been increasing.

Manoeuvre Warfare

Manoeuvre warfare seeks to achieve military victory by eroding and shattering the enemy’s physical cohesion rather than aiming for destruction directly. Combined with the inherent and unique characteristics of the maritime domain, naval forces are uniquely endowed to leverage speed, endurance, stealth and flexibility, with an emphasis on rapid large-distance movements, to out manoeuvre and surprise the enemy. On the other hand, manoeuvre warfare also emphasises the cognitive mindset of exploiting the enemy’s weakness or vulnerabilities.

Amphibious Operations

Amphibious Operations are joint military operations wherein land power is projected ashore from the sea. In an amphibious assault, 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. It may be conducted to prosecute further combat operations ashore, capture or recapture territories, obtain a site for an advance naval or air base, deny the use of an area or facilities like a port to the enemy, or to show presence. Such operations employ a range of maritime assets and resources integrating virtually all types of ships, aircraft, weapons, uncrewed systems, special operations forces and landing forces, in concerted joint military effort, making it the most complex of all joint operations. An important point to note is that establishing Sea Control in the amphibious area of operation is generally a prerequisite for effecting amphibious operations. Amphibious capability also presents a credible threat-in-being, which can act as a powerful deterrent and can be exploited as an instrument of strategic/operational leverage. The Joint Doctrine on Amphibious Operations covers these aspects in greater detail.



Expeditionary Operations

Expeditionary Operations are a form of maritime power projection from the sea to the shore. It entails deployment of military forces overseas and their sustenance thereupon for accomplishment of national objectives. An expeditionary operation may also encompass amphibious operation(s), wherein land forces are

inserted, supported and sustained by sea. Among the essential pre-requisites for expeditionary capability are 'long-legged' and stable sealift ships, equipped with integral vectors (landing craft and airlift assets) and C⁴ facilities, besides logistic-lift platforms for sustaining the operation for prolonged periods.

Trade Warfare

Trade Warfare is a strategy of interdicting the enemy's SLOCs and targeting his merchant marine, to weaken their economy and war-fighting capabilities. This can be done by Sea Control or Sea Denial measures and requires a higher level of MDA on the identity and movement of enemy shipping. Trade warfare faces significant challenges in the contemporary maritime environment due to carriage onboard foreign-flagged vessels, practices like false-flag operations to counter sanctions imposed and flags of convenience (wherein a vessel is registered in a country other than that of the ship's owners) and a variety of other complicating elements such as foreign-flagged ships, different nationalities of the ship manager, ship charterer/ sub-charterer, cargo buyer or seller. Additionally, environmental impact of damage/ sinking of merchant vessels and the use of mixed nationality crew complicates enforcement, as targeting such ships raises legal and humanitarian concerns as well as risks diplomatic escalation. Notwithstanding, trade warfare remains a relevant and important facet in application of maritime power, especially as vast majority of world trade plies on the seas and disruption of the same can have a decisive effect on the adversary. Both state and non-state actors have, in recent times, resorted to trade warfare to achieve their politico-military objectives.

Trade Protection

Protection of merchant shipping against enemy action or low intensity threats is undertaken by the Indian Navy through the Naval Co-operation and Guidance to Shipping (NCAGS) Organisation. The safety of merchantmen is ensured through active and/ or passive measures, which may involve the employment of naval forces. While passive measures would include providing guidance and advice to merchant ships, active measures would comprise of routing and diversion, accompaniment, lead through, escorting and convoying.

Route diversion refers to directions issued to merchant ships to amend the standard route initially planned by a ship, to avoid likely threat(s), while *Diversion* involves the diversion of merchant ships to ports other than the intended port of call.

Accompaniment involves a voluntary arrangement, wherein merchant ships are organised for passage through a specific high-risk area in company of naval forces. *Lead through* is designed for ensuring safe navigation and to minimise the risk to

merchant ships transiting through mined areas. *Escorting* involves the protection provided by a naval platform assigned to accompany another naval combatant or merchant vessel.

A *Convoy* refers to a number of merchant ships or naval auxiliaries, or both, usually escorted by naval assets, and assembled and organised for the purpose of transit together. Convoying protects vulnerable merchant ships and auxiliaries from enemy action and ensures economy of effort, whilst increasing the probability of the ships reaching their destination safely. The decision to convoy would depend on various factors, such as criticality of cargo, enemy opposition, available sea room, vulnerability to interdiction and alternative routes.

Blockade

Blockade is a belligerent operation – an *act of war* – aimed to prevent vessels of all nations from entering or exiting specified ports or coastal areas, belonging to, or under the control of an enemy nation. The primary purpose of a blockade is to deny the enemy reinforcements, re-supply and maritime trade, thus degrading his war-waging capability. Blockade can also be used to enforce sanctions.

To be recognised under international law, blockade must be declared and notified to all concerned. It should be effective and applied impartially to ships of all nations. Blockade must not bar access to or departure from neutral ports. Although neutral warships do not enjoy any right of access to blockaded areas, the belligerent imposing blockade may authorise their entry and exit. Since Blockade, as per international law, is an act of war, nations have instead used terms like quarantine, enforcement, decisive sea areas etc. in the past to avoid legal and diplomatic ramifications although the actions therein were consistent with enforcement of a Blockade.

Visit, Board, Search and Seizure (VBSS) Operations

A belligerent nation is one that is engaged in an international armed conflict, whether or not a formal declaration of war has been made. Every belligerent warship possesses the right of visit and search, whilst not encroaching into the waters of a neutral country, to determine their true character (enemy or neutral), nature of the cargo (contraband or not), manner of employment (innocent or hostile) and other features relevant to the ongoing conflict.

Visit and search by an aircraft is accomplished by directing and escorting the vessel to the vicinity of a belligerent warship or to a belligerent port. Visit and search of an aircraft by another aircraft may be accomplished by directing the former to proceed under escort to the nearest convenient airfield. Details of such operations during wartime are contained in INBR 1652. However, it bears emphasis



that there is no right of visit and search in the waters of a neutral country, warships and neutral vessels engaged in government service and neutral merchant vessels escorted by neutral warships of the same nationality.

VBSS by maritime forces during LIMO is undertaken at the lower end of the conflict spectrum to ensure the state's customs regulations and to maintain 'good order' in the maritime zones. At the higher end, it could be part of an anti-piracy operation on the high seas, or even a multi-national/ UN-mandated anti-terrorist campaign in territorial sea of a foreign state. VBSS is, however, subject to guidelines of international law (Article 110 of UNCLOS is relevant) and national laws.

Exclusion Zones

Exclusion Zones, such as the Maritime Exclusion Zone (MEZ), Total Exclusion Zone (TEZ) and Mobile Maritime Exclusion Zone (MMEZ) offer a means of simplifying the identification problem that eases application of combat power in the defined zone. It is to be noted that Laws of Armed Conflict continue to apply in an Exclusion Zone and enemy character of a vessel in the Zone needs to be established before application of offensive power. However, to facilitate expeditious pursuance of naval missions, the onus of establishing innocence or neutrality is shifted to the vessels in the Zone requiring them to communicate their presence and accurate Position and Intended Movement (PIM) to the Zone promulgating force/nation. Historical experience suggests that merchant shipping normally respects Exclusion Zones.

An option that has been frequently used by some countries as an alternative to Exclusion Zones, is the promulgation of danger or safety zones by issuing suitable NAVAREA warning. NAVAREA warnings provide alternative, legal means of issuing an advisory notification to mariners and aircraft operating in the demarcated area. They serve the purpose of issuing a warning to the world at large of a nation's right to self-protection and the operations that may be necessitated.

Operational Logistics (Op Log)

The key attributes of mobility and sustained reach of maritime forces across vast distances and varying theatres, are premised on operational logistics. Op Log comprises means, resources, organisations and processes that share the common goal of sustaining naval operations. Op Log is not only crucial to sustainment of forces but also regeneration of combat capability in the event of its degradation. One of the primary determinants of a blue-water navy (Navy that is capable of sustained naval operations, including warfighting globally) is excellent logistics support and services across all levels of Command viz, Strategic, Operational and Tactical.

Naval operational logistics is unique as there can be no fixed bases at sea unlike the land and air domain. A naval task force consequently needs to be logically self-sufficient at sea for prolonged durations and is supported by Fleet Support Ships/ Auxiliaries, Ships Taken Up From Trade (STUFT), IN and Indian Air Force (IAF) aircraft. Operational logistics support at sea is organically provided with Fleet Support Ships being an integral part of the formation. These ships can also have specialised facilities and trained manpower for conduct of repairs and maintenance beyond the capacity of warships. Navies also set up Forward Operating Bases (FOBs) within and outside the nation (with host nation support and facilitation), to support distant naval deployments. Contracts with national shipping agencies and aviation organisations are concluded to assure provision of logistics services beyond the capacity of the Navy.

Efficient and effective sustenance of forces during operations requires a thorough and persistent *operational logistics planning process* cycle that is synchronised and integrated with the *operational planning process*. Use of Artificial Intelligence (AI) and Machine Learning (ML) driven Operational Research, System Analysis, Decision Support Systems/ tools and secure Enterprise Resource Planning networks are especially useful in logistics planning, monitoring and execution. Joint operational logistics is a particularly important initiative being progressed to serve the principle of economy of effort through resource optimisation, avoid duplication/ wastage and better integration among the three services.





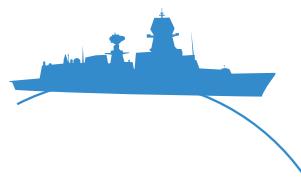
7

ROLES OF THE INDIAN NAVY



7

ROLES OF THE INDIAN NAVY



Do not just reveal your strategy. Be determined to execute it.

- Chanakya Niti 2.7



Preamble

 The navy is a versatile and potent instrument of national power, which can shape the maritime environment and safeguard national interests. In the application of maritime power, navies perform several roles, each with a distinct set of missions and tasks. Navies traditionally operate in international waters well beyond the territorial seas of a nation, mostly at considerable distances from home shores. Accordingly, the Indian Navy's military capability and force levels need to be built around a 'balanced fleet' with adequate reach and combat power, so as to meet the needs of its various roles, objectives, missions and tasks. The IN is complemented in its roles by other agencies such as the Indian Coast Guard (ICG), Marine Police, Central Industrial Security Force (CISF) – Maritime Wing, Border Security Force (BSF) – Water Wing and the Customs Marine Wing, along with other National and State Govt agencies, which together work in close coordination to achieve the national maritime security objectives.

Roles, Objectives, Missions and Tasks in Perspective

The roles, objectives, missions and tasks of a navy encompass its core activities and describe what the navy does, across the spectrum from peace to war. Hence, they determine the way in which the navy would need to be employed, organised, equipped, trained and developed, as well as the means needed in terms of force levels, structures, RoE and joint support from other armed forces and government agencies.

In context of military operations, the relation between role, objective, mission and task can be seen in their definitions: -

- **Role** is the function and enduring purpose assigned to a military force.
- **Objective** is a clearly defined, decisive and attainable goal towards which every military operation is directed.
- **Mission** is a clear and concise statement of the task of the command, together with the purpose, that indicates the action to be taken towards the attainment of the objective(s) enshrined in the mission.
- **Task** is a specific piece of work and it defines the precise activity and its sphere towards accomplishment of the mission. Achievement of a mission comprising various interrelated tasks would necessarily involve deploying of naval assets for various operations.

In the application of maritime power, the **Roles** of a navy are the broad and enduring purposes that govern the establishment and *raison d'être* of that navy. In the performance of these roles, various **Objectives** would need to be attained, which focus the efforts and determine the fulfilment of that role. In order to attain the objectives, naval forces are deployed on specific **Missions**. In accomplishing the mission, naval forces have to perform a variety of operational and tactical level **Tasks**, which span the entire spectrum of maritime operations. The roles, objectives, missions and tasks of the Indian Navy along with the Maritime Security Influences and Imperatives which drive these have been further articulated in the Indian Navy's strategy document.

Roles of the Indian Navy

Maritime security is vast, ranging from high intensity warfighting at one end of the spectrum to humanitarian assistance and disaster relief operations at the other end as brought out earlier in Chapter 2. The Indian Navy is involved in the full range of maritime security operations across this wide spectrum and spanning all roles of the *IN* to ensure the nation's maritime security, economic development, marine environment and human security at and from the seas. This broad continuum of operations can be broken down into distinct roles, each demanding a specific approach to the conduct of operations. Accordingly, the four main roles envisaged for the *IN* are as follows:-

- Military.
- Diplomatic.
- Constabulary.
- Benign.

These four roles together ensure that the Indian Navy contributes effectively towards the overall maritime security of the Nation and achieves the National Security Objectives. Multiple roles are usually performed by naval ships in a deployment either concurrently or consecutively, with little or no physical change to the force structure, to meet the threats to maritime security. For eg, a naval ship mission deployed in the Gulf of Aden typically involves Military (exercises with foreign navies), Diplomatic (port visits), Constabulary (anti-piracy operations) and Benign roles (contingency such as SAR/ assistance to vessel in distress).



Military Role

The essence of the navy is its military character. In fact, the *raison d'être* of navies is to ensure that no hostile maritime power degrades their national security and interests. The navy's military role is its primary role and is characterised by the threat or use of force (physical and non-physical) at and from the sea in and from any domain or dimension. 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 by the IN through the accomplishment of specific military missions and tasks.

Military Missions are deployments undertaken by the IN in pursuance of the higher directives received. Also, each objective, either specified or implied in

the higher directive will guide and inform the development of the mission by the subordinate Commanders. A Mission Statement is a broad and clear statement of the action to be taken that specifies the elements of 'Who', 'What', 'When', 'Where' and 'Why'.



Military Tasks are actions that need to be undertaken by the *IN* in order to accomplish various military missions. Many of these tasks may be common to concurrent missions, while other missions may require dedicated tasks and resources.

Diplomatic Role

Naval diplomacy entails the use of naval forces in support of foreign policy objectives, enhance goodwill and strengthen international cooperation on the 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 three 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.

The third characteristic facilitating the diplomatic role is International Law that facilitates the freedom to use the seas and provides special status to naval ships in undertaking such roles.

Constabulary Role

The Cabinet Committee on Security (CCS), has mandated the overall responsibility of maritime security to the Indian Navy, in close coordination with the Indian Coast Guard and other stakeholders mentioned earlier. The protection and promotion of India's maritime security includes a constabulary element, especially where it relates to threats that involve use of force at or from the sea.

The increasing incidence of maritime crime has brought into sharp focus the constabulary tasks that navies have to perform, to enforce law of the land or to implement a regime established by an international mandate. The range of tasks that the IN has to undertake in the constabulary role encompasses actions taken to counter piracy, terrorism, insurgency, infiltration, organised crime and includes maritime interdiction and maritime law enforcement for maintaining good order at sea. It also encompass actions for addressing marine pollution, smuggling, human trafficking, drug trafficking and other activities that undermine societal harmony and security.

Law enforcement aspects and other associated constabulary functions within the Maritime Zones of India (MZI), are the responsibility of the ICG.²⁵ The Indian Navy assists the Indian Coast Guard and other agencies concerned as part of its Constabulary functions. Additionally, the Maritime Anti-Piracy Act 2022



empowers the Indian Navy and ICG to take action against suspected pirates, including detaining and prosecuting them. Security in major harbours and ports are the purview of the port authorities, aided by CISF, customs and immigration agencies.

Benign Role

The 'benign' role is so named because violence has no part to play in its execution, nor is the potential to apply force a necessary prerequisite for undertaking these operations. Examples include humanitarian aid, disaster relief, SAR, ordnance disposal, diving assistance, salvage operations, hydrographic survey, aid to civil authorities, Non-combat Evacuation Operations (NEO) etc.



Maritime forces, because of their quick mobilisation, reach and endurance coupled with effective command and control abilities, are especially useful in the early stages of a crisis, to provide the first helping hand in ensuring distribution of relief material, first aid and succour to even the most remote afflicted areas. Specialised civilian agencies generally take centre stage after this initial phase, and maritime forces may thereafter be deployed to complement their efforts. The ICG is the designated national agency for coordination of Maritime Search and Rescue (M-SAR). Naval units assist in SAR operations, when requisitioned by the Maritime Rescue Coordination Center (MRCC) through the Joint Operations Center (JOCs)/Maritime Operations Center (MOCs).





LT CDR VIKAS SHARMA

BIRBAL CHAUHAN

LT CDR AAKASH SABHARWAL

LOKENDRA SINGH CHAUHAN

LT VIRAJ SINGH

KAJAL JASROTIA EAA 3

CDR PURU

SR SHARMA

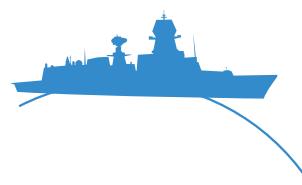
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NAVAL COMBAT POWER



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NAVAL COMBAT POWER

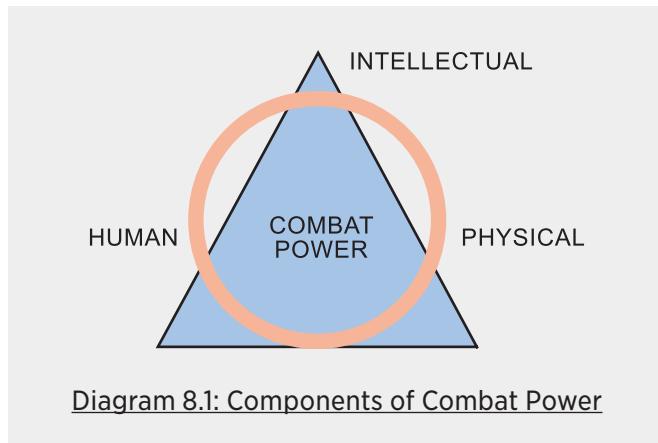


In this world, fear has no place;
Only strength respects strength.

- Dr APJ Abdul Kalam

Preamble

 Navies are inherently versatile and able to undertake operations across the peace - war continuum. For this, it is essential that the navies maintain the desired level of 'combat power' and state of readiness at all times. Combat power is a measure of a navy's ability to perform the military roles for which it was constituted. It is a synergistic blend of both tangible and intangible factors. If ships, aircraft and submarines are the hardware by which a navy performs its roles, the personnel are the human aspect behind the machines that provide the energy to drive this hardware, while sound doctrines, training/education, operating philosophies and practices provide the intellectual structure that develops this potential. Combat power can thus be considered as an amalgam of three interrelated components, namely - intellectual, physical and human.



Intellectual Component

The intellectual component provides the cognitive underpinnings for the employment of a nation's maritime assets. Naval personnel need to be capable of critical thinking, logical reasoning, astute practical application and problem solving. Education and training are at the heart of the intellectual component that impacts all levels of war and command.

Education and training ensure that naval personnel are sound of mind and equipped with the knowledge, learning and skills to perform their duty to the best of their ability. Education enables naval personnel to acquire necessary broader based knowledge to develop clear conceptual and foundational understanding of all maritime aspects, including potential exploitation of military technology. Training enables naval personnel to be skilled in their assigned duties and job specifications. Overall, education and training are fundamental in all-round and balanced development of naval personnel.

Professional Military Education (PME) to officers and personnel of the *IN* gives them the ability to develop conceptual and intellectual strength, especially in analysis, reasoning and developing new insights. PME for officers is conducted at various levels of seniority, for example, the Staff Course, Higher Command Courses and other management, defence and strategy focussed courses.



'Train as you will fight for you will fight as you train' is the central theme of training in the Indian Navy. Accordingly, it is a constant endeavor at all levels to make training as realistic, practical and skill oriented as feasible while ensuring that the foundational education facilitates the desired training objective. Technology based training has become an essential requirement and incorporates the use of simulators, Virtual Reality (VR) and Augmented Reality (AR), smart classrooms and networked resources to enable better skilling.

Principles of War, development of Concepts, Doctrines and Strategies – as elaborated in previous Chapters – form the bedrock for deployment of forces and application of combat power. These provide coherence and uniformity in conceptual understanding that facilitates development of a winning plan in shortened timelines.

Physical Component

The physical component is the most visible element of combat power; viz, ships, submarines, aircraft and other specialised equipment. They form the hardware that ultimately delivers combat power and through its physical form projects the country's military might, technological prowess, combat readiness and national resolve.

Aircraft Carrier and Carrier Task Force (CTF)

Sea control is central in force structuring of the Indian Navy. The aircraft carrier plays a vital role in establishing Sea Control as it is primary platform for projecting and protecting naval power at and from the sea.

Aircraft carriers usually operate with a composite task force, including multi-purpose destroyers, frigates, SSNs, autonomous platforms and Fleet Support Ships. The Carrier Task Force (CTF) is a self-contained and composite balanced force, comprising one or more Carrier Battle Groups operating singly or together, with extended reach and rapid response capability. The CTF possess a very high order of ordnance delivery capability and can undertake the entire range of operational tasks, including presence, surveillance, maritime strike, Anti Surface Warfare (ASuW), Anti Submarine Warfare (ASW), Anti Air Warfare (AAW), Air Defence (AD), Electronic Warfare (EW), *et al*, at extended ranges.



Destroyers and Frigates

The traditional dividing line between Destroyers and Frigates lay in their role, tonnage and size. Destroyers are large, heavily armed ships designed for multi-dimensional engagement and capable of delivering a high volume of firepower, with long sustenance capabilities. Frigates, while also being capable of multi-dimensional engagement, are smaller, more agile and with comparatively lesser firepower vis-à-vis Destroyers. The designation of destroyers and frigates, in fact, varies across



different navies, with no fixed parameters of distinction. In the IN, multi-purpose warships of 3,000 to 6,000 tons displacement are generally classified as Frigates, while those between 6,000 and 10,000 tons are termed as Destroyers. Destroyers and Frigates are normally upwards of 120m in length and equipped with a helicopter deck and hangar.

Corvettes

Unlike frigates and destroyers, corvettes are comparatively smaller ships that are designed for specific roles, which could be ASuW, ASW or AAW with other necessary versatilities. These ships are fitted with a wide array of weapons and sensors to undertake both offensive and defensive operations in their designed roles. Their size normally varies between 500 and 3,000 tons displacement with a length of up to 100m approximately. Corvettes are normally capable of helicopter operations but may not have a helicopter hangar.

Offshore Patrol Vessels (OPV)

OPVs are designed for constabulary tasks against low intensity threats, such as anti-piracy, anti-poaching, counter-infiltration, etc. and for undertaking presence and surveillance missions in areas of interest within and outside the MZI. Though OPVs have lesser combat power than Destroyers and Frigates, they have high endurance and good surveillance capabilities. They normally displace approximately 1,500 – 3,000 tons and are equipped with a helicopter deck and hangar.

Minor War Vessels

These are smaller warships characterised by limited endurance, sea keeping ability and designed for specific operational functions as compared to corvettes and above type of warships. Minor war vessels include Missile Boats, ASW Shallow Water Craft (ASW-SWC), Coastal Patrol Vessels, Fast Attack Craft (FAC) etc. Minor war vessels are normally around 50m long with a displacement of about 500 to 1000 tons.

Submarines

Submarines are an essential component of a Sea Denial strategy. They effectively exploit their stealth characteristics and the opaque underwater environment to undertake operations using torpedoes, mines and anti-ship or land attack missiles. They can also be used for ISR, insertion of Special Forces, trade interdiction and for affecting operations ashore. The Indian Navy operates nuclear and conventional powered submarines. Nuclear powered attack submarines (SSNs) provide flexibility in operations, due to their speed and sustained operational

endurance. The nuclear-powered ballistic missile submarines (SSBNs), form an important part of the nation's nuclear triad, ensuring credible deterrence through an assured second strike capability. Conventional (non-nuclear powered) submarines are capable of operating in shallow waters but are greatly limited in endurance compared to nuclear powered submarines. When equipped with Air Independent Propulsion (AIP) systems these conventional submarines, have an enhanced endurance.

Mine Warfare Vessels

These primarily refer to Mine Counter Measures (MCM) ships, required to defend and clear sea-mines. They are equipped with high definition SONARs and uncrewed systems to undertake their missions.. These may be further subdivided into mine-sweepers or mine-hunters depending on the method used to clear mines. They are designed to have minimal magnetic and acoustic signature in order to reduce their vulnerability to actuate mines during the mine clearance operations.

Amphibious Forces

Amphibious operations integrate virtually all types of ships, aircraft and submarines in a concerted joint military operation with our sister services. The Indian Navy uses a variety of landing craft like Landing Platform Dock (LPD), Landing Ship Tank (LST) and Landing Craft Utility (LCU) for landing troops, tanks/vehicles and equipment ashore. These warships are also particularly useful during Humanitarian Assistance and Disaster Relief (HADR) operations due to their large storage capacity.



Auxiliaries

Auxiliaries include, Fleet Support Ships (FSS), Training Ships (including sail training ships), Survey Ships, Diving Support Vessels (DSV), Deep Submergence Rescue Vessels (DSRV), Research Ships, Multi-Purpose Vessels (MPVs), Ocean Going Tugs (OGT), Ships-Taken-Up-From-Trade (STUFT), Torpedo Recovery Vessels (TRV) and other specialised ships. Each of these have specific functions that develop and support naval capability. The reach, persistence and sustenance of the Navy is enhanced by the availability and capacity of Fleet Support Ships that provide ammunition, fuel, rations, water, equipment and stores to the fleet through

Underway Replenishment (UNREP) at sea. STUFT may be used to augment the FSS in replenishment of ships at sea and for transport of personnel/ equipment during operations.

Uncrewed Systems

Uncrewed Systems (with varying degrees of human control or supervision) are changing the character of warfare with their military utility and impact on maritime operations. In the maritime domain, these systems are deployable above, below or on the sea surface. Accordingly, they are classified as Uncrewed Aerial Systems (UAS), Uncrewed Underwater Vehicles (UUV) or Uncrewed Surface Vessels (USVs).



They can operate singly or in a group or swarms and could be of low or high endurance. Hybrid uncrewed systems are capable of multi-domain operations, which further enhances the scope and range of the roles. They can carry combat payload, in addition to a variety of sensors for short or long endurance ISR missions and operate in high-risk zones without endangering the lives of personnel. Effective exploitation of these platforms necessitates efficient, secure and high-bandwidth networked operations and use of big data analytics, Artificial Intelligence (AI) and Machine Learning (ML), to collect, process, analyse and disseminate the massive volume of data and information.

Naval Air Arm

The naval air arm is a vital component of the Navy's fighting and operational strength. It comprises the entire inventory of fixed and rotary wing aircraft, including uncrewed systems and associated elements to enable maritime air operations.

Integral Air Assets

The integral air element comprises carrier borne fixed and rotary wing aircraft, ship-borne helicopters and UASs. Integral air power at sea (crewed and autonomous) extends the combat reach and rapid response



capability of the force. They are used for surveillance, ASW, ASuW, AEW and AD tasks and are vital force multipliers, essential to warfighting and any operational task necessitating force protection, either at or from the sea.

Maritime Reconnaissance/ Patrol Aircraft

Maritime reconnaissance aircraft are invaluable assets for keeping large areas under surveillance and enabling development of MDA. In their Long Range Maritime Patrol (LRMP) role, these platforms deploy a wide range of sensors and weapons to conduct ASW and ASuW operations at extended ranges from own shores. These aircraft are also capable of enabling cooperative engagement by guiding maritime strikes at sea by other aircraft, ships and submarines. UAS can also undertake long range extended surveillance operations often exceeding the endurance and thus the reach, of a manned LRMP.



Joint and Integrated Operations

Naval forces are geared for undertaking joint operations such as Amphibious Operations and Joint Maritime Air Operations (JMAO) among other joint operations with other sister services. This versatility of maritime power offers the planner a broad range of military options to achieve specific national objectives. As brought out earlier, maritime power projection in the form of a CBG ensures persistent presence even at long distances from own ports. However, conflict management requires a *whole of nation approach*, with political, diplomatic, economic, societal elements and multiple government agencies cooperating towards bringing distinct professional, technical and cultural disciplines together, for achieving the desired political and strategic objectives. This ensures cross leveraging of capacities and efficient, optimised and integrated responses through network-centric operations.

Special Forces Operations

Special Forces (SF) or the Marine Commandos (MARCOS) are elite units designed to progress operations in remote areas that are hostile, defended, culturally sensitive and beyond the reach of naval forces, both in time and space. Special Operations entail use of SF to target military-strategic or vital operational assets of the enemy, towards attaining the military objectives. SF operations can be

a separate mission and can also comprise a set of tasks in support of a range of other missions. MARCOS may also conduct clandestine raids as part of specific missions. They may also be tasked for combating terrorism in a maritime environment including rescue of hostages. They are the only special operations force, which can operate in all three dimensions - surface, underwater and air.



Network Centric Operations

Information and Communications Technology (ICT) driven changes have ensured that the Indian Navy and sister services are invested in Network Centric Operations (NCO) with enhanced battlespace awareness and informed decision making. This has compressed the decision cycle and enabled a higher tempo of operations. Simultaneously, offensive and defensive cyberspace capabilities provide the ability to exploit, degrade or disrupt adversary networks, whilst ensuring protection of own systems and information. In addition, Artificial Intelligence (AI) and Machine Learning (ML) are increasingly being leveraged to process vast volumes of sensor and operational data in real time, generate predictive analytics, enable autonomous decision-support tools and enhance threat detection, thereby multiplying the effectiveness of NCO and providing a decisive operational edge.

Space Capabilities

Space based communications and surveillance are at the core of modern naval operations and provide inputs to enhance MDA and enable networked operations to facilitate accurate and precise targeting. 'The Indian Navy Space Vision 2025-40' addresses the IN's space-based communication, ELINT, Position Navigation & Timing (PNT), remote sensing and surveillance requirements, as also the space force application and security services. While space-based operations offer immense strategic advantages, they also introduce new vulnerabilities such as Anti Satellite (ASAT) threats, cyberattacks and EW risks, which require to be mitigated to ensure operational superiority.

Indian Coast Guard

The Indian Coast Guard was created with the objective of having a specialised marine armed force of the Union to ensure security of the maritime zones of India. The primary responsibilities of the ICG include protection of the offshore assets of the country including oil, fish and minerals, M-SAR, safeguarding life and property at sea, enforcing maritime laws against poaching, smuggling and narcotics, preservation of the marine environment and ecology including pollution control, protection of endangered marine life and assistance to the scientific community for collection of scientific data within the maritime zones of India. The Indian Navy and Indian Coast Guard maintain close operational coordination in peacetime. In times of conflict, nominated units of the Indian Coast Guard would function under the operational control of the Indian Navy.



The Human Component

The Indian defence forces, apart from contributing to defence and security also provide a distinctive strand in the multi-hued fabric of our nation through high standards of integrity, professionalism and excellence. The core strength of the defence forces is the human resource



– the men and women, who exemplify the collective ethos, ‘Service Before Self’. **Duty – Honour – Courage** signifies the key values meant to inspire and exhort the human component of the Navy to the highest standards of professional and personal conduct. The three key aspects viz, Leadership, Teamwork and Organisation in the context of Duty – Honour – Courage are relevant in the human component.

Leadership

Leadership in the maritime environment has certain nuances that distinguish it from other domains. Unique rigours of life at sea, relative isolation from land, close proximity of officers and men in the highly confined working and living space onboard naval vessels places unique demands on the leadership. Leaders in such an environment can neither be aloof, nor too proximate. All qualities – professionalism, personal abilities, sense of justice, physical and moral courage, stability in stressful

circumstances, etc. are placed under close scrutiny of the personnel under the command of an officer or sailor. Naval leaders must strive to inspire and motivate personnel under their command to higher ideals and mission accomplishment by good personal example. It is the leadership that is first and foremost expected to personify in deed and action, the value system of Duty – Honour – Courage.

Teamwork

There is no 'I' in teamwork. Cohesive and strong teamwork across all arms and branches of the Indian Navy and departments in a naval unit, is essential for successful accomplishment of assigned tasks. Teamwork ensures a common and shared sense of identity and ownership towards a synergised and unified effort. This requires the personnel to understand and imbibe organisational goals and willfully contribute their part in achievement of the assigned tasks and focus on the greater good. Mutual respect, trust, loyalty, fairness and dignity, across the organisation and chain of command, are essential attributes to develop a cohesive force united in thought and action. Effective team-building within the organisation is a leadership imperative and task, which is best achieved by nurturing a fair and conducive environment that encourages participation, instills pride, sense of ownership and belongingness and an ardent desire to take the initiative for task accomplishment.



Organisation

Effective naval leadership, administration and management depend on organisational efficiency and effectiveness. An organisation is larger than any individual and becomes an unstoppable force when its personnel and sub-components work together harmoniously as a cohesive team to accomplish specific tasks. A well-organised organisation fosters a nurturing and positive culture that supports personal and professional growth.

A robust, healthy and positive organisational culture is characterised by effective leadership, strong teamwork, a learning culture that empowers personnel, spirit of innovation and HR practices that are transparent, fair and just. A strong and vibrant organisational culture takes decades to develop and needs to be zealously guarded by visionary, purposeful leadership and resolute adherence to the defence forces ethos of 'Service Before Self' and the core Naval values of *Duty – Honour – Courage*.







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Abbreviations

| | |
|-------|--|
| AAW | Anti-Air Warfare |
| AD | Air Defence |
| AEW | Air Early Warning |
| AI | Artificial Intelligence |
| AIP | Air Independent Propulsion |
| AR | Augmented Reality |
| ASAT | Anti Satellite (Weapons) |
| ASuW | Anti-Surface Warfare |
| ASW | Anti-Submarine Warfare |
| BBNJ | Biodiversity Beyond National Jurisdiction |
| BIOT | British Indian Ocean Territory |
| BSF | Border Security Force |
| C2 | Command and Control |
| C4 | Command, Control, Communications and Computers |
| CBG | Carrier Battle Group |
| CBM | Confidence Building Measures |
| CCS | Cabinet Committee on Security |
| CDS | Chief of Defence Staff |
| CIOB | Central Indian Ocean Basin |
| CISF | Central Industrial Security Force |
| COSC | Chiefs of Staff Committee |
| CTF | Carrier Task Force |
| DSRV | Deep Submergence Rescue Vehicle |
| DSV | Diving Support Vessel |
| EEZ | Exclusive Economic Zone |
| ELINT | Electronic Intelligence |
| EV | Electric Vehicle |
| EW | Electronic Warfare |
| FAC | Fast Attack Craft |
| FOB | Forward Operating Base |
| FOL | Fuel, Oil and Lubricants |
| FSS | Fleet Support Ship |
| GDP | Gross Domestic Product |

| | |
|-------|---|
| GRT | Gross Registered Tonnage |
| GZO | Grey Zone Operation |
| GoI | Government of India |
| HADR | Humanitarian Assistance and Disaster Relief |
| IAF | Indian Air Force |
| ICG | Indian Coast Guard |
| ICT | Information and Communication Technology |
| IDA | Information-Decision-Action (cycle) |
| IHL | International Humanitarian Law |
| IN | Indian Navy |
| INBR | Indian Naval Book of Reference |
| INS | Indian Naval Ship |
| IOR | Indian Ocean Region |
| ISA | International Seabed Authority |
| ISL | International Shipping Lane |
| ISR | Intelligence, Surveillance and Reconnaissance |
| IUU | Illegal, Unreported, Unregulated (Fishing) |
| JMAO | Joint Maritime Air Operations |
| JOC | Joint Operations Centre |
| LCU | Landing Craft Utility |
| LIC | Low Intensity Conflict |
| LIMO | Low Intensity Maritime Operations |
| LPD | Landing Platform Dock |
| LRMP | Long Range Maritime Patrol (aircraft) |
| LST | Landing Ship Tank |
| MAO | Maritime Air Operations |
| MCM | Mine Counter Measures |
| MDA | Maritime Domain Awareness |
| MDO | Multi Domain Operations |
| MEZ | Maritime Exclusion Zone |
| ML | Machine Learning |
| MMCB | Mobile Missile Coastal Battery |
| MMEZ | Mobile Maritime Exclusion Zone |
| MOC | Maritime Operations Centre |
| MPV | Multi Purpose Vessel |
| MRCC | Maritime Rescue Coordination Centre |
| M-SAR | Maritime Search and Rescue |

| | |
|---------|---|
| MZI | Maritime Zones of India |
| NAVAREA | Navigational Area |
| NCO | Network Centric Operations |
| NCAGS | Naval Cooperation and Guidance to Shipping |
| NEO | Non-combatant Evacuation Operations |
| NMDA | National Maritime Domain Awareness |
| NSC | National Security Council |
| NSP | Naval Strategic Publication |
| NWNP | No War No Peace |
| ODA | Offshore Development Area |
| OGT | Ocean Going Tug |
| OODA | Observe Orient Decide Act |
| OPLOG | Operational Logistics |
| OPV | Offshore Patrol Vessel |
| PME | Professional Military Education |
| PNT | Position Navigation Timing |
| REE | Rare Earth Element |
| RIN | Royal Indian Navy |
| ROE | Rules of Engagement |
| SAR | Search and Rescue or Synthetic Aperture Radar |
| SLOC | Sea Lines of Communication |
| SONAR | Sound Navigation and Ranging |
| SPM | Single Point Mooring |
| SSBN | Ship Submersible Ballistic Nuclear (Submarine) |
| SSN | Ship Submersible Nuclear (Submarine) |
| STUFT | Ships Taken Up From Trade |
| SWC | Shallow Water Craft |
| TEZ | Total Exclusion Zone |
| TRV | Torpedo Recovery Vessel |
| UAS | Uncrewed Aerial System |
| UDA | Underwater Domain Awareness |
| UNCLOS | United Nations Convention on the Law of the Sea |
| UNREP | Underway Replenishment |
| USV | Uncrewed Surface Vessel |
| UUV | Uncrewed Underwater Vehicle |
| VBSS | Visit, Board, Search and Seizure (operations) |
| VR | Virtual Reality |

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