INDIAN NAVAL ACADEMY

Shaping Future Naval Leadership...





'DILLI SERIES' SEA POWER SEMINAR- 2026
AMPLIFYING INFORMATION

1. Located at Ezhimala, in the Kannur district of the state of Kerala, Indian Naval Academy (INA) is amongst the premier armed forces institutions of our country. It is through the hallowed portals of the INA that all officer-trainees joining the Indian Navy and the Indian Coast Guard pass out, in their progression to join the officer-corps of respective services. The academy follows a system of holistic training that caters to the physical, intellectual and socio-cultural development of each cadet. In preparing its trainees for the myriad challenges of military leadership that they will encounter at sea, on land, in the air, as also in both 'outer' and 'inner' (cyber) space, INA actively promotes academic and professional excellence.

2. Named after the historic Mount *Dilli* hill located within INA premises, the '*Dilli* Series' Sea Power Seminar is conducted at INA during Autumn Term (October) every year.

3. The theme of the thirteenth edition of the seminar to be held at INA on 14-15 Oct 26, is **'From Spice Routes to SLOCS and Sails to Silicon- Sea Power and the Indian Ocean Across Millenia'**. The seminar aims to explore evolution of sea power in the Indian Ocean across millennia from ancient trade routes to contemporary maritime security challenges. It examines how the Indian Ocean has remained a decisive arena of trade, culture, technology and strategic competition from ancient times to the digital age. It highlights the evolution of sea power – from wooden sailing vessels carrying spices and ideas to networked naval forces supported by satellites, artificial intelligence and digital infrastructure. Sub themes for the seminar are as follows: -

3.1. History of Indian Ocean Trade Routes.

3.2. Evolution of Sea Power in Indian Ocean.

3.3. Technological Transformation of Naval Power.

3.4. Competition, Cooperation and Sustainable Security.

Note: Details of topics under each sub-theme are mentioned on subsequent pages

4. **Selection of Papers**.

4.1. Only selected papers shall be presented during the seminar.

4.2. Of the remaining papers received, the papers with requisite quality and content will be published in the Seminar Compendium.

4.3. Authors of selected papers will be intimated post scrutiny of papers.

5. **Instructions for Authors.** Soft copies of synopsis (250-300 words) and final paper (3000 to 5000 words) along with the author's biodata, passport size photo and security clearance/ author's certificate as per the guideline enclosed are to be forwarded by e-mail at inaseminar-navy@nic.in by 05 Aug 26.

Contact Details

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6. Considering that the seminar is primarily for the benefit of trainees at INA, it is expected that the papers apart from being intellectually stimulating, thought provoking and rich in academic rigour, would also cater for the envisaged learning outcome for the trainees as mentioned against each topic.

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SUB-THEME I
HISTORY OF INDIAN OCEAN TRADE ROUTES

1. For over four millennia, the Indian Ocean has served as one of the world's most important maritime highways, connecting East Africa, the Middle East, South Asia and Southeast Asia through extensive networks of trade, cultural interaction and maritime innovation. Long before the emergence of modern globalisation, the Indian Ocean facilitated movement of goods, people, religions, technologies and ideas, creating an interconnected maritime world whose legacy continues to shape contemporary global supply chains.

2. The history of Indian Ocean trade routes is not a story of commerce but also one of cultural exchange and civilisational interaction. From the third millennium BCE, maritime trade linked the Indus Valley with Mesopotamia, establishing some of the earliest long-distance economic connections in human history. Over the centuries, Indian, Arab, Persian, African and Chinese sailors developed extensive maritime networks that connected diverse societies across thousands of nautical miles. These routes enabled exchange of spices, textiles, precious stones while simultaneously facilitating the spread of religions, ideas and knowledge. Hinduism and Buddhism travelled from India to Southeast Asia, influencing the rise of powerful maritime kingdoms, while Islam spread through merchant networks across East Africa, the Arabian Peninsula, India and Southeast Asia. Languages, artistic traditions, architectural styles, scientific knowledge and navigation techniques moved alongside traders, transforming ports such as Muziris, Calicut, Aden and Malacca into cosmopolitan centres of commerce and culture. The Indian Ocean thus emerged as one of history's most dynamic zones of interaction, where maritime connectivity fostered both economic prosperity and cultural integration.

3. The predictable monsoon winds made long distance navigation possible. Seasonal southwest and northeast winds enabled sailors to undertake voyages with remarkable reliability, transforming the ocean from a geographical barrier into a maritime bridge. Mastery of these trade winds reduced risks, lowered costs and encouraged the growth of merchant communities that linked East Africa, the Middle East, South Asia and East Asia into one of the world's earliest integrated economic regions. The monsoon system effectively laid the foundations of a maritime network that prefigured many characteristics of modern globalisation.

4. The strategic significance of these routes grew further with the flourishing spice trade, which attracted European powers seeking access to the lucrative markets of the East. The arrival of Portuguese, the Dutch, French and British reshaped regional commerce and intensified competition for control of maritime routes. Despite colonial intervention, the Indian Ocean retained its central role in global trade. Over time, the ancient spice routes evolved into modern Sea Lines of Communication (SLOCs), carrying industrial goods, energy resources and containerised cargo across continents.

5. Today, the Indian Ocean remains a vital artery of the global economy, facilitating a substantial share of international trade and energy transportation through critical chokepoints such as the Strait of Hormuz, Bab-el-Mandeb and the Strait of Malacca. Modern ports, container terminals, digital logistics systems and integrated supply chains represent the contemporary

evolution of the ancient maritime networks that once relied on monsoon winds. While the technologies of trade have changed, the underlying principle remains unchanged, maritime connectivity drives economic integration and strategic influence.

6. The history of Indian Ocean trade routes therefore reflects a remarkable continuity from ancient maritime cultural exchange to modern global supply chains. The Indian Ocean has not merely connected regions, it has shaped civilisations, fostered globalisation across millennia and continues to remain central to international trade, security and economic development.

Topics and Learning Outcomes.

7. Papers are invited on the following topics: -

Ser	**Topic** a.	**Learning Outcomes for Trainees** b.
7.1	Ancient Ports and Modern Maritime Hubs	Understand the evolution of ports as centres of trade, connectivity and maritime power and appreciate their continuing strategic significance.
7.2	Maritime Cultural Exchange Across the Indian Ocean	Examine how maritime interactions facilitated exchange of ideas, religion, technology and culture across Indian Ocean littoral and its significance.
7.3	Ports as Engine of National Power	Understand how ports serve as critical enablers of national power by drawing economic growth, strengthening maritime security and enhancing geopolitical influence.

SUB-THEME II
EVOLUTION OF SEA POWER IN INDIAN OCEAN

1. The Indian Ocean has long occupied a central position in the evolution of global sea power, where commerce, culture and conflict have intersected for centuries. Its strategic significance arises from its role as the connective maritime space between the East and West, linking the resource rich Middle East, the industrial economies of East Asia and the maritime chokepoints that regulate global trade flows. The evolution of sea power in the Indian Ocean reflects a layered history of indigenous maritime traditions, colonial rivalry, post-colonial realignments and contemporary power competition, shaped by geography and control over sea lanes.

2. In the pre-colonial era, the Indian Ocean was characterised by vibrant networks of trade and cultural exchange, often described as a ‘monsoon-driven maritime highway’. Seasonal wind systems enabled predictable navigation, fostering commercial linkages between the Indian subcontinent, the Arabian Peninsula, East Africa and Southeast Asia. Indian, Arab and Chinese merchants played a dominant role in this interconnected maritime world. Ports along the Malabar Coast, East Africa's Swahili Coast and the Strait of Malacca flourished as cosmopolitan hubs of exchange, reflecting an early form of maritime globalisation anchored in cooperation rather than coercion.

3. The arrival of European colonial powers marked a decisive transformation in the nature of sea power in the Indian Ocean. Beginning in the late 15th century, the Portuguese established a naval presence by force, seeking to control lucrative spice trade routes. This was followed by the Dutch, French and ultimately the British, whose maritime dominance became the defining feature of the colonial Indian Ocean order. The British Empire, transformed the Indian Ocean into an imperial lake through a maritime system centered on control of sea lanes and strategic ports such as Bombay, Aden and Colombo. This era demonstrated how naval dominance could directly translate into political and economic control over vast continental spaces.

4. At the core of Indian Ocean geopolitics lies its unique maritime geography, defined by a series of critical chokepoints that regulate global trade and energy flows. These narrow passages function as strategic bottlenecks where maritime traffic converges, making them highly sensitive to disruption and control. The Strait of Hormuz, connecting the Persian Gulf to the Arabian Sea, remains one of the most vital energy corridors in the world. The Bab el Mandeb Strait, linking the Red Sea to the Gulf of Aden, serves as a gateway between the Indian Ocean and the Mediterranean via the Suez Canal. These chokepoints form the structural backbone of Indian Ocean sea power, ensuring that control or influence over them translates into strategic leverage over global commerce and energy security.

5. Colonial competition over these maritime arteries laid the foundation for the modern strategic importance of naval bases and forward operating locations. The British developed a network of bases stretching from the western Indian Ocean to Southeast Asia, enabling sustained maritime dominance. In the contemporary era, this legacy has evolved into a dispersed network of strategic facilities operated by multiple powers. India's development of facilities such as INS *Kadamba* underscores its effort to strengthen its role as a primary resident naval power in the

region. These bases are not isolated installations but nodes in a broader strategic network that enables surveillance, logistics, and sustained naval operations across vast maritime distances.

6. It is in the 21st century that the Indian Ocean has fully re-emerged as a central arena of geopolitical contestation, driven by globalisation, energy dependence, and the rise of Asian economies. Today, the Indian Ocean is widely recognised as a pivotal geopolitical theatre where major and regional powers intersect. It carries a significant proportion of global oil shipments and containerized trade, making it indispensable to the functioning of the international economic system. Initiatives such as maritime partnerships, freedom of navigation operations and regional security architectures underscore the intensifying competition for influence over sea lanes, maritime infrastructure and strategic geography.

7. Together, these elements define the contemporary architecture of sea power in the Indian Ocean. The evolution of sea power in the Indian Ocean reflects a continuous transformation from a commercially integrated monsoon-driven maritime space to a contested geopolitical theatre shaped by colonial domination and modern strategic rivalry. While geography has remained constant, its strategic interpretation has evolved dramatically.

Topics and Learning Outcomes.

8. Papers are invited on the following topics:

Ser	Topic	Learning Outcomes for Trainees
8.1	Colonial Naval Rivalries and the Struggle for Indian Ocean Dominance	Understand how maritime competitions among colonial powers shaped control of trade routes, ports and regional sea power in the Indian Ocean.
8.2	Chokepoints, Naval Bases and Strategic Maritime Geography	Analyse the strategic importance of maritime chokepoints, naval bases and geography in influencing naval operations and sea control.
8.3	The Indo-Pacific and Emerging Maritime Alignment – QUAD and the Future Maritime Security Architecture	Understand evolving strategic dynamics of. The Indo-Pacific and the role of emerging maritime partnership, particularly QUAD, in shaping regional security. Also assess opportunities, challenges and future trajectory of cooperative maritime security architectures in maintaining a free, open and stable maritime domain

SUB-THEME III
TECHNOLOGICAL TRANSFORMATION OF NAVAL POWER

1. Naval power has historically been shaped by technological innovation. From sail-driven warships and cannon warfare to nuclear-powered fleets and precision-guided weapons, advances in technology have continuously transformed the character of maritime conflict. In the 21st century, a new revolution is underway, driven by artificial intelligence (AI), autonomous systems, cyber capabilities, big data and advanced networking technologies. As maritime competition intensifies across the world's oceans, the future battlespace will increasingly be defined not only by the size of fleets but by the ability to generate, process, protect, and exploit information. The evolution of naval warfare technology, the rise of AI and autonomy, and the growing importance of cyber and information dominance are reshaping the foundations of sea power.

2. The Industrial Revolution transformed maritime warfare through steam propulsion, ironclad warships and long-range naval artillery, fundamentally altering fleet operations and strategic reach. The 20th century witnessed even more dramatic changes with the introduction of submarines, aircraft carriers, radar, sonar, guided missiles and nuclear propulsion. Each technological breakthrough changed the balance between offence and defence, expanded the operational reach of navies, and redefined maritime strategy. Today, naval warfare is undergoing another transformational shift driven by the convergence of digital technologies and artificial intelligence.

3. The rise of autonomous systems represents another major transformation in naval power. Unmanned Surface Vessels (USVs), Unmanned Underwater Vehicles (UUVs) and maritime drones are expanding the reach of naval forces while reducing risks to personnel. These platforms can conduct intelligence gathering, surveillance, mine countermeasures, anti-submarine warfare, SAR and reconnaissance missions across vast maritime spaces. Future naval operations are likely to involve manned-unmanned teaming, where autonomous systems operate alongside conventional fleets to create distributed and resilient force structures. As technology advances, the future naval battlespace will increasingly extend beyond the traditional domains of sea, air, and undersea warfare.

4. Future conflicts may be decided not solely by the destruction of enemy platforms but by the ability to detect, track, target, and engage adversaries faster than they can respond. In this environment, speed of information processing may become as important as the speed of ships or missiles. Equally significant is the emergence of the cyber ocean as a new arena of strategic competition. Modern naval operations depend heavily on digital networks, satellite communications, navigation systems, and interconnected platforms. These dependencies create vulnerabilities that adversaries can exploit through cyberattacks, electronic warfare and information operations. A successful cyber intrusion could disrupt logistics, degrade command and control systems, compromise intelligence networks, or impair the combat effectiveness of an entire fleet without a single missile being fired.

5. The growing importance of information dominance reflects a broader transformation in the nature of naval power. Information dominance refers to the ability to collect, analyze, disseminate, and protect information while simultaneously denying the same advantage to an adversary. Modern navies increasingly invest in integrated sensor networks, cyber capabilities, electronic warfare systems, space-based surveillance, and AI-driven analytics to achieve superior maritime domain awareness. In future conflicts, control over information flows may prove as decisive as control over sea lanes and maritime chokepoints.

6. The technological transformation of naval power therefore represents a shift from platform-centric warfare to network-centric and data-centric operations. While ships, submarines, and aircraft will remain essential instruments of sea power, their effectiveness will increasingly depend on the intelligent integration of sensors, networks, autonomous systems, and cyber capabilities. The navies that successfully harness AI, autonomy, and information dominance will possess a decisive advantage in the future maritime battlespace, As the oceans enter the digital age, technological superiority is emerging as the defining factor of naval power, shaping the future of maritime security, deterrence and warfare.

Topics and Learning Outcomes.

7. Papers are invited on the following topics: -

Ser	Topic	Learning Outcomes for Trainees
7.1	Evolution of Naval Warfare Technology	Understanding the impact of technological advancements on the evolution of naval warfare, force projection and maritime strategy.
7.2	AI, Autonomy and The Future Naval Battlespace	Analyse the role of artificial intelligence, autonomous systems and emerging technologies in shaping future naval operations and decision making.
7.3	Cyber Oceans and Information Dominance	Highlight importance of cyber capabilities, information superiority and network centric operations in contemporary maritime security.

SUB-THEME IV
COMPETITION, COOPERATION AND SUSTAINABLE SECURITY

1. Maritime security in the 21st century is a continuously evolving balance between competition, cooperation, and sustainability. The oceans today form the backbone of global trade, energy movement, and digital connectivity, while simultaneously serving as arenas of strategic contestation among major and regional powers. This dual character has reshaped the maritime environment into one where economic interdependence coexists with geopolitical rivalry. Within this broader transformation, three interlinked dimensions stand out, the rise of the blue economy, the expansion of non-traditional maritime security challenges and the increasing relevance of naval diplomacy as a tool of engagement and influence.

2. The blue economy has emerged as a guiding framework for aligning maritime development with sustainability. It emphasises the use of ocean resources for economic growth while ensuring long-term ecological balance. Coastal and island states are increasingly dependent on maritime sectors such as fisheries, shipping, offshore energy and seabed resources, making the ocean a central pillar of national development strategies. However, this growing dependence has also intensified pressure on fragile marine ecosystems. Pollution, overfishing, habitat degradation and the impacts of climate variability are increasingly affecting ocean health. In response, global regulatory and governance frameworks, including the International Maritime Organisation, play a crucial role in establishing norms for maritime safety, environmental protection, and sustainable shipping practices. The blue economy thus represents a strategic convergence of economic opportunity and environmental responsibility, where long-term maritime prosperity depends on sustainable resource management.

3. Alongside this economic transformation, the maritime domain is increasingly shaped by non-traditional security challenges that blur the boundaries between military, environmental and human security. Traditional threats at sea are now accompanied by persistent issues such as piracy, illegal, unreported and unregulated fishing, maritime trafficking and cyber vulnerabilities in shipping and port infrastructure. Climate change has emerged as a major threat multiplier, affecting sea levels, coastal populations and the frequency of extreme weather events, thereby increasing the operational burden on navies and coast guards. These challenges are inherently transnational and cannot be addressed through isolated national responses.

4. In this context, maritime cooperation and naval diplomacy have become essential instruments for maintaining stability and building trust among maritime actors. Multilateral frameworks such as the Malabar Naval Exercise reflect the growing emphasis on interoperability, maritime domain awareness, and coordinated response capabilities among key Indo-Pacific navies. Regional institutions like the Indian Ocean Naval Symposium provide an inclusive platform for dialogue, capacity building, and sharing of best practices among littoral states.

5. Naval diplomacy today extends beyond traditional deterrence to encompass a wide spectrum of peacetime and crisis-response activities. These include joint exercises, coordinated patrols, hydrographic cooperation, training exchanges and humanitarian assistance and disaster relief operations. Such engagements enhance interoperability, build mutual trust and strengthen

the capacity of smaller maritime states to manage their own security challenges. Increasingly, navies are also viewed as instruments of stability, playing a key role in disaster response and regional humanitarian assistance, particularly in climate-vulnerable coastal zones.

6. The contemporary maritime order is shaped by a complex interplay of competition and cooperation within an interconnected and environmentally stressed ocean system. While geopolitical rivalry continues to influence naval modernization and strategic posturing, the shared nature of maritime risks is driving deeper collaboration across regions. The blue economy highlights the need to balance growth with sustainability, non-traditional threats underscore the interconnectedness of maritime security challenges, and naval diplomacy provides the institutional framework for collective action. Together, these forces are redefining maritime security as a domain where power, partnership, and sustainability must coexist to ensure long-term stability and resilience.

Topics and Learning Outcomes.

7. Papers are invited on the following topics: -

Ser	Topic	Learning Outcomes for Trainees
7.1	Blue Economy and Sustainable Maritime Growth	Understand the role of maritime resources, sustainable development and the blue economy in enhancing national prosperity and maritime security.
7.2	Non-Traditional Maritime Security Challenges	Analyse emerging maritime threats such as piracy, terrorism, illegal fishing, climate change and natural disasters and their impact on their regional stability.
7.3	Future Maritime Cooperation and Naval Diplomacy	Acknowledge the potential of naval diplomacy, partnership and multilateral cooperation in promoting maritime security and collective prosperity.

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SUBMISSION GUIDELINES

Contributors are requested to follow the guidelines given below: -

1. The paper should be composed in 12-point Arial single spaced font for the main body of the text, and 10.5-point Arial single spaced font for footnotes using MS Word 2013 and above. The tentative length of the paper should be 2000 – 5000 words (excluding footnotes, acknowledgements, title and sub-title). Use footnotes at the end of each page.

2. An Abstract of about 200-300 words should be included to describe the main argument and the conclusions of the paper. The Abstract should not contain footnote references.

3. The first sheet should carry details of the author's biodata (a brief resume of about 200 words), institutional affiliation, a passport-size photograph and the mailing and email address.

4. A Certificate of Authenticity, countersigned by the author, with the following details should accompany the paper: -

"The paper is the original effort of (author's name, rank, personal number) and the undersigned hereby attests that all material (tables, figures, diagrams, arguments) from primary and secondary sources has been duly cited. The paper bears no Plagiarism in any form. The paper has not been sent to any other publication and has not appeared in print or electronic medium before. The text of the paper does not contain any material above Unclassified."

5. All diagrams, charts and graphs should be referred to as Figures and consecutively numbered (Fig.1, Fig.2, and so on). Tables should carry only essential data and should complement the text rather than repeat what has already been said. They should carry a short title, be numbered (Table 1) and carry the source at the bottom.

6. Each table must be referenced in the text. If actual statements or phrases are taken from another paper, the name of the author should be mentioned in the text and the chosen material should be placed within quotation marks with an appropriate reference. Alternatively, if another author's views are to be summarised, use the formulations: 'The views of xyz are summarised'; with a crisp summary. It is a good practice to refer sources of information extensively and effectively.

7. Author's acknowledgments(s) may be included at the end of the paper and before References/ Endnotes begin.

8. The paper should have sub-headings to make it more reader-friendly.

Base Style Guide

9. Use short, crisp sentences; they add to readability.

10. Use British spelling (colour, organisation, etc).

11. Write dates in the following format: for 12 September 2018, write 12 Sep 18. However, for dates 20th century and below i.e. 17 February 1818, write 17 Feb 1818, or for 12 December 1621, write it as 12 Dec 1621.

12. In the text, write numbers in words till the number nine and then in numerals (e.g. two, four, nine; then 10,11,12 and so on).

13. Write 'per cent' and not % or percent.

14. Acronyms should carry the full form at the first mention with the acronym in bracket; and thereafter, the abbreviated version. For eg. The United Nations (UN) declared that…Thereafter, the UN did not…

15. Names of books, journals, newspapers and foreign term in the body of the text should appear in italics, eg: *Asian Security in the 21st Century*, *Strategic Analysis*, *The Hindu*.

16. While referring to currency, use ₹2,000 crores, not 2000 crores of rupees. Similarly, $ 8.5 million, not 8.5 million dollars.

17. Use lower case while referring to establishments like the government, the army, and so on. Use upper case if these are accompanied by the name of the country (e.g; the Indian Government or the Chinese Army). The president or prime minister stays lower, unless they are accompanied by the name (eg: Prime Minister Tony Blair or External Affairs Minister Natwar Singh)

References/ Endnotes

18. References/ Endnotes should be sequentially numbered.

19. The authors are responsible for accuracy of the reference.

20. Following is to be kept in mind while citing the works in references: -

While referring to a book/ chapter follow the example below: -

Padmaja Murthy, Managing Suspicions: *Understanding India's Relations with Bangladesh, Bhutan, Nepal, Sri Lanka*, Knowledge World, New Delhi, 2000, pp.59-67.

While referring to a paper in a journal: -

P.R. Rajeshwari, "Bill Richardson's Visit South Asia: A New Phase in US-South Asia Relations", *Journal of Strategic Affairs*, 36(19), May 2, 1988, pp. 26-26.

While referring to a paper presented at a conference: -

R.V. Phadke, "Security of Energy," Paper presented at the International Conference on Oil and Gas in India's Security, New Delhi, 2001, pp. 82-86. Institute for Defence Studies and Analysis, New Delhi, 2001.

While referring to an article in a newspaper: -

Kulbir Krishan, "The Pearl Abduction: who and why?" *Pioneer*, New Delhi, February 12, 2002, p.7.

While referring to a website: -

"India to become 4th largest economy in 2025 overtaking Japan," at https://timesofindia.indiatimes.com/business/india-business/big-achievement-india tobecome-4th largest-economy-in -2025 (Accessed May 05, 2025)

21. If two successive citations/ references refer to the same source, use Ibid.

22. If the same reference is to be cited after a few other references/ citations, write the name of the author followed by the citation number e.g.: Ram Kumar no.16.

23. Any submission not conforming to the above requirements is incomplete and is liable to be rejected by the Review Board. 24. By submitting the paper, the author agrees that if selected, the Copyright for the paper resides with the Indian Naval Academy (INA), and INA reserves the right to published, re-publish the paper with due credits to the author(s).

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