MARITIME
HERITAGE
OF INDIA

This is an artist's impression of the underlying theme of this book. While the over water picture viz, the 'Present', is clear and well lit, the underwater 'Past' is hazy, full of mysteries waiting to be explored.

The Indian Navy, through this book, intends to throw some light, the hazy blue light, on our maritime past to help readers identify some contours, some significant marks and some events with maritime significance to our present. Encouraging more 'under water' exploration to unearth more of our maritime heritage is intended.

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Editor's Note

This project originated from the vision of Admiral RK Dhowan, Chief of the Naval Staff, who felt that the thousands of years old maritime heritage of India, which had been covered under different publications and studies earlier, needed to be showcased in one book so that followers of this subject could get a collective glimpse of this rich and vast maritime culture. The Chief of the Naval Staff tasked the Indian Naval Academy to undertake the project in early 2015. This 'Maritime Heritage of India' book is a result of study of over a hundred books, publications, articles, papers, etc., written by subject matter experts, both, Indian and non-Indians. Discussions and interactions with prominent historians of India over the last year further provided material for this book. This book is not about 'history' but 'heritage'. When the Naval Academy team collected material from all possible sources, it could fill volumes. It was decided to restrict the size of the book to make holding and reading a pleasant experience. Therefore, the team would like to reiterate that the content is neither original nor all-encompassing, that it is meant to provide only a glimpse of the kind of heritage the present generation of Indians is privileged, and fortunate, to inherit and it is intended to whet the appetite of any interested or keen reader to research further on the myriad topics that constitute 'heritage'. This book, therefore, is a compilation of works of eminent historians that have been selected based on the team's assessment of what could constitute 'heritage', with a maritime origin or link. The team does not, even by chance, intend to convey an impression that this book is comprehensive enough to include each and every aspect that comprise 'heritage'. All works and eminent personalities consulted have been acknowledged and no copyright infringement has either occurred, or is intended. This book is a result of Chief of the Naval Staff's abiding belief in the maritime destiny of India and the need to present a small portion of the amazing tapestry that constitutes the maritime heritage of this ancient nation called India.

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MARITIME HERITAGE OF INDIA

A PHOTO ESSAY
BY THE
INDIAN NAVY

Ancient Trade with Magan

Magan (also known as Makkan) was a definable area that existed till about 550 BCE. Archaeological excavations point to its geographical location to be part of modern day Oman. Historical analyst Dr Ranajit Pal substantiates these claims by saying that Oman and parts of modern day Iran formed the firmament of ancient Magan. Trade was the mainstay of the people of Magan, and they shared large scale maritime trade links with the Indus Valley civilisation. The region served as a rich source of diorite and copper, and those were the primary items of trade. Back in those days, it was a common sight to see ships from Meluhha (Indus Valley) docked at the shores of the ancient kingdom.

The Lost Coastal City of Poompuhar

Nagapattinam district in modern day Tamil Nadu is home to a legend – the legend of the lost city of Poompuhar that flourished around 450 BCE. Once believed to be an affluent port city, little remains of Poompuhar today. Silapatikaram explains the layout of the city, describing the locations of important establishments and bodies of flora in Poompuhar. The city also served as the capital of the Chola empire during its early days and is referred to in ancient texts, excavated antique pottery and modern day archaeological studies. Tragically, it is believed that a massive tsunami swamped Poompuhar, after which repeated floods and erosion completely washed away the ancient city. In the past decade, the government has been authorising deep-sea excavation dives to try and find any remains of the legendary port city.

I.N.S. MYSORE

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Foreword

India is, and has always been, a maritime nation, with strong links to the seas and a proud heritage embedded in her rich, unbroken history spanning more than 5,000 years. Since the earliest days, the influence of the seas has been intrinsic and interminable in India's growth and evolution, leaving an indelible mark over the ages. India's peninsular features, long coastline, islands and central location in an ocean named after her, defined her maritime character and effectively shaped the maritime trade routes across the region.

Indian seafarers actively conducted trade across the Indian Ocean ever since the days of the Indus Valley civilisation. Long before Hippalus disclosed the secret of the monsoon to the Romans, Indian navigators used these winds and sailed to south-east Asia and east Africa. Indian seamen of yore were at the forefront of developments in seamanship and navigation, such as invention of the 'matsya yantra', a forerunner of the modern magnetic compass. Emperor Ashoka had a strong seagoing fleet that engaged in commercial interaction to the west with Syria, Egypt, Cyrene, Macedonia and Epirus. Similarly, the seafaring kingdoms of the Kalingas, Cholas, Pandyas and Cheras sailed to distant countries in the East, carrying goods and people across south-east Asia, establishing long lasting trade and continuing cultural links.

The tale of India's maritime heritage covers the spread of Indian culture, especially its art and architecture, language and music, religion and philosophy, and its developed sciences, including mathematics, nautical science and astronomy, to large parts of Asia and Africa. There is abundance of historical evidence revealing India's expansive maritime linkages across the oceans, including ancient Sanskrit texts, Pali and Persian literature, the Buddhist Jatakas and even the Old Testament. A study of historic artefacts shows the steady movement of trade, goods and people from India to other regions, and also the continuous inflow of new ideas, cultures and people to India, which were unfailingly welcomed.

In examining maritime heritage, however, there is a need to look beyond merely historical facts to many other aspects, both tangible and intangible. The study of our maritime history has extended to tangible aspects such as archaeological excavation sites, revealing ports and dockyards, artefacts, seals, sculptures, inscriptions and literary references, depicting our maritime relations with distant lands. The saga of our maritime heritage has also been built up through intangible records, passed on through generations of families as oral testimony and mnemonics, covering navigational skills, astronomical lessons, shipbuilding techniques, traditions and cultural mores. A proper appreciation of India's rich and varied maritime heritage entails connecting the countless distributed, but related and relevant, elements comprising ideas, materials and excavations that exist along India's coastline as well as in the near and distant lands in Asia and Africa.

India's maritime heritage covers the many achievements and great maritime prowess through development of maritime trade and linkages. As Europe underwent an industrial and maritime revolution, leading to its finding a direct sea route to India that bypassed intervening west Asian and Mediterranean regions, India acquired an increasingly continental mindset. The 'extra regional control' of the sea routes, to and from India, led to the steady decline in economic strength of both west and east Asia, and eventual subordination and colonisation of most of Asia, including India herself. At the same time, our maritime history shows how India imbibed this lesson, even under colonial rule, and slowly developed her maritime and naval power. The tale of India's maritime heritage would, therefore, not be complete, without an insight into the growth of the Indian Navy, which has become the prime manifestation of the nation's maritime power. Today, India is witnessing a maritime re-awakening and has firmly "turned to the seas again", with enhanced maritime consciousness amongst the public and polity. I have no doubt that the current century is the 'century of the seas' for India. In recognition of our great maritime past, and to properly place our maritime identity in perspective amidst India's ongoing maritime resurgence, the

Indian Navy has taken up a pioneering initiative in preparing a photo essay book on the maritime heritage of India. The book, though encapsulating a bit of history of the nation and the navy, only offers a kaleidoscopic view that connects the multifarious maritime dots in our history.

From the glorious days of commercial and cultural empires on India's coasts, from metaphorically exporting art and culture, to establishing trade linkages with civilisations and kingdoms around the world, from the wartime exploits of the brave Maratha Admiral Kanhoji Angre, to modern high intensity warfare, constabulary and humanitarian efforts by the Indian Navy, all of these are a part of India's maritime heritage covered in this book, which provides a composite, cohesive picture of maritime India. Substantive studies on India's maritime history are presently also being pursued by the Maritime History Society, Mumbai, the National Maritime Foundation, New Delhi, and some universities in India, supported by the Indian Navy. This book supplements the existing efforts and aims to kindle increased interest in matters maritime, so as to encourage further examination and studies in this field.

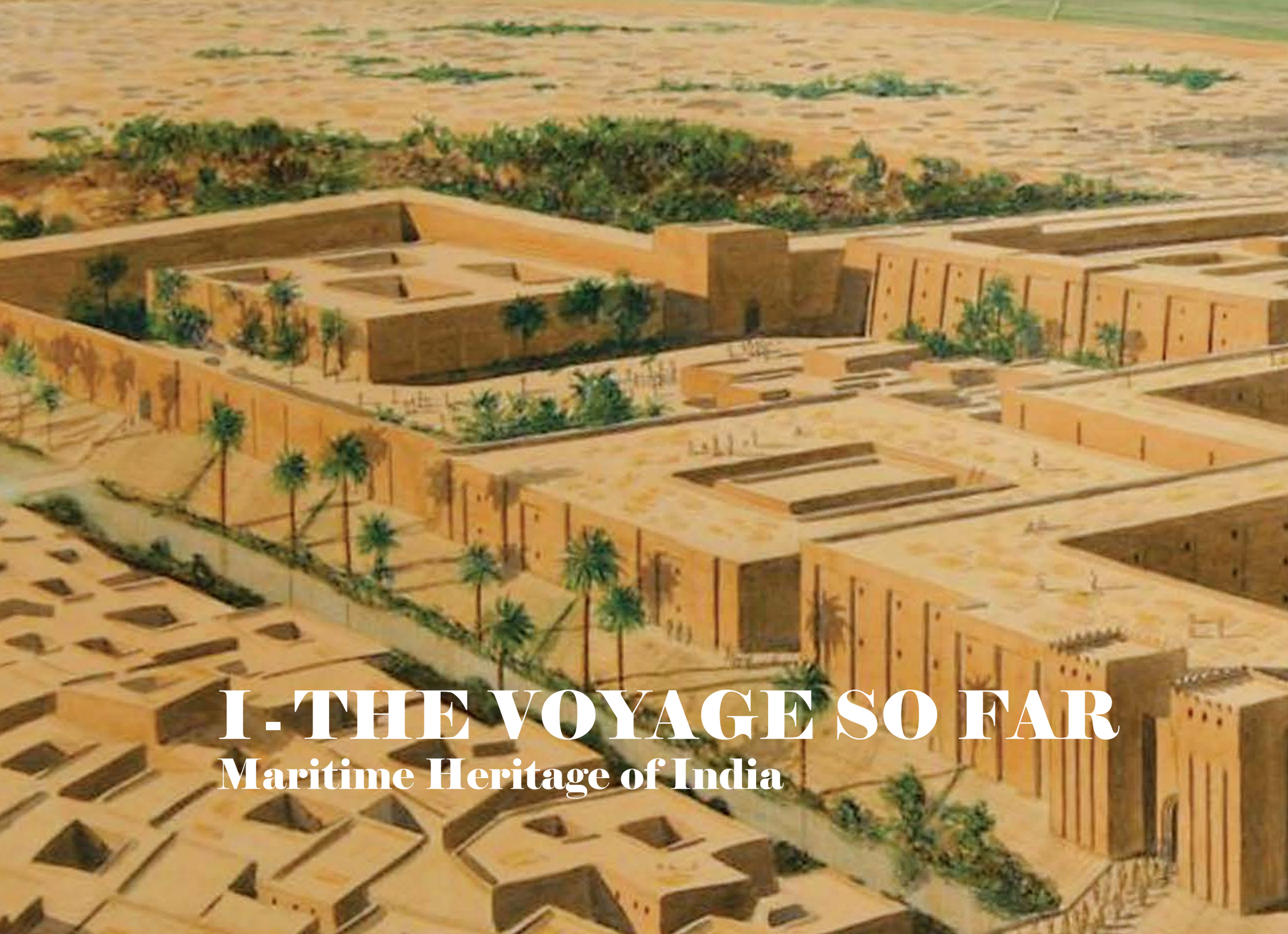
In preparing this seminal work, I must principally acknowledge the contributions of Vice Admiral Ajit Kumar P and Rear Admiral MD Suresh, along with their team of naval officers and civilians at the Indian Naval Academy, Ezhimala, who dedicatedly worked on the project from conceptualising to publication. I am grateful to the team of illustrious individual historians of eminence and national institutions, who have been acknowledged in the book, for their strong support, assistance and abiding interest in the success of this project. I am also grateful to many others who gave continuous support and encouragement from the sidelines, but remain unseen and unheralded in the true traditions of the 'Silent Service'. I would also like to acknowledge the contribution of team 'Project Mausam' and all departments of the Ministry of Culture, who provided considerable support and time to the Indian Navy team during the production of this book.

I am certain that this photo essay book will enthuse, excite and encourage readers to delve into further research and learning of India's maritime heritage, for the benefit of our future generations.

Jai Hind.

(RK Dhowan)
Admiral
Chief of the Naval Staff

New Delhi
04 February 2016



I - THE VOYAGE SO FAR

Maritime Heritage of India

Maritime Heritage and History of India

"A smooth sea never made a skilful mariner. The storms of adversity, like those of the ocean, rouse the faculty and excite the invention, prudence, skill and fortitude of a voyager. The mariners across time, in bracing their minds to outward calamities, acquired a sincerity of purpose and a sense of moral, worth a lifetime of heroism."

- Anonymous Merchant Mariner (1904)

The Indian Ocean embraces India, and all along the 7,500 km coastline, it supports more than three billion people who conduct their lives to the rhythm of the waves. India's link with the seas goes back to the very beginning of civilisation. Seafaring has been a consistent activity since the era of the Indus Valley civilisation and through the ages, maritime activity has increased exponentially. The Indian Ocean, the third largest, has inspired epic myths as well as folk tales in the country it draws its name from. These pelagic waters have stood witness to treacherous piratical acts and full blown naval battles. Many an empire has ridden these crests to glory and also been driven to demise. Considering the long history of this land, with traditions going back to the undefined and unaccounted corners of the past, it is inevitable that a rich and varied maritime history also exists, only waiting to be discovered in the crumbling artefacts of archaeology and the written accounts of travellers long gone.

Trade was one of the significant mainstays of the Harappan era and many excavations have proven this fact. Stone seals from that period establish that small flat-bottomed boats and large ocean going ships, were used extensively during the period. Some of the ship structures are still in use today. This stone seal in the image is placed at the Archaeological Survey of India, New Delhi.

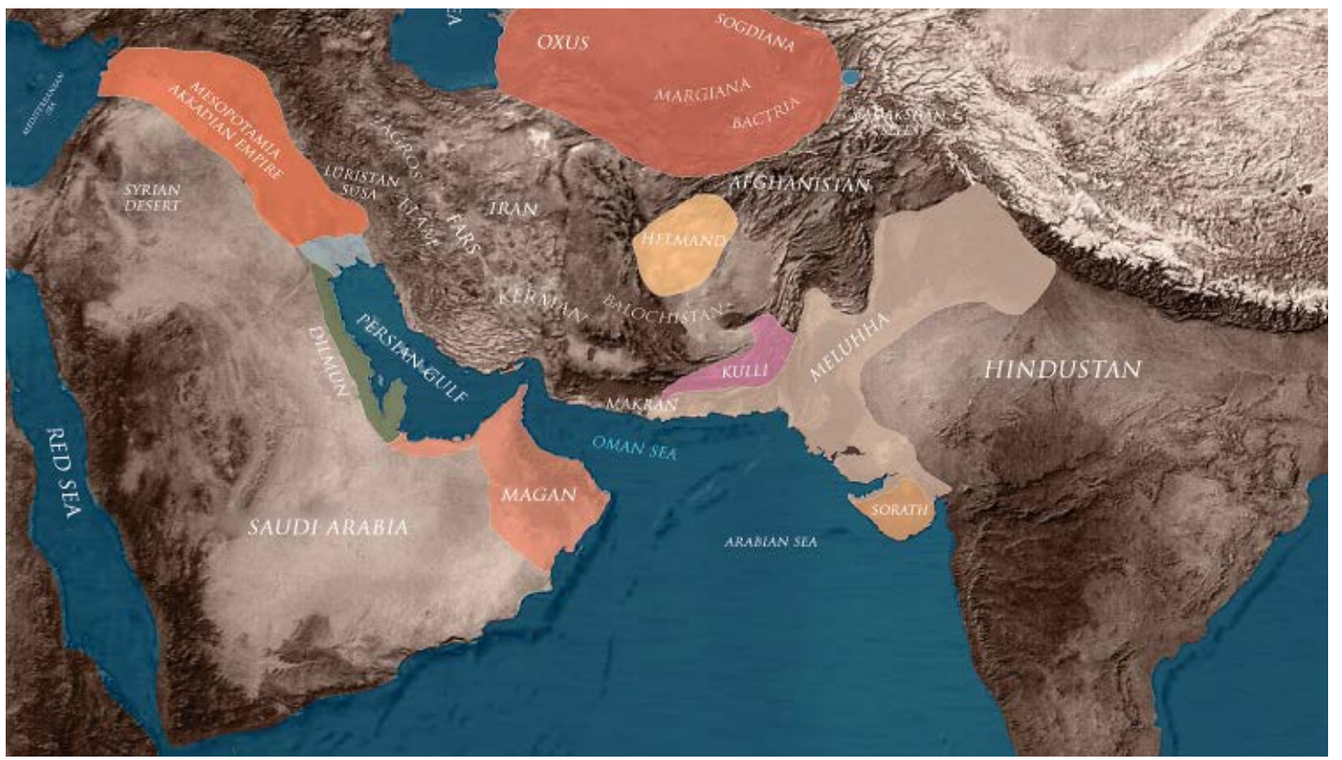
This map provides the names and extent of important civilisations from the ancient era, which had thriving trade linkages through the seas, with India. The maritime prowess of nations played a major role in influencing cultural ties, trade links and diplomatic relations between the Indus Valley, Mesopotamian, Egyptian and Chinese civilisations. This map will enable the reader to get a clear picture of commercial and cultural links to the west of India, carried out by sea.

The Harappan Period – The Dawn of a Maritime Civilisation

Discovery of Port Cities

The beginning of India's maritime history has been traced all the way back to the cradle of human civilisation – the Indus Valley. Historians have garnered evidence that suggest that by 3000 BCE, the inhabitants of the Indus Valley had made maritime contact with Mesopotamia. Cuneiform (a system of writing developed by the Sumerians) texts found in Mesopotamia from the time of Sargon of Akkad (2300 BCE) have established that copper, hardwoods, ivory, pearls, carnelian and gold were obtained from the Indus Valley.

Archaeological research at sites in Mesopotamia (Iraq), Dilmun (Bahrain) and Magan (Oman) has led to the discovery of stamp seals, stone weights and colourful carnelian beads, which corroborate these references. Evidence also suggests that during this period there was indirect trade between Sumeria and Indus Valley with the island of Dilmun as an entrepôt (a trading post). The discovery of an Indus Valley era dock at Lothal (located about 400 km south-west of modern day Ahmedabad) in Gujarat provided insight into the kind of technology



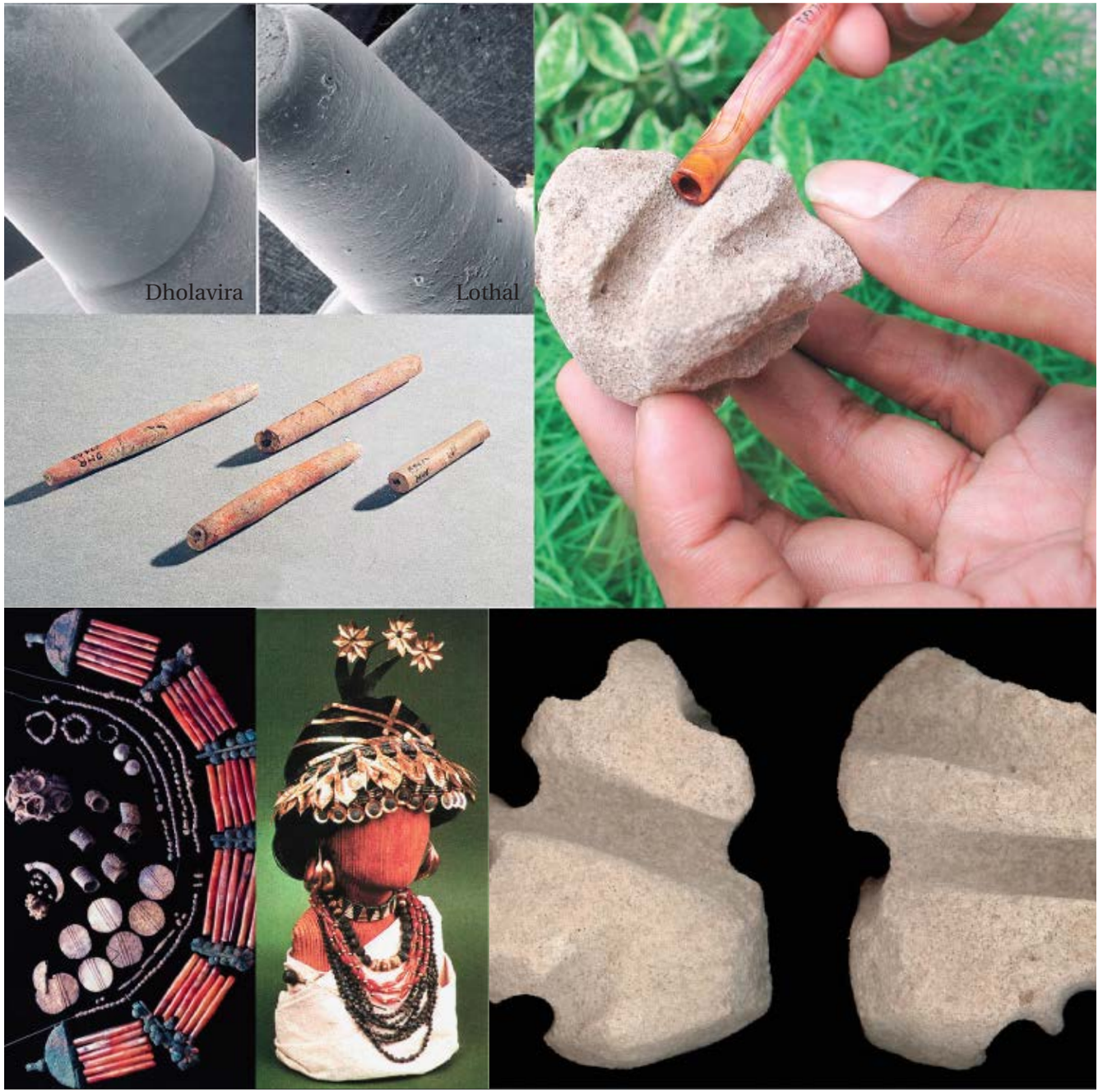
and maritime knowledge that existed then. The ingenuity of ancient Indians is reflected in the design of the dock, which was found located away from the main course of the Sabarmati River in order to avoid deposition of silt. Modern oceanographers agree that the Harappans must have had an exemplary understanding of hydrography and marine engineering to have built the dock on the banks of an ever shifting Sabarmati. Lothal is also the earliest dock discovered that had the capacity to berth as well as service ships.

More evidence of the maritime capacities of the Harappans emerged with the discovery at Dholavira, an archaeological site in Kutch, Gujarat. It is the largest Harappan city discovered and is located about 161 km away from the sea along a dried up river course.

Unlike the other settlements of Harappa and Mohenjo-Daro, Dholavira seems to have been constructed to a pre-existing geometrical plan consisting of three divisions – the citadel, the middle town and the lower town. Built entirely in stone, Dholavira is arguably the earliest known fortified maritime city and is likely to have served as an important port on the local coastal trade route that connected it to Lothal and Sutkagan Dor on the Makran coast. The pioneering maritime activity that began in the third millennia BCE between the west coast of India and the coastal regions of the Arabian Sea would grow, in scale and reach, in the succeeding centuries and change the course of human history.

An aerial view of Dholavira in Gujarat while excavating the archaeological site in Kutch district. Like Dholavira, Lothal's dock, the world's earliest known dock, connected the city to an ancient Sabarmati river on the trade route between Harappan cities in Sindh and the peninsula of Saurashtra. The engineers accorded high priority to the creation of a dockyard and a warehouse to serve the purpose of mercantile trade. Dholavira was a thriving trading centre in ancient times, with beads, gems and valuable ornaments reaching far corners of west Asia and Africa. The techniques and tools pioneered for bead-making and metallurgy have survived for over 4,000 years. This view shows the citadel, the middle town, lower town, castle and bailey along with a cemetery. The dockyard was located away from the main course of the river to reduce silt deposition.

Impressions of Carnelian beads from Royal Burial at Ur in Mesopotamia compared to beads from Harappa give an insight into the art of bead making, its industry and the extensive maritime linkages between the two civilisations. The beads were made by Indian artisans and exported to the rest of the world. The beads excavated at Dholavira were of superior quality and technologically advanced. The production and trade of various types of Carnelian beads played an important role in the local and regional economies during this historic period in south Asia. The city of Khambhat is one of the largest stone bead working centres of the world and it has been an important centre for over 3,000 years.



Maritime Activity in the Early Indian Empires

Evidence of maritime activities in the post-Harappan civilisation period indicates strong trade ties between India and the world. During this time, the various empires ruling the Indian subcontinent conducted vast amounts of trade with the Egyptians, Romans, Greeks, and many south-east Asian kingdoms.

The Magadhas led by king Bimbisara of the Haryanka dynasty were among the first to rise to maritime prominence. After defeating the king of Vanga (modern Bengal) and acquiring control over the sea in the east, they began to trade with south-east Asia. This helped the Magadha Empire to gain more prominence, and prosperity. It is noteworthy that this also laid the foundation for the Mauryan Empire that would follow in the footsteps of the Magadhas. In the early centuries of the Common Era, maritime trade between Greece and India began flourishing. During this period, old Madurai and Cleopatra's Alexandria were major trading settlements. Findings show that goods from India reached the ports of Alexandria and Berenike (a Greek city), and ships from India sailed all the way up to Aqaba in the Red Sea. Remains and artefacts from Greek and Roman merchants found at various sites, such as Pattanam in modern day Kerala, and Arikamedu in Tamil Nadu, suggest that trade with the Romans arrived through the Jews and the pre-Islamic Arabs with the South-West monsoon winds and stayed on until the North-East monsoon winds started. It is conceivable that Indian kingdoms grew extremely rich, in part, due to the extensive maritime trading activity. Megasthanes, a Greek ethnographer, the author of 'Indika' and the Macedonian ambassador to Chandragupta Maurya, states in his transcripts that Pataliputra, the Mauryan capital was much larger than the Greek cities of that era. After Chandragupta, Ashoka the Great expanded the Mauryan Empire to cover almost all of the Indian subcontinent. Under Ashoka, the Mauryans built trade relationships with Sri

Lanka, Burma, Egypt, Syria and Macedonia through various diplomatic missions – a strategy that was adopted by all his successors. After Ashoka flagged off the development of maritime trade, it increased exponentially and flourished between India and the rest of the world. Down south, the major ports during this era include Puhar (Kaveripatinam, near the Cauvery Estuary), Tyndis and Muziris (identified with Periyapattanum and Pattanam, 25 km north of Kochi). At the peak of this period, ships were sailing back and forth, for trade, diplomacy and religion, and the ancient 'known world' was abuzz with maritime activity.

Seafaring in the Early Common Era

"Not a year passed, in which India did not take fifty million sesterces away from Rome." – Pliny the Elder, 1 CE.

Trade grew rapidly in the Indian Ocean between 400 BCE and 500 CE. During this era, various discoveries, inventions, and political developments encouraged trade between the Indians and the Greeks, Romans, and Arabs to the west and the Chinese and south-east Asian kingdoms to the east. The 'Periplus Maris Erythraei' (Periplus of the Erythraean Sea, a Greco-Roman manuscript about trade and navigation) describes the conduct of commerce and trade between the Erythraean Sea and ancient India, particularly in Barbaricum (near modern day Karachi), in vivid detail. The Periplus also describes that Greco-Roman traders in Barygaza (near modern day Bharuch in Gujarat) would buy wheat, rice, sesame oil, cotton and cloth from the locals. The Kalingas and Cholas, both conducted trading expeditions to establish maritime trade links with the local rulers of Sumatra, Malay Peninsula, Java, Thailand and China. The knowledge of the monsoon winds developed during this period as did the technology of shipbuilding. The Greeks' and Romans' demand for spices was so great that the Indian kingdoms had to import spices from south-east Asia to meet this demand. The Chinese thirst for the luxury goods of the west brought them to the eastern ports of the Indian subcontinent and later to the markets of Malaya where these goods were widely available. South-east Asians on the other hand, underwent a period of 'Sanskritisation', and desired many items of Indian art and sculpture. The Brahmins played an important part by performing rituals and concocting genealogies for the local rulers to provide legitimacy. By the 10th century CE, many texts like parvans (books) of Mahabharata were translated into local languages like Javanese. Most Sanskrit language inscriptions were largely religious in context. South-east Asian rulers enthusiastically adopted elements of 'raja dharma' (Hindu and Buddhist beliefs, codes, and court practices) to legitimise their own rule and constructed cities, such as Angkor (in Cambodia), to affirm royal power by reproducing a map of sacred space derived from the Ramayana and Mahabharata. Until this period, trade seems to have been mostly free of conflict and completely under the control of merchants and merchant guilds. However, this peaceful trade did not remain permanent, and the winds of change were already beginning to blow.

Alexander Mosaic, dating 100 BCE, was found in Rome and is shown here. Alexander's unfulfilled dream of the conquest of India, however, had a profound effect on the socio-economic progress of the region under his command including the Hellenisation of Afghan, Indian, and Buddhist culture, and establishment of direct sea trade routes to Greece.

HIPPALUS' MONSOON WINDS

Hippalus was a Greek navigator and merchant, who probably lived in the 1st century BCE. The writer of the 'Periplus of the Erythraean Sea' credited Hippalus with discovering the direct route from the Red Sea to India across the Indian Ocean and charting the location of trading ports along peninsular India. Pliny the Elder claimed that Hippalus' discovery was actually the South-West monsoon wind, also called Hippalus. Hippalus was probably the first western explorer to recognise the north-south alignment of India's west coast which enabled him to conclude that crossing the Indian Ocean westward was a more efficient way to reach southern Indian ports than following the coastline. Hippalus' direct sea route theory greatly contributed to enhance trading activity between the Mediterranean Sea and the Indian Ocean.

Eastern Expeditions by Southern Sovereigns

The Cholas, Cheras and Pandyas were dominant powers of peninsular India and were called the 'Muventar', which translates to 'The Three Crowned Kings'. Of the three, the Chola dynasty had the maximum impact on the maritime domain. The early Sangam Tamil literature (150 CE) and inscriptions of the 3rd century BCE by Ashoka of the Maurya Empire, mentions the Cholas. At their peak, the Cholas ruled over not just the whole of south India, but also conquered island nations in southern Indian Ocean region as well as parts of Malaysia, Indonesia and southern Thailand and held suzerainty over the entire east coast of India including present day Bangladesh.

The starting point for building this vast maritime empire was their conquest of the Srivijaya Empire of Sumatra. Under Rajaraja Chola I, the Cholas already had a strong and well developed seafaring culture. They maintained friendly and peaceful trade relationship with the Srivijaya Empire for the most part. This kept the peace between the various kingdoms in south-east Asia since the Srivijaya Empire was the dominant power in this region during this period.

There are various inscriptions on both sides of the Bay of Bengal and also in south-east Asian countries that attest to the existence of large merchant communities and cultural exchange. As an example, Sri Mulan, a representative of the Srivijaya Empire of Sumatra, donated several lamp stands to be installed at the Shiva temple in Nagapattinam. A Srivijayan Maharaja from the Sailendra dynasty of Indonesia, Maravijayattungavarman, constructed the Chudamani Vihara in 1006 CE, at the port town of Nagapattinam.

Peace prevailed until the time of Rajendra Chola I, when he decided on a maritime invasion on Srivijaya in 1017 CE for commercial rather than political interests. He followed up this raid with another invasion by sea in 1025 CE and became the first Indian king to ever conduct overseas conquests. During this period, he also carried out naval raids on the Burmese kingdom of Pegu and took over the Tambralinga kingdom of southern Thailand. His son, Virarajendra Chola, expanded his dynasty's empire by conquering Kedah in Malaysia in the late 11th century CE.

The Chola military was a well-organised and effective fighting force during medieval times. The Chola navy played a pivotal role in the expansion of the Chola empire. It was instrumental in the Chola's conquest of the Ceylon islands, Srivijaya (present day Indonesia) and in the spread of Hinduism. They also encouraged spread of Dravidian culture and architecture to south-east Asia, while playing an active role in curbing piracy in 900 CE by deploying ships in waters in the region. This is an artist's impression of the Chola navy in full force as it arrives at the Malay peninsula carrying warriors and towering war elephants. During the time of Rajaraja Chola I and his son Rajendra Chola I it is said that the Chola navy had more than one million naval soldiers.

The Cholas' successes in maintaining peace and stability in the areas they controlled, helped Tamil merchant guilds to expand into south-east Asia. The Chola influence expanded from just commerce to other aspects, like food, religion, architecture etc, of south-east Asian life. Meanwhile, other south Indian dynasties also began to venture into maritime expeditions. The Pallavas reached Indonesia and beyond between the 3rd to 9th century. In the 7th century CE, Mamallapuram (Mahabalipuram near present day Chennai) was a thriving port under their control. There was also a brief, but short-lived, resurgence of the Pandyan maritime prowess during the 14th century CE. Though the three southern dynasties battled each other regularly, the Cholas and Cheras allowed the Pandyas to trade along the east coast. The key ports in southern peninsular kingdoms were Calicut, Pattanam, Tuticorin and Mamallapuram, whose influence and trading links reached as far east as China.

Other powers like the Vijayanagara and Kalinga kingdoms also followed suit, which not only had linguistic impact on the names of places, people and the language, but also influenced religion, culture and architecture of the region. Hindu and Buddhist religious establishments of south-east Asia grew in prominence and power since they were a part of these overseas economic activities. They were provided with large amount of funds to act as patrons of commerce and used these funds in estate development, development of craftsmanship and promotion of trading activities. This considerable influence of India on south-east Asian kingdoms will be elaborately dealt with, in the subsequent chapters in this book.

A sculpture at Gangaikonda Cholapuram Temple in Tanjavur depicts the coronation of Rajendra Chola I. Year 2014 marked the millenial anniversary of the coronation of Rajendra Chola I. The Chola Empire was extended, comprising of the Cauvery delta, Godavari basin and extensive swathes of coastline in south-east Asia including Indonesia and Malaysia. Under Rajaraja Chola I, maritime trade flourished, alongside the dissemination of ideas that spread to different parts of the world. Some historians cite that the conquests of the Chola rulers and their show of strength were a major deterrent in preventing the Arabs and Afghans from venturing to conquer southern India.

The Medieval Merchants

The Indian Ocean trading activities between the 5th and the 13th century CE were carried out by merchants and traders from all the major civilisations of the medieval era. From the Europeans to the Arabs and Persians, from the south-east Asians to the Chinese and Japanese, and even African civilisations of that period – everyone had a stake in the Indian Ocean trade during this era. Fa Xian (aka Fa Hien), the Chinese pilgrim who visited India in the 5th century CE, has described in detail about Chinese porcelain ware traders with whom he interacted on the east coast of India, especially in present day Tamil Nadu and Odisha.

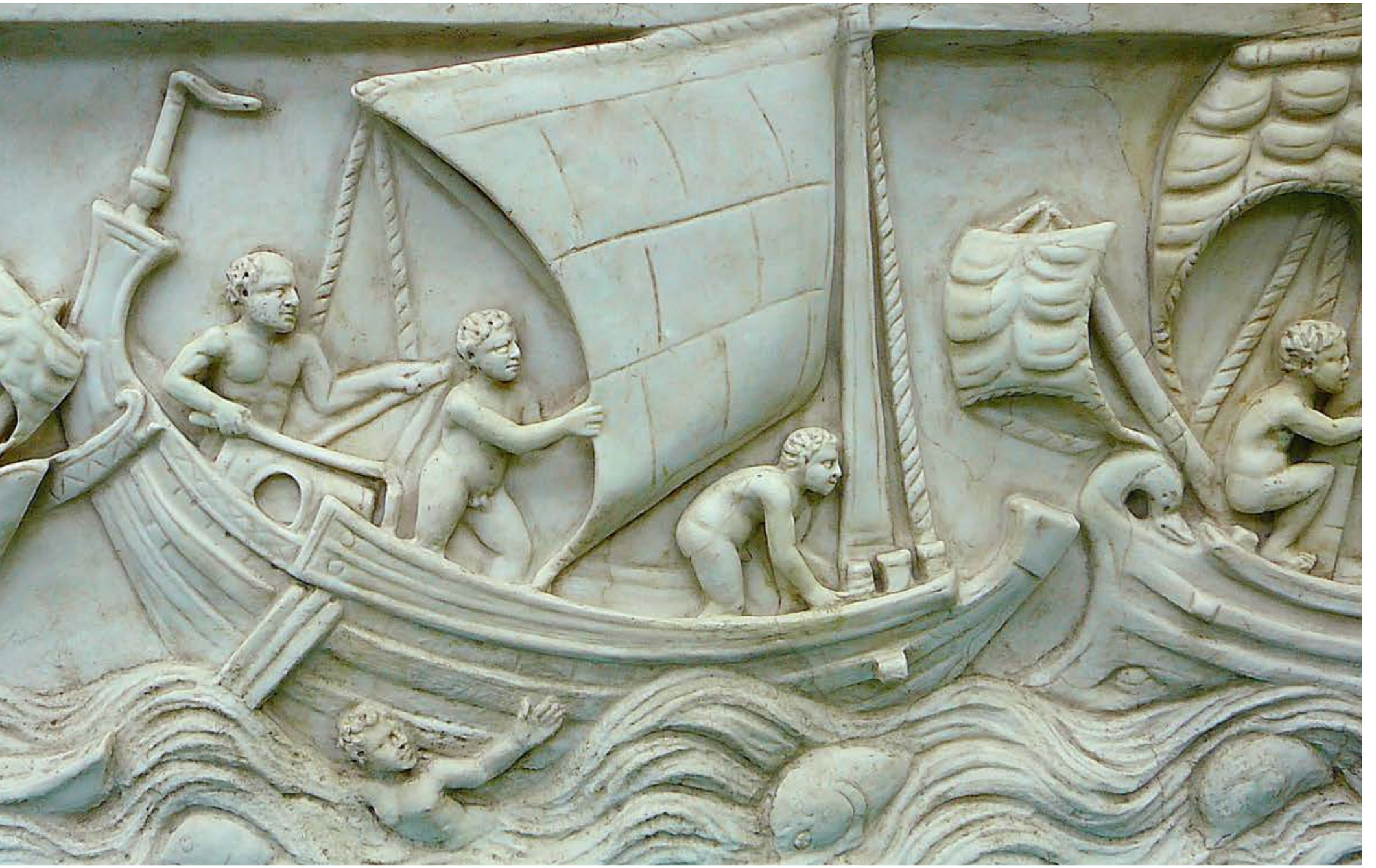
This anecdote is also supported by the discovery of porcelain ware and other Chinese artefacts at certain excavation sites on the east coast of India. Hiuen Tsang or Xuan Zang, a Chinese Buddhist traveller, mentions a branch of Telugu-Cholas during his trip to India in the 7th century. He noted the fall of Buddhism during his visit to south India in 642 CE. Hiuen Tsang's travels were also a pointer to the strong diplomatic ties with king Harshavardhana (of Kanauj). Since trade already existed between the southern Empires and south-east Asia, Arab and Persian merchants took advantage of it and south Indian ports thrived as entrepôts in the 7th – 8th century. The daily revenue of the east coast in 850 CE was estimated at 200 maunds (8 tonnes) of gold. Within the kingdoms of the Indian subcontinent, sailors were mostly hired from five locations with a long tradition of seafaring viz., Kutch, Konkan and Malabar on the west coast, Kalinga on the east, and Coromandel on the southern coasts. Knowledge of the maritime world, including weather and navigation, was passed down over generations, enriched by the experience of much travelled sailors.

To foster trade, merchant guilds were formed in medieval south India. Inscriptions that record these merchant guilds have been excavated at various sites in south India as well as a few places in south-east Asia. Towards the end of the medieval period, Tamil merchant guilds held great power in various southern kingdoms. Chola and Pandya rulers promoted trade missions to Srivijaya, Sailendra and Sinhala through these guilds, and the Hindu and Buddhist temples. This period is among the most glorious of traditional Indian maritime era and most maritime activities were trade related.

This was also a golden period when Indian culture, philosophy, governance, science, art, architecture and religion influenced the world and vice-versa. During this age, India was not just the centre of the Indian Ocean trade but also one of the most influential civilisations of that period. As Tome Pires, the Portuguese author of 'Suma Oriental', a book on Asian trade, wrote years later – "It was trade in general which enabled kingdoms, made citizens and cities great, and decided peace and war." This glorious age lasted until the 13th century CE when the great empires of the Deccan peninsula began to disintegrate.

Around the same time, India began to be invaded over land from the north-west. As the subcontinent was caught in skirmishes, battles and wars of varying magnitude, trade began to slow down until the Mughals arrived, established control and stabilized most of the subcontinent.

A stone mural of Roman sailors trying to anchor their ship. Early Roman literature mentions that the west coast of India was known for turbulent sea conditions, which made anchoring difficult. The number of anchors and artefacts discovered in the Arabian Sea suggests that trade between India and Rome was frequent during the early Common Era. During the medieval ages, the Arabs dominated the maritime trade routes on the Indian Ocean and demanded higher payments on account of dangers and risks during their sea passage.



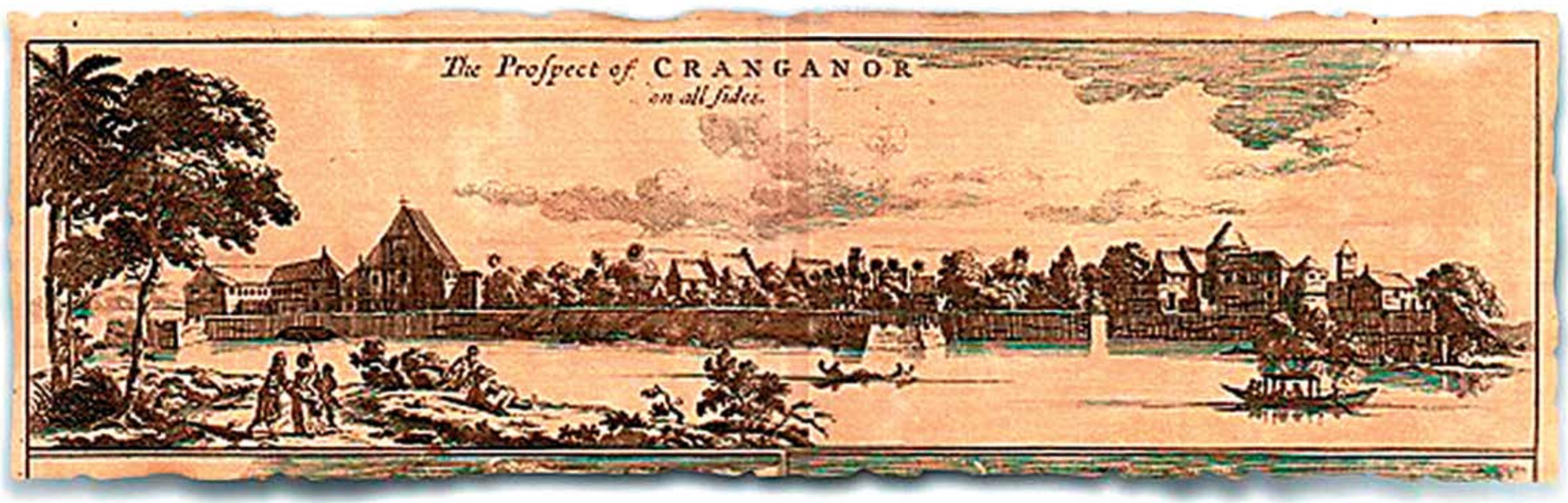
Later Medieval Period - Calm after the Storm

From the middle of the 13th century and for two centuries after that, the Indian subcontinent was not politically united. While most of northern India was dominated by the Delhi sultanate, most of southern India was controlled by the Vijayanagar Empire. Smaller regional kingdoms co-existed with larger empires. The Rajputs in western and central India, the Bahmani sultanate in the south, and the Gajapati kingdom in the east were a few of the dominant regional powers and there was a dearth of blue water navies.

Most part of this era was about kingdoms competing for domain and dominance on land. Around the same time, India lost its cultural dominion in south-east Asia as Islam arrived from west Asia and began to spread. Over time, regions of modern day west Asia became nodal points for business between Europe, south-east Asia and India. The Arabs controlled the trade routes and acted as middlemen between the west and the east. This period witnessed the ascendency of Arab sailors and merchants. It was during this era that Ibn Majid wrote his treatise on sea navigation. Ibn Battuta is known to have travelled to India during the reign of Tughlaq and even served as a judge in his court for a short period.

As historian K.M. Panikkar points out, Indians and Arabs had very peaceful trade relationships, with neither side seeking control over the Arabian Sea. This was a consequence of the fact that Arab trade was not the outcome of political policy, but a commercial phenomenon. The port cities provided facilities, freedom and safety for traders and sailors, irrespective of their nationalities. But India's maritime prowess had begun to fade.

An artist's impression of Cannanore which had an impressive reputation for commerce during the Roman era. The port conducted maritime trade actively across the Arabian Sea and later extended these maritime trade ties to even China and parts of south-east Asia.



Mughals - The Reluctant Sailors

In the middle of the 15th century, the Mughals led the most dominant empire in India. Having taken over much of the Indian subcontinent, and finding sufficient revenue from land resources, they did not pay much attention to the affairs of the sea. In fact, the Mughals believed that seafaring was not a pursuit worthy of their nobility.

Historian Michael Pearson observes that Akbar, Jahangir and Aurangzeb viewed the ports on the western coast merely as departure points for the Haj pilgrimage and never considered their strategic potential as a naval base or sea ports. However, Akbar did maintain a mid-sized navy and Aurangzeb maintained naval presence on both the coasts during his reign.

Aurangzeb also bought the loyalty of the Siddis, who were Ethiopian mercenaries with a naval force and had settled on the Konkan coast during the rule of the Deccan sultanate. On the east coast, one of Aurangzeb's generals, Shaista Khan, put together a strong navy and joined hands with the Portuguese to attack Chittagong and thwart any alliance developing between the Arakans and the Dutch. However, any account of the Siddis or Shaista Khan's naval accomplishments must include a caveat that they were only involved in coastal battles. For an empire that was considered one of the wealthiest in all of human history, the Mughals' reluctance to build a blue water navy was a grave shortcoming.

This painting shows Babur crossing a river using traditional boats. Though Mughals did not show any inclination to fielding a navy or building ships, Emperor Akbar did build warships and large ocean going trading vessels, as can be gleaned from the 'Akbarnama' and 'Ain-e-Akbari', important books of that era.

The Turning of The Tide - Arrival and Ascendancy of Western Maritime Powers

During this period, the Arabs had already established a monopoly over the Indian Ocean trade. Many European nations felt the need to find a direct sea route to India for enhanced profit. Portugal led this charge. On 08 July 1497, Vasco da Gama set sail from Portugal with a squadron of three ships. In December 1497, he rounded the Cape of Good Hope. After two failed attempts to reach India, he sailed from Zanzibar with Ibn Majid, an Arab navigator and set foot in Calicut on 11 May 1498. A new chapter in the history of the Indian Ocean began as Vasco da Gama's entry via the west coast was also a turning point in India's history. At that time, though, no one predicted the end of the monopoly of Arab merchants over Indian Ocean trade nor did anyone foresee that, following the Portuguese, several other European powers would rush in for their slice of the pie. The Portuguese did not find the going easy initially. Between them and their dream of dominating the west coast of India stood two great naval powers - the Zamorins and the Marathas.

The Tryst with the Zamorins

The Portuguese quest for dominance over the Indian Ocean began with the Malabar coast. When Vasco da Gama arrived at Kappad near Calicut, the region was ruled by the Zamorin. The Zamorins had maintained a policy of encouraging trade over land and sea, and this policy had made Calicut a major trading post with large settlements of Arab traders. On the Portuguese explorer's arrival, the Zamorins extended the same policy to Vasco da Gama. He was accorded a respectful welcome and immediately granted permission to trade. The Arabs in Calicut, who had a long relationship with the Zamorin, protested the trade permission accorded to Vasco da Gama and even threatened to leave the city for good. The Zamorin, however, remained firm and allowed Vasco da Gama's expedition to trade.

Things took an ugly turn when Vasco da Gama refused to pay the usual customs levy, and according to the Portuguese historian Danvers, he mutilated and tortured the Zamorin's Brahmin messenger, burned ships laden with rice and left Calicut and sailed onwards to Cannanore, where the Kolathiri Raja received him with open arms. He left the Malabar coast soon after and the Zamorin, who until then had not needed a blue water navy, dismissed the Portuguese explorer as a minor irritant. The Portuguese had, however, gained knowledge of the sea route to India. Intent on trading with the Malabar coast, they sent a large expedition of 13 ships led by military commander Pedro Alvares Cabral. He initially approached the Zamorin and withheld any semblance of animosity. However, after being given the requisite permission to trade, he created disorder by capturing an Arab vessel and getting into a skirmish with a group of Arab traders. The Arabs retaliated and stormed the Portuguese trading post in Calicut. When the Zamorin refused to intervene, he attacked the citadel of Calicut for two days before quickly fleeing to Kochi. After this expedition, the Portuguese sent four more ships led by explorer and administrator Joao da Gama, after which a fleet led by Vasco da Gama returned and finally, Portuguese general, Alfonso de Albuquerque's fleet made a trip to India. In all of these battles, the Portuguese aligned with the kings of Kochi and Cannanore, and launched multiple assaults on the Zamorin ports of Calicut and Cranganore. The Zamorin was often caught off guard and although his navy was able to stop the Portuguese from gaining supremacy or absolute victory, Calicut was losing out on trade and the Zamorin was slowly bleeding resources. While a short lived alignment with the Sultan of Egypt helped the Zamorin win a battle, the Portuguese had already laid down plans for the long haul in India by capturing Goa from Vijayanagar and fortifying the port. While the Portuguese eventually obtained monopoly over the Indian Ocean trade in the Arabian Sea, the Zamorins' resistance for over a century proved the tactical acumen and valour of the Indian Naval commanders of the time, the Kunjali Marakkars, even though they lacked fire power and hardware of the large Portuguese vessels .

A period painting of ancient times depicting the interaction between the Zamorin and Vasco da Gama, a Portuguese explorer. Vasco da Gama was the first to set foot in India, and after two successive failures, establish a direct sea route. His last voyage to India was in 1524 CE as the governor of Portuguese India. Soon after his arrival he contracted malaria and died.

The Maritime Power of the Marathas

Just as the Portuguese found the Kunjali Marakkars to be formidable adversaries in Malabar, they faced another massive challenge in the Konkan from the Marathas. The Maratha's sworn enemy in the Konkan coastal area were the Siddis – mercenaries, originally from Ethiopia, who owed allegiance to the Mughals. The Marathas, who held onto their empire while under constant attack from the Mughals, initially, had no navy. Shivaji was the first to realise that absence of a navy was a strategic weakness. While fighting the Siddis and observing the Portuguese naval power on the Konkan coast, Shivaji realised that for trade to flourish and his empire to prosper, he would need an efficient system of ports and an excellent navy. A great believer in forts, Shivaji built many coastal forts in the north-western part of the Deccan plateau. He ensured sound defence of the forts by constructing the forts on hillocks overlooking the coast. Shivaji involved himself personally while constructing shipbuilding centres in the Kalyan - Bhivandi area. Initially his warship building efforts were not taken seriously by the Portuguese or the Siddis. When his ships were ready, he attacked and captured ports, starting with Rajapur and Dabhol in 1661 CE. The Marathas quickly became a sea power to be reckoned with and faced attacks from the Siddis, the Portuguese and the British. Shivaji's most notable naval victory was when he wrested the Khanderi Island from the British in 1679 CE. The Maratha navy soon got stronger, established strongholds in the forts at Kolaba, Sindhudurg, Vijayadurg, Ratnagiri and Anjanvel. For more than 40 years, the Marathas held both, the Portuguese and the British, at bay

single-handedly. They were never defeated. This was in large part due to Shivaji's understanding of maritime power. But after him, only one legendary Maratha navy leader challenged the Portuguese and the British and went to his grave undefeated – Sarkhel Kanhoji Angre.

Below is an artwork depicting a battle between the Maratha navy and the European powers. The Portuguese and the Bombay Marine were a combined force of 6,000 soldiers but they failed miserably.

Soon after the establishment of the Maratha navy in 1674 CE they amassed an intimidating force, consisting of ships with cannons mounted and military trained sailors. Shivaji understood the need for a strong navy to keep foreign powers at bay and brought about many innovative changes and considerable tactical acumen to war at sea. He inducted ships capable of deploying in deeper waters with considerable firepower.

The Legend of Kanhoji Angre

The Marathas had a large fleet of around 200 warships during Shivaji's reign but by the time Kanhoji was appointed Admiral (Sarkhel), the fleet had reduced to a paltry ten ships. When the Marathas split into two factions after Rajaram's death in 1700 CE, Kanhoji initially sided with Tarabai against the faction led by Shahu and captured a few of Shahu's forts. However, after negotiations, he shrewdly exchanged the captured forts for ten sea-forts and 16 land forts. While the threat from the Siddis and their lords, the Mughals, hung over the Marathas, Kanhoji remained focussed on building his fleet from ten ships to about 50 galbats and ten ghurabs. These increments made his fleet a sizeable naval force. The forts lost by the Maratha navy to the Siddis were all recaptured. After decisively defeating the Siddis, Kanhoji ensured that they never again attained the power to challenge him at sea.

He then turned his attention to the Portuguese. Kanhoji began to attack and capture Portuguese merchant ships that refused to purchase his passports. He soon began to capture larger ships and forced the Portuguese to retaliate. The Portuguese were outnumbered and defeated by the Marathas. After many skirmishes that followed, the Portuguese eventually signed a peace treaty with the Marathas. Having settled the Portuguese front in his favour, Kanhoji shifted his attention to the British. The British port in Mumbai was very close to his own port in Kolaba but as the British were better equipped, Kanhoji avoided a direct confrontation. The British, however, regarded him a threat and wooed all his enemies to their side. The British Governor Charles Boone and the legendary Sarkhel Kanhoji fought many battles over a decade but there was no decisive victory for either side. Both suffered massive losses. The battles of Geriah and Khanderi taught the British to be wary of Kanhoji and they reduced their aggravations. Finally in 1724 CE, the Sarkhel wrote to the British Governor William Phipps proposing peace. While there was no formal agreement of any kind, both refrained from indulging in any activity that threatened to break the truce and even exchanged prisoners. A few years after Kanhoji Angre's death, the British finally captured the Maratha stronghold, Fort Geriah (Vijaydurg) in 1756 CE, and thus began the decline of the Marathas.

The Portuguese

By the early 15th century, Arab traders had established near monopolistic control over the lucrative Indian Ocean trade. However, Islamic control over both, land and sea routes between Europe and Asia, was unacceptable to the imperial European powers. It was in this political climate that Vasco da Gama, under orders from Manuel I of Portugal, landed in Calicut on the Malabar coast. The route from the east coast of Africa to the west coast of India was known to the Arabs (both pre- and post-Islamic) and Indians since early times. The Portuguese brought cannons mounted on ships, an innovation not seen before in the Indian Ocean. In addition, their fleets were blue water ships equipped to sail the high seas against the largely coastal naval forces of the local Indian rulers. These two facts gave them a decisive tactical advantage. Despite the valiant attempts of the Zamorin and the Maratha navies, the Portuguese were soon able to establish dominance in the Indian Ocean region. The Portuguese captured islands and built fortified port cities from the Red Sea to the west coast of India. They held monopoly over Indian goods and all other European nations were forced to trade with them at Portuguese controlled prices. They even prohibited Indian and Arab ships from plying in the Indian Ocean without their permission. When Portugal and Spain were unified in 1580 CE, the Portuguese focus on the Indian Ocean declined and by the time Portugal achieved independence in 1640 CE, the British and the Dutch had already moved in to fill the void caused by the decline of Portuguese power in India. An interesting truism of history is that the Portuguese were the first European power to establish colonies in India and the last to leave – when India finally wrested Goa from their control in 1961.

The Indian Naval base in Mumbai is named 'Angre' in memory of Kanhoji Angre, a great Sarkhel who embodied the defining virtues of a seaman – resourcefulness, courage, valour and a steely resolve. He was the most successful chief of the Maratha navy in the 18th century and died in 1729, undefeated at sea.

The Dutch

The Dutch East India Company was established in 1592 CE in Amsterdam with the intent to exploit the changing balance of world power caused by the downfall of the Spanish Armada. Their first merchant fleet reached India in 1595 CE, but eventually travelled all the way to Java and established a base at Batavia (modern Jakarta). The Dutch captured the port of Kochi in 1663 CE and began to fight the Portuguese in 1665 CE at Dacca. However, they suffered a massive defeat in the Battle of Chittagong where they had allied with the Arakan Empire and were against an alliance between Shaista Khan of the Mughals and the Portuguese. Although they were in India until the early 19th century, they decided to forfeit their Indian operations due to financial problems caused by successive defeats to the British in Europe.

The French

The French showed their presence in the Indian Ocean for the first time in 1740 CE. They gained their foothold in Mauritius and built a strong naval base there. Eventually, they established trading posts at Surat and Puducherry. During the 18th century, the French were the primary challengers to the British supremacy in the Indian Ocean. Multiple battles erupted along both coasts of India. When the French won the battle of Hooghly, and simultaneously managed to capture Chennai, the British laid siege to Puducherry. In the ensuing battle, the British fleet attacked and recaptured Chennai. The Anglo-French Carnatic Wars resulted in victories for the British as they won most of the naval battles and finally, after their defeat at the Battle of Trafalgar in 1805 CE, the French were forced to leave India.

The Germans

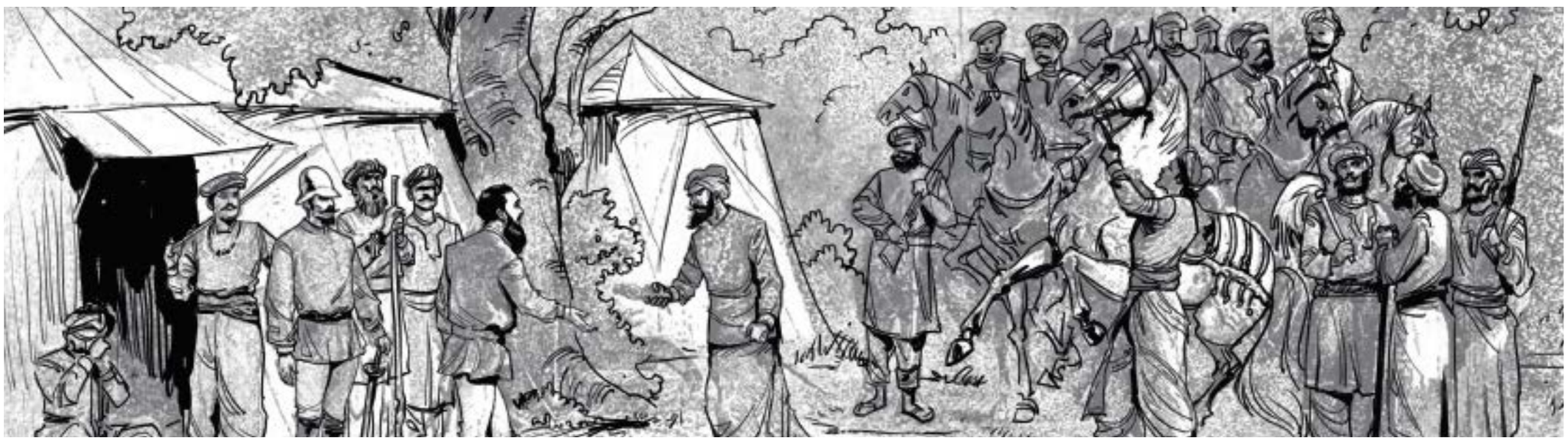
In 1753 CE, some merchants from Emden, Germany, formed a company to gain from being a part of the Indian Ocean trade and named it the 'Royal Prussian Bengal Company'.

However, they met resistance from the imperial powers already present – the British, French and Dutch, who banned the local merchants from dealing with the Germans.

The Nawab of Bengal also banned German establishments from starting operations. After persistent efforts, the Germans finally managed to get the requisite permissions from the Nawab to setup a factory in Chandernagore. However, when they faced unremitting hostility all around, they wound up their trade-post in 1760 CE and withdrew.

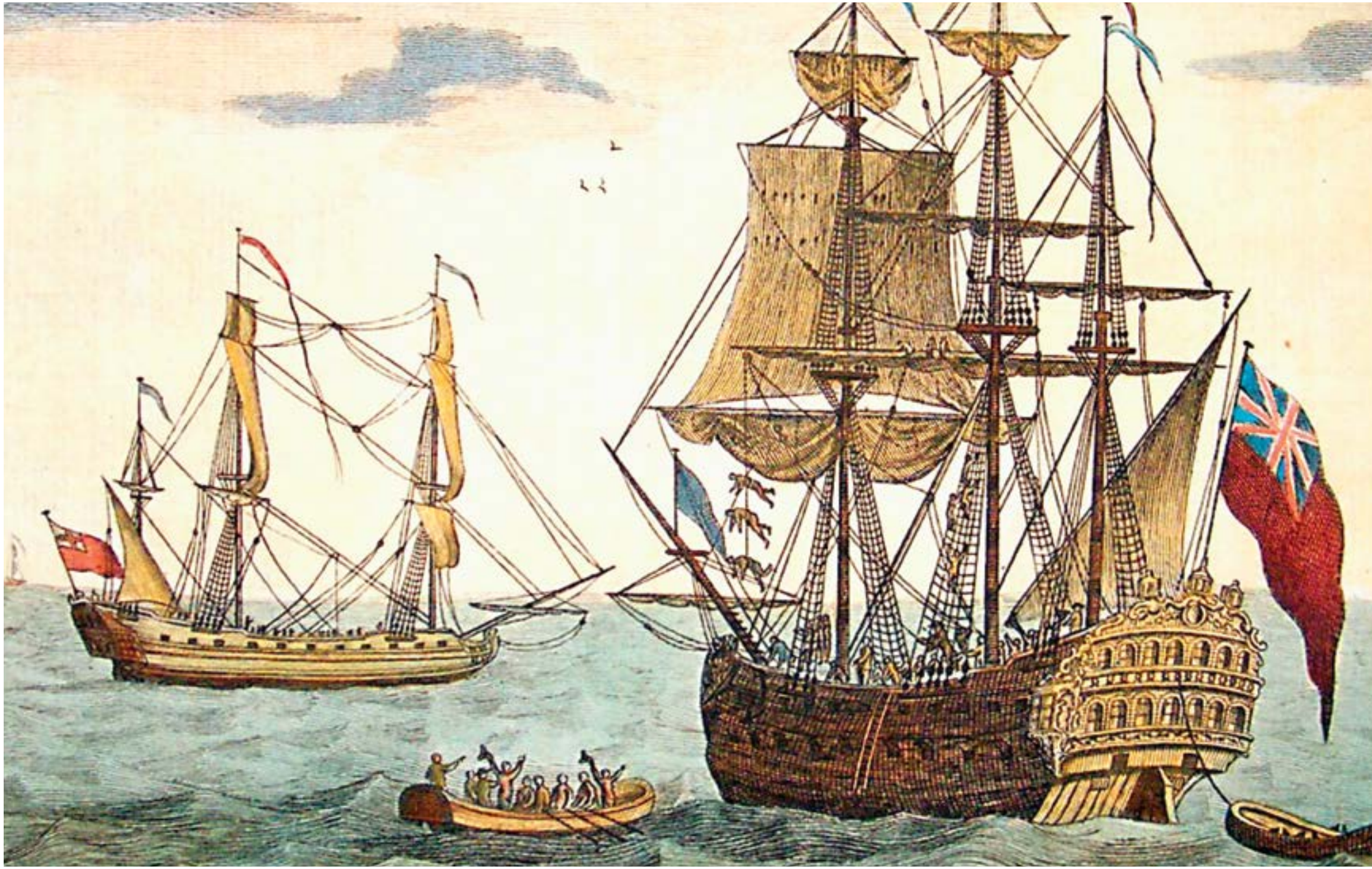
In 1942, during World War II, the Japanese occupied parts of the Andaman and Nicobar Islands. This is a picture of a Japanese bunker constructed on Ross Island. The Japanese, during their occupation, built a string of bunkers and gun positions at strategic locations for the purpose of surveillance and defence of these islands. The bunkers were partially underground, made from reinforced cement and capable of surviving aerial bombings by Allied forces. They were abandoned with Japan's defeat.

Local kings and rulers tried to associate with other European powers to counter the British supremacy and contol. This is an illustration of one such meeting between a party of foreign delegates and Indian rulers to progress their relationship.



The Japanese

Japan has always had close ties with India. Both countries had cultural and trade exchanges from a very early period. After the 12th century, Japanese trade with India dwindled. When the European powers, especially the British, set up base in India, the Japanese began to see Indians as a part of the British colony and empire. Though contact between the two cultures did not fade out - Indian sailors were onboard Portuguese ships as seamen when they visited Japanese ports and during the 1596 CE anti-Christian rising in Japan, the Christians in Japan fled to Goa on Portuguese ships – the relationship was no longer as strong as it had existed centuries earlier. Finally, during World War II, the Japanese occupied the Andaman and Nicobar Islands with the objective to capture Port Blair, which had an excellent garrison, from the British. However, the Royal Indian Navy defeated them in 1945, and the Japanese forces in the Islands surrendered.



The British

The East India Company was founded on 31 December 1600. Captain Hawkins arrived at Surat, met Emperor Jahangir at the Mughal royal court in Delhi in 1612 CE, and requested permission to trade with India. The British, while intending to enter the lucrative Indian Ocean trade, encountered resistance from the Portuguese, French, Marathas and many other smaller kings and rulers.

Among the many battles with the Portuguese, the Battle of Swally, at Surat, under Captain Thomas Best, is particularly important since it was after this battle in 1612 CE that the Indian Marine came into existence. Eventually, the Portuguese lost their dominance over the Indian Ocean and withdrew, leaving the British monopolising the Indian Ocean trade. Although they had entered as merchants, the East India Company got involved in local political conflicts and began to take sides. Equipped with superior military experience and better fire power, the British rendered several small time rulers ineffective. The British sea power played a key role in many battles, especially when it came to dealing with the Maratha's and Hyder Ali's navy. Tipu Sultan, who fought the British for a long time, is known to have written to Napoleon lamenting the fact that the British were practically invulnerable at sea and requested French assistance in defeating them. The British East India Company built and developed several ports – Mumbai, Kolkata and Chennai to name a few major ones. While Delhi became their political capital in 1911 CE, maritime action was focussed on these large city ports - where a port, dockyard and a fort were usually the first three structures built. Chennai was created in the 1640's, Mumbai in the 1660's and Kolkata in the 1690's. This resulted in local merchants from the western region moving to Mumbai, those from the southern region moving to Chennai, and merchants from eastern states moving to Kolkata.

The East India Company shifted their shipbuilding base to Mumbai in 1735 CE and the next 100 years saw the Parsi-led shipyard in Mumbai build around 115 warships, including 84 gunships and 144 merchant ships. The Bombay Marine, as the service was then known, participated in thwarting and ending the piracy by an Arab tribe called Joasmis. The battle of Ras-al-Kheima in 1809 CE resulted in free transportation of the East India Company merchandise and ships across the Arabian Sea. The Bombay Marine also participated in the Anglo-Burmese and Anglo-Sikh wars of the mid-19th century. After the takeover of the East India Company's activities by Queen Victoria in 1858 CE, the British began expanding the use of blockades and crippling taxes alongside restrictive and punitive policies, to eventually kill local maritime trade.

An artist's depiction of British ships setting sail to India. The British established a small navy initially to protect their economic interests. The navy was called the Honourable East India Company's Marine. During the time, the British Royal naval forces off the Indian coast protected the company's merchant vessels and conducted surveys to chart the coastlines. They hired Indian men as soldiers and sailors to fight the Marathas and the Siddis.

THE MANUSCRIPT OF ANIS-AL-HAJ

The port of Surat, as mentioned in various contemporary European accounts, was a flourishing port during the Mughal period, and this is borne out by the fact that the first English factory was established here. Akbar and his governor of Gujarat built special ships to carry pilgrims to Mecca from the port of Surat. The illustrated manuscript of Anis-al-Haj is an interesting travelogue written during the Aurangzeb period. His observations of contemporary caravans, his knowledge of the route, nature of journey, etc., are very illuminating. In fact, this is the only travelogue of that period of the pilgrimage to Mecca from the port of Surat. The port was fortified by Aurangzeb after Shivaji's raids of Surat.

The Maritime Nation

Undergoing Sea Change

In 1874 CE, the British established a Marine Survey Department which surveyed all coasts of the Indian Ocean littorals, the Philippines, the Chusan Archipelago in the East China Sea, and Tasmania in the south-east. Britain, thus, gained monopoly over production of navigational charts of the entire region. European rulers, especially the British, used Indians for their maritime chores. Native Indians were employed for unskilled and semi-skilled work in the ports, such as loading and unloading of goods, moving heavy pieces of machinery for trade and warfare, and cleaning the docks and ships. Indian indentured labourers were also moved across oceans to different British colonies like the West Indies, South Africa, the Malay Peninsula and Singapore, where they did plantation work and other physical labour. A large population of these labourers settled in these regions for generations. As the British dominance of the high seas grew, pirates were almost completely wiped out and traders started using British ships for transportation of merchandise. Due to the long period in power, the British influence on Indian maritime culture, demography, commerce, architecture and navigation has been immense. With their focus on the navy, ports, trade and shipbuilding, the British had complete control over the Indian Ocean. This unremitting monopoly over all aspects of life of Indians spawned the need for freedom and independence in the minds of the people of India and thus stirred the struggle for freedom.

From its origins in 1612 CE as the East India Company's Marine, the navy underwent various changes, including to its name. It was initially named the Bombay Marine and over time, changed to Her Majesty's Indian Navy, Her Majesty's Indian Marine and the Royal Indian Marine, until being named the Royal Indian Navy in 1934 CE. This photo shows a rating (sailor) wearing the uniform of Her Majesty's Indian Ship and using a signaling lamp to communicate with other ships.

Indian Freedom Struggle - Maritime Incidents

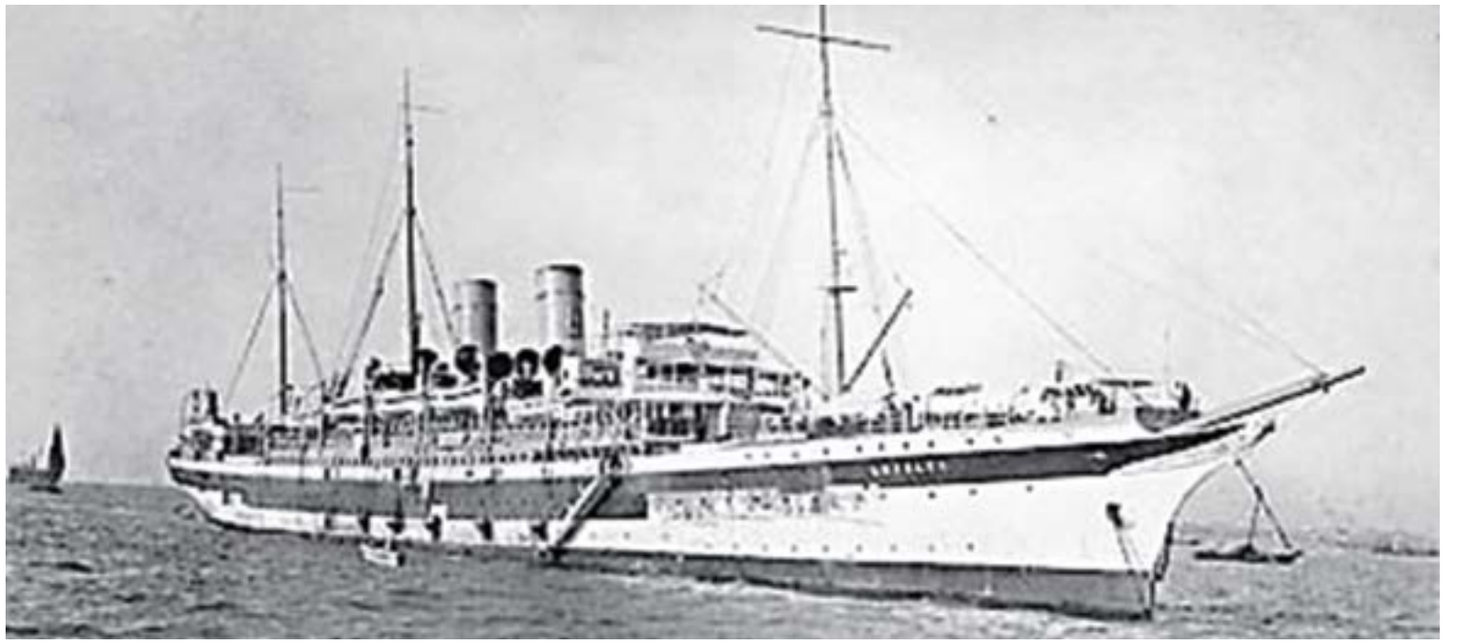
As the thirst for independence increased, the sea became the final frontier in the struggle for freedom. Many stalwarts contributed, and quite a few noteworthy maritime incidents occurred, during the Indian freedom struggle.

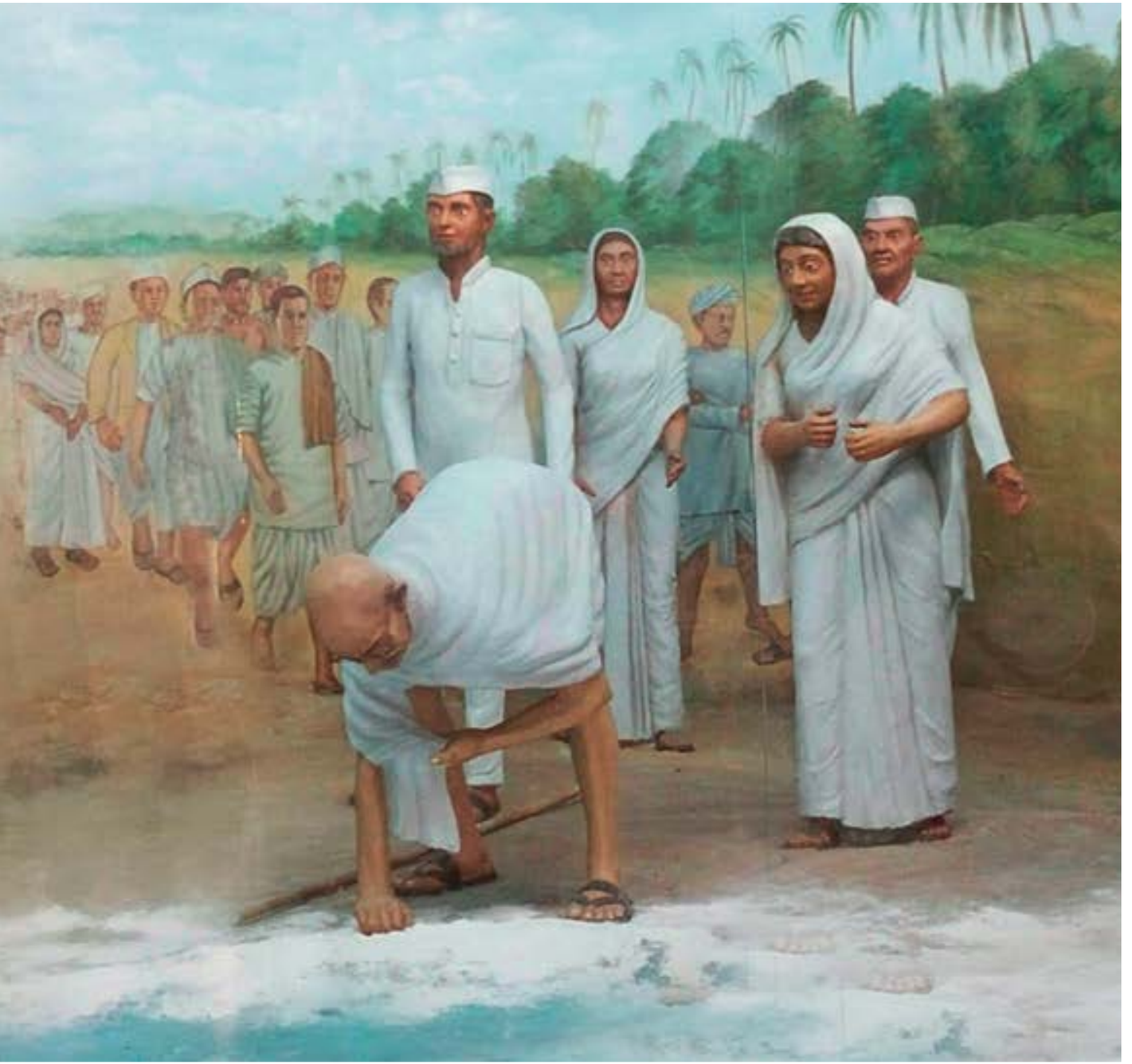
The Swadeshi Steam Navigation Company

In the early 20th century, the British India Steam Navigation Company (BISN) had a monopoly over trade in the Indian Ocean region. Sensing correctly that breaking this monopoly would force the British to wake up to the demands of the Indians for freedom, a young man from modern day Tamil Nadu, V.O. Chidambaram, started the first Indian shipping company in 1906 CE. He named it the Swadeshi Steam Navigation Company (SSNC). In the beginning, the SSNC did not own ships, but leased them. In retaliation, the BISN forced the cancellation of those leases. Without losing heart, V.O. Chidambaram leased a single large freighter from Sri Lanka, and aware of the need for the SSNC to own its own vessels, he travelled around India raising capital and eventually purchased the company's first ship, the SS Galia. He also later purchased the SS Lavo - both from France. To drive V.O. Chidambaram out of the shipping business, the BISN reduced their fare per trip and even offered free trips with the intention of creating a price war. While doing so, they underestimated the nationalist sentiment and their free service went underutilised.

The BISN then attempted to buy out V.O. Chidambaram, but he refused to sell. The British waited for their opportunity and when V.O. Chidambaram became directly involved in the political movement against British rule, they charged him with sedition and arrested him. He was incarcerated and by the time he came out, the Swadeshi Steam Navigation Company had already been liquidated and his ships auctioned to their competitors. On 05 April 1919, SS Loyalty, the first ever ship commissioned by M/s Scindia Shipping Company, sailed from Mumbai to London. To commemorate this epochal voyage, the Government of India, in 1964, declared 05 April, as the National Maritime Day.

As the freedom struggle gained momentum, the Indian maritime community devised ways of defying the British. In 1906, V.O. Chidambaram established the first Indian shipping company – the Swadeshi Steam Navigation Company and leased ships that were plying between Tuticorin and Colombo. The Swadeshi Steam Navigation Company was founded to compete against the British India Steam Navigation Company, which practised monopoly during the time. This is a picture of the ship SS Galia on her maiden voyage flying the Swadeshi Steam Navigation Company colours.





The Dandi March

The Dandi march of 1930 CE was the first organised resistance against the British since the Non-Cooperation Movement of 1922 CE. Protesting the unfair taxes levied on salt, which was mostly produced by coastal communities, Mahatma Gandhi began his march from Sabarmati Ashram near Ahmedabad and headed to the coastal village of Dandi, located at a small town called Navsari in the state of Gujarat.

As he walked this 24-day, 240-mile (390 km) march to Dandi, many of the people who joined him were coastal villagers and others whose livelihood depended on the sea. When Gandhi broke the draconian Salt Law at 18:30 hrs on 06 April 1930, it ignited a large number of similar acts of civil disobedience against the British Salt Law by millions of Indians. The contribution from the coastal folk during the salt law protests has since become an integral part of Indian maritime folklore.

The Dandi march of 1930 CE was one of the watershed moments of the Indian independence movement. Mahatma Gandhi, the father of the nation, played a pivotal role in uniting the people during the freedom struggle. He led his followers through a 24-day march from Sabarmati Ashram in Ahmedabad to the small coastal village of Dandi in Gujarat in a bid to 'illegally' produce salt from sea water to send a strong message of non-violent disobedience to the colonial British government.

The Era Post Independence

'By and large, I think it is said that even in the past and remote ages, it was the seafaring nations that prospered, both from the point of view of power and wealth, because of trade and commerce. I do not say that land-locked nations have not been very powerful; they have been certainly powerful, for periods at a time, but, on the whole, the importance of sea-power has been a dominant feature of history.'

– Jawaharlal Nehru

The dawn of 15 August 1947 brought new hopes and opportunities to the citizens of free India. The Indian government adopted a policy of self-sufficiency, or Swaraj, as an economic philosophy. As a result, shipbuilding and the management of major ports like Kochi and Visakhapatnam were conducted as public enterprises of the government. Naval bases were also built in these two ports. To promote maritime trade, the Indian government approved the construction of more than a hundred minor ports. Ports like Kandla, Tuticorin, Paradip and Surat began slowly regaining their past glory as thriving ports exporting specific regional goods. More technology and infrastructure were inducted as time

went by. This period also marked the decline of sea passenger trade. As journalist Gavin Young observes, there were only cargo ships for travel, and in 1979, there were almost no passenger ships, as airlines had taken over. Some routes, like Madras (now Chennai) to Port Blair survived for some more time, as passengers had more luggage than what was normally permitted by air. The decline in passenger ships also occurred along coastal routes. As Young describes it, an example of the journey by sea from Mumbai to Goa would be overnight, with the passenger waking up to the picturesque arrival at the estuary of the Mandovi at dawn. These routes died in the 1980's, as they were not profitable, and now, it takes only about 45 minutes by air between Bombay (now Mumbai) and Goa. Steamers plying between Chennai – Penang and Singapore, carrying Tamil and other Indian settlers and labourers have disappeared, only to be replaced by active air traffic. Large scale migrations of Indians to East Africa, Persian Gulf, South Africa, Malaysia, Indonesia and other Indian Ocean islands as labourers occurred in the early half of the 20th century and continue to exist as a smaller but significant scale of migration. The experience of people from India in the oil rich Gulf states makes a case study. In 1981, there were more than 2,76,000 Indians in Saudi Arabia sending more than US $4 billion, a very useful amount of foreign exchange. One of the greatest survival stories of the 20th century is of the famous dhows - the work-horses of the northern Indian Ocean, from an earlier period. The centre of the dhow trade today is on the west coast of India. Dhows remained viable and were also used to smuggle restricted goods, when the Indian economy was regulated till the late 1980's. Dhows are built to be small and cheap, and could smuggle considerable amounts of gold from Dubai, for example. Even today, the unorganised trade on dhows between ports in the Gulf Cooperation Council (GCC) and South Asia exceed the formal channel of merchandising as freight charges on dhows are a fraction of the cost.

The British Navy withdrew east of Suez and handed over control to US Navy. Over a period, towards the end of the 20th century, the US emerged as the strongest naval force in the Indian Ocean. Diego Garcia (a ring shaped coral reef in the Indian Ocean) became the central point of presence of the US Navy. Navies of all hues have vied for 'presence' and 'control' in the Indian Ocean. The central location of the Indian peninsula, stretching into the Indian Ocean, provides the Indian Navy with a unique advantage. Fishing communities have enjoyed the benefits of some supportive policies from successive central and state governments of the coastal region. Due to rapid adaptation of new technologies and increasing adverse natural phenomena like global warming, new ecological and environmental challenges are beginning to take shape that could threaten India's maritime heritage. The story of Indian maritime heritage post-independence is, therefore, one of growth and glory, even as it is accompanied by multiple challenges.

This picture from the 1950's portrays the busy atmosphere that existed then around the Mumbai port. The Mumbai port is a natural deep-water harbour and covers over 400 square kilometres. It has been a bustling port for centuries and the Mumbai Port Trust is constantly endeavouring to keep up with the expanding traffic and modernisation requirements. Mumbai Port had three enclosed wet docks viz., Prince's Dock (commissioned in 1880), Victoria Dock (commissioned in 1891) and Indira Dock (originally named Alexandra Dock, commissioned in 1914). However, due to increased container traffic, the Port Trust is filling up Prince's Dock and Victoria Dock to provide space for container traffic that would arrive with the completion of an Offshore Container Terminal in Indira Dock.

Maritime Heritage in the New Millennia

India, one of the fastest growing economies in the world, has signed important defence, economic and commercial agreements with other world powers. It is also a founder member of the Indian Ocean Rim Association, which aims to remove trade barriers and promote balanced growth of the member countries in the Indian Ocean Region (IOR). The valiant Indian Navy has been in the forefront of providing humanitarian assistance and conducting disaster relief to counter natural disasters not only in the Indian coastal states but also in the Indian Ocean littorals. The Humanitarian Assistance and Disaster Relief (HADR) operations in the wake of the Indian Ocean tsunami of 2004 and the numerous cyclone and earthquake relief operations are testimonies of commitment and professionalism. The Indian Navy has also been at the forefront of anti-piracy operations from the Persian Gulf to the Strait of Malacca, and continuous deployment of naval forces against the scourge of piracy has resulted in the Piracy High Risk Area being shifted westwards from Indian waters in late 2015, with consequent effect on cost of freight insurance. Indian Ocean Naval Symposium (IONS) is another Indian Navy led initiative to provide a mechanism for navies of the IOR to address issues of common concern.

India has emerged as one of the most influential maritime powers in the region, protecting both economic and security interests of India and other friendly nations of the IOR. India has also reached out to its south-east Asian neighbours as part of its

'Look East', and presently 'Act East' policy established with the aim of reviving ancient cultural, civilisational and economic ties. With the Indian government's focus on maritime infrastructure development, including coastal roads, coastal shipping and development of ports under its ambitious 'Sagar Mala' programme, India's maritime prowess is set to grow. With all-round maritime activity growing at an exponential rate, the future of India is bright for the on-going tale of India's maritime heritage. India was, is and will remain a maritime nation as it is endowed with all the characteristics of a great maritime power. It needs to look to the seas, again.

India is advancing her maritime capabilities through concerted efforts to develop ports, infrastructure, shipyards and coastal shipping, etc. India's economic growth is directly related to growth in the maritime sector since India is a maritime nation with its vast coastline, deep natural harbours and coastal industries. If India is to sustain economic growth in the maritime sector, efforts need to be channelled towards enhancing efficiency of the maritime sector and boost business of ancilliary industries. In this, the Indian Navy will "ensure maritime security to enhance national prosperity".

II - THE TREASURE TRAIL

Maritime Trade Routes and Trading Stories

BAGHDAD
BASRA
SIRAF
HORMUZ
CAMBAY
SURAT
INDIA
MASULIPATNAM
CALICUT
QUILON
CEYLON
ARABIAN SEA
BAY OF BENGAL
STRAIT OF MALACCA
ADEN
SHU
Descendants
Paropamisan Mts
Sephar?
R. Amu (Oxus)
R. Tarim
Desert of Gobi
R. Indus
R. Helmund
R. Ganges
Cushite tribes early settled here
Sabteh
Raamah
Sabtechah
Havilah
Persian Gulf
HINDUSTAN
BIRMAH
SIAM
Malacca
INDIAN OCEAN

Trade Story of India

The Indian Ocean has been among the most vital and prosperous maritime regions even since the days of the Harappan civilisation. Right across the subcontinent's coastline - from the Konkan and Malabar coasts on the west to the Coromandel coast right upto the Sunderbans on the east, archaeological evidence establishes the fact that maritime trade has been a constant feature of the Indian subcontinent from the prehistoric period till the British colonial era. Evolution of history, culture, industrialisation and the many religions here were all inextricably intertwined with the evolution and growth of maritime trade in the Indian Ocean. Study of the sophisticated system of water fronts that existed for loading and unloading cargo in ports like Lothal and Dholavira of this era indicate that they were all largely designed with trade and commerce in mind. Indus Valley seals and weights found in ancient ports of Muscat, Dilmun, Failaka, Brak and Arpachiya all point to vigorous maritime trade links within the Indian Ocean region. However, these important early ports did not face the sea; instead, they were often located at the mouth of river estuaries or other large tidal inlets. Open sea anchorage was not practised in the Indian subcontinent until the 17th century CE. More importantly, each of the important port cities of the past sustained itself from the patronage of kings and feudal lords. This chapter covers the story of maritime trade region wise, across time, and the important river based sea ports of the Indian subcontinent - the struggle for control of ports to influence trade by sea, which impacted the history and heritage of India.

Maritime trade in Indian subcontinent evolved with the exploitation of the monsoon winds resulting in trade across the Arabian Sea and the Bay of Bengal. South Asia has multiple maritime trade routes to different regions in the Indian Ocean. This multiple connectivity prevented exercising of monopoly by control of mere one or more sea routes. It required a 'significant' maritime power to take 'control' of these trade routes. The image is a bas relief of a trading vessel found in Odisha state museum showcasing its voyage to distant lands across the seas.

Types of Trade Routes By Nature of Sailing Method

Historians have classified ancient trade routes as 'coastal' and 'overseas' routes. Weather and prevailing wind patterns determined the overseas trade routes that required crossing the ocean and hence, the predominant monsoon winds determined the most vibrant routes in the Indian Ocean region.

The 'great circle' route which was navigated along the shortest distance between embarking and disembarking ports, 'parallel' route that was sailed parallel to latitudes and the 'rhumb line' route which required ships to be sailed at a constant angle off the longitude, were the three kinds of overseas sailing methods.

Coastal trade routes that run close to, and along the coasts, have been the prominent feature of the Indian Ocean trade until the medieval period, especially along the west and east coasts of the subcontinent.

Historically, cotton and spice were India's more sought after products. Cotton found mention in ancient epics while spices were in great demand in foreign lands. India was among the the biggest buyers of silk from China. While India also produced silk, the finish of India-made silk did not match the fine finish of the Chinese silk. The Chinese silk was smooth, fine and felt 'regal' to touch. Maritime trade routes began to be named after the products carried on vessels plying these routes. 'Spice Route' and 'Silk Route' are two such famous routes.

Trade Routes on the West Coast - Ancient Period

The similarity in the steatite trading seals found in Lothal, in ports at Dilmun (modern Bahrain) and the Euphrates delta, indicate flourishing maritime trade links between Indus Valley ports and the ports of Magan (Oman), Sumeria, Babylonia and Red Sea ports of Egypt. Indus Valley seals and weights found in Oman, Dilmun, Failaka, Brak and Arpachiya all point to this facet of early maritime trade. After the decline of Lothal and Dholavira, Dwarka and Prabhasa (Somnath) on the Kathiawad coast became prominent ports in the 2nd century BCE. The port cities of Gujarat played a dominant role in promoting trade and commerce with the Greco-Roman world in the early part of the Common Era. Inscriptions found in Nasik, Karle, Kuda, Bhaja and Bedsa point to shipment of vast quantities of coloured cotton from Tagara, beads from Maheshwar and Navdatoli, and Bengal cotton from Ujjain. All were exported to ports in the Arabian peninsula and in the Mediterranean through Bharuch, which had gained prominence, both, as an important place for religious activities and a prosperous port. Pliny's observation that "there was no year in which India did not drain the Roman Empire of hundred

million sesterces" only reinforces the fact. At its peak, between the 1st and 2nd century BCE, Bharuch was the most important port across the central, northern and western regions of the subcontinent. While the Greco-Roman maritime manuscript 'Periplus' refers to Aparanta in the northern Konkan coast and Larike in the central and southern Konkan coasts, none of the ports in the region date back to Vedic times. Some of the key ports during the ancient period were Sopara, Kalyan and Seymulla. Other ports such as Mandagora, Kanheri, Armagara, Togarum and Auronnoboas were all actively engaged in maritime trade. Sopara is mentioned in an edict by Ashoka, was referred to by the Greco-Egyptian writer Ptolemy and also in the 'Periplus', as a major port.

Konkan ports underwent rapid development as an offshoot of trade ties with the Romans during the reign of the Satavahanas. Evidence suggests commercial campaigns were flagged off from Nanaghat, Chaul and Rajpuri to Zizerus. While Thane was a major port during this period, Chaul, Mahad and Rajpuri also came into prominence during the Satavahana rule. The eco-system for trade, even in those periods, was quite process driven, as evidence of 'trade guilds' discovered in the Chaitya caves at Karli points out. These guilds were self-governed, negotiated strongly and competed effectively. Nitran, Naravu, Muyirikodu, Waikarai, Vizhinjam, and Kanyakumari along the Malabar coast were important ports. Tyndis had Roman ships calling at the port. Located at the mouth of River Periyar, it was surrounded by a hinterland that produced pepper, and beryl mining at Karur, the then Chera Capital.

In May 2001, India announced the finding of underwater ruins in the Gulf of Khambhat, a 9 km stretch off the coast of Gujarat at a depth of about 40 m. The excavation has opened up a huge discussion on the cultural sequence of Bet Dwarka Island. Quite clearly, this excavation points to the fact that around the 7th century BCE early Harappan people had established their vibrant settlement in this area. This is an artist's impression of the bustling port town of Dwarka showing various merchant ships docking at Bet Dwarka. Dwarka has the added significance of being one of the Sapta Puri (seven sacred cities) of Hinduism.

BRIDGING THE COMMUNICATION GAP

This image of Shu-ilishu's Cylinder Seal from Mesopotamia, preserved in the Department des Antiquites Orientales, Paris, provides considerable details of India's Bronze Age society. It shows a personal translator of the ancient Meluhhan or Indus language, Shu-ilishu. He lived around 2020 BCE, during the late Akkadian period, providing evidence of use of translators between old world cultures for efficient communication, as is prevalent even today. It also establishes the fact that considerable overseas trade took place in the subcontinent during the Bronze Age, which necessitated use of translators.

Medieval Period

Hiuen Tsang, the Chinese traveller, visited India during this period and wrote that Gujarati and Kathiawadi people derived their livelihood from "the commerce of the sea". Suleiman, a merchant of Basra, also mentions ports in Gujarat and their maritime trade activities in his travelogues. Some of the key ports of Gujarat during the medieval period were Lakhpat (near the Indo-Pakistan border), Jakhau, Koteshwar, Okha, Porbandar, Mangrol, Diu, Piram Island, Daman and Navsari. Ports such as Vallabhi and Somnath also gained prominence during this period.

Sopara and Chaul were the only ports of north Konkan coast that survived the ancient period and continued to dominate in the medieval period. Thane was a river port that had access to the sea from two sides and became a key port for trade in horses with Arabia. The largest trading point for horse in that period was Ghodbunder, near Thane. Mahim (Mahikavati) was a trading point that witnessed very hectic trading activity by Arabs, Persians, Gujarati, Tamil and Chinese merchants between the 13th and 18th century CE. The Rashtrakutas ruled the Deccan from 753 CE to 10th century CE and they contributed immensely to the emergence of the Konkan belt as a maritime trading region. When the Bahmani kingdom rose, with Ahmednagar as the capital in the 15th century CE, trading significance shifted from Thane and Mahim to Chaul. During this period, trade links were strong with the Mediterranean ports, west Asian and

Persian ports like Basra, Dilmun and Hormuz. The entire period from the 5th to 15th century CE was peaceful and maritime trade flourished. Mangalore was an important port even in medieval times. To the south of Mangalore were small ports of Manjeshwaram, Kumble, Kasaragod, Nileswaram and Azhikal, which carried out commodity trading within the region. Further south, Kannur attracted trade from Arabia and Maldives. To its south, Kozhikode, the capital of the Zamorins between the 13th and 15th centuries CE, was the hub of trade with the Arabs. Ponnani, Chetwai, Kollam and Vizhinjam were other ports that witnessed considerable trading traffic. There were strong trade connections between Egypt and the Malabar coast, and this fact is documented in the 'Geniza manuscripts'. Detailed evidence of maritime trading ties between the Malabar coast and Gulf coasts are found in documents of Ibu of Maqaddam. As trading engagements with Persia overtook Rome, the nature of commodities also changed.

People undertook sea voyages since ages despite the fact that the sea was mysterious, intriguing and challenging. Seen in this picture is a sculpted block retrieved from an excavation that indicates a voyage undertaken in the medieval period. The presence of two people rowing the boat, and one person attending on the person sitting third from right, indicates the presence of a hierarchical system in those societies. A boat that follows the leading ship is seen to be carrying an elephant onboard, indicating the possibility of seaborne elephant trade in India. Representation of creatures like fish and squid in the sculpture points to a sea voyage indicating such voyages were not uncommon.

Colonial Period

During the Mughal period, Gujarati trade expanded steadily, and reached its peak in the 17th century CE. Trade between west Asia and Gujarat flourished under Portuguese security umbrella and the Mughal elite. Most of the trading ships were owned by the Gujarati community until the advent of the Portuguese. After an attack on a Haj ship by Portuguese vessels, their delicate relationship with the Mughals turned sour. This incident also coincided with the decline of Khambhat as a prominent trading hub. The control over the shipping lanes by the Portuguese led to further worsening of the situation between them, eventually leading to the British establishing their presence in Surat.

Surat was the most important port in colonial India. Around the mid-15th century CE, the Portuguese had established monopoly over the region and captured Diu, threatening Indian merchants of that area. Gujarati traders had been trading with the Persian

After the arrival of the German traveller Johan Albrecht de Mandelslo in 1638 CE, trade between Germany and Surat flourished. Seen in this picture is the painting Die Stadt Surate Oder Souratte (German for the city of Surat or Souratte) of 1719 CE vintage. It provides an elaborate view of the port of Surat. Historically, the city served as the most vital port for the Mughals. The painting indicates a busy port with two ships in the foreground. Surat had been a trading port since the 11th century, exporting spices, silk, muslin and porcelain to Malacca.

Gulf, Red Sea, Aceh and Sumatra (Kedah and Bantam) during the period between 15th and 17th centuries CE. The Dutch and the British came into contact with the Gujarati merchants through their trading operations in south-east Asia. Around the mid-15th century CE, the Portuguese had established monopoly in Gujarat region of the west coast. Special passes called 'cartaz' were provided for ships on payment of some money. The British were barred from trading in the Gulf of Khambhat. The British East India Company was desperately looking for a toehold in Surat, which led to armed conflicts between the British and the Portuguese. The British reinforced Bharuch in the neighbourhood, which allowed them to anchor their merchant ships on the west coast. The French eyed Gogha but were challenged there by the British. As the colonial powers established monopolies in various ports, the port cities of Gujarat declined along with the Mughal empire.

Trade on Konkan coast began to be threatened with the arrival of the Europeans. The local Indian rulers did not have navies that could counter the colonial powers' influence. The Kunjalis' resistance of the Portuguese spilled over to the Konkan waters. Later, the Portuguese also feuded with the Marathas. However, maritime trade progressed due to the demand for central and east African products and the opening of Suez Canal. Coupled with the rise of textile and other industries in Mumbai, passenger traffic and maritime revenue of the Konkan coast increased. From the 9th to 14th century CE, Arab ships and merchants dominated maritime trade in the Indian Ocean region, while Persian and Indian vessels were minor players. In the 12th century CE, Chinese ships appeared over the horizon of the Konkan coastline. The Portuguese remained dominant off the Gujarat coast between 15th and 16th centuries, and all Gujarati ships had to call at Diu, which was under Portuguese control.

Between 1500 and 1800 CE, rounding the Cape of Good Hope was the main route to the east from Europe. After the opening of the Suez Canal in 1869, the route around the Cape of Good Hope lost importance. With the British dominance in Malabar, and the creation of three political entities of Kochi, Malabar and Travancore, the importance of the hitherto thriving west coast region was greatly reduced to almost becoming insignificant.

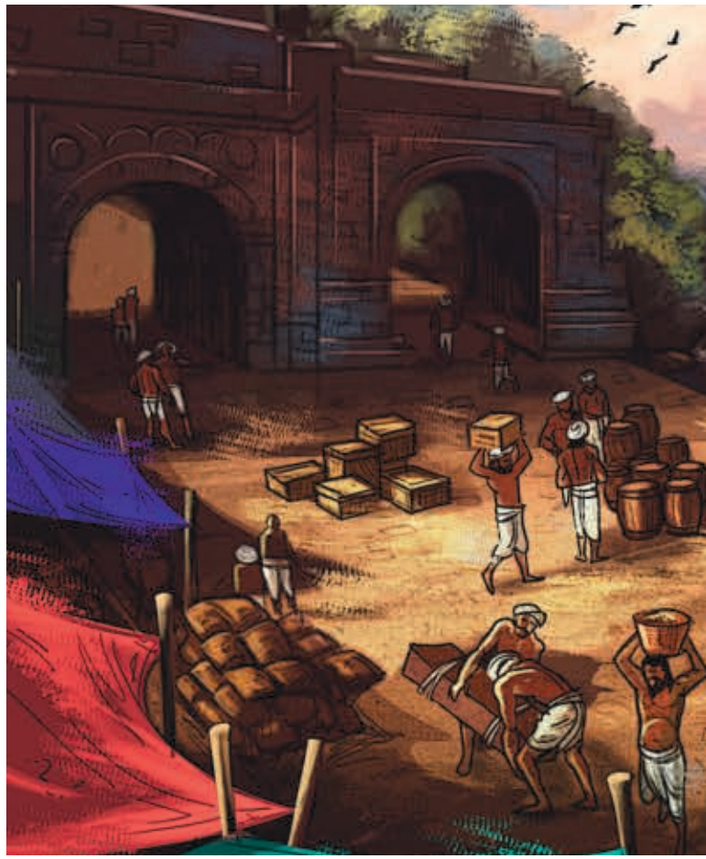
Post-Independence Period

The coastal state of Gujarat is emerging as a major maritime trading hub of modern India. About 75% of all cargo, to and from ports in India, is actually handled by the ports in this state. The Gujarat Maritime Board, formed in 1982, manages the 41 non-major ports (11 intermediate and 30 minor ports) and the one major port in Kandla is under the central government port management.

The rich traditions of international mercantile trade of the Indian people continue to remain relevant even today as the country enhances trading relations with maritime countries around the world. The image shows a Shipping Corporation of India vessel sailing in the Suez Canal. For a nation that was a conglomeration of several kingdoms and Sultanates across different periods of time but still contributed a significant percentage of world trade in the ancient era, expansion of Indian merchant shipping is an important element for growth, today.

Some of the key minor ports in present day Gujarat are Mundra, Hazira, Dahej, Navlakhi, Mandvi, Bedi, Sikka, Okha, Porbandar, Veraval, Bhavnagar, and several others. The major port of this region is Kandla. Developed in 1930, it is now regarded as the 'Port of the New Millennium' and is well on its way to attaining the status of Asia's Supreme Global Logistics Hub.

Mumbai is the most important port in independent India. Mumbai handles approximately one-fifth of



India's foreign trade, predominantly in dry cargo and oil from the Gulf. About 10 km from Mumbai is the Nhava Sheva Island on which is built the Jawaharlal Nehru Port Terminal, which is equipped with modern container and oil handling facilities to share the increasing load on the older Mumbai port.

Mormugao is an important port of Goa, located at the entrance of the Zuari estuary, with the capacity to handle 16.1 million tonnes of iron ore, manganese, coconut and other nuts, cotton, etc. It has a comparatively small hinterland covering the whole of Goa, parts of north Karnataka coastal region and southern Maharashtra. Kochi and New Mangalore ports have also emerged as important trading ports. The Kochi Oil Refinery receives crude through this port. Establishment of a container trans-shipment terminal at Vallarpadam, construction of a liquefied natural gas (LNG) terminal at Puthuvypen and setting up of an international bunkering terminal in Kochi will further boost the importance of the Malabar coast in the modern period.

Trade Routes on the East Coast - Ancient Period

In the ancient period, the Malabar coast and the Coromandel coast were seen as a single trading entity. However, these coasts are distinct since the east coast is subject to different influences when compared to the Malabar coast. Veerai, also popularly referred to as Arikamedu, was a Roman trading station even as early as 1st century CE. Further north was the port of Mailarphan (or Mylapore), mentioned by Ptolemy as a port with considerable external trade. The Mambalam hoard of punch marked coins suggest that Mailarphan was one of the exchanges for external trade and an anchor berth for merchant guilds.

During the ancient period, Kalinga was a prosperous and important trading centre, controlling overseas trading engagements. Evidence of terracotta objects, seals in Kharosthi and Brahmi scripts prove that merchants of Kushana or Yuezhi had trading ties with south-east Asia. Tamralipti was the most important port in the Odisha-Bengal region for Kalinga merchants.

Seen in the image is an artist's impression of the port of Muziris. It was an ancient seaport and urban centre on the Malabar coast (modern day Indian state of Kerala) that dates from at least the 1st century BC, if not earlier. Muziris has found mention in the bardic Sangam literature and a number of classical European historical writings also.

Medieval Period

During medieval times, the Gulf of Mannar, a shallow bay in the Indian Ocean, had extensive maritime activity with its pearl and shell fish related trading, and also due to the fact that this was the shortest route between the Arabian Sea and Bay of Bengal. This encouraged hectic coastal traffic. Small ports such as Kulasekarapattinam, Kayalpattinam and Kilakarai were populated by Arab immigrants. Old Thoothukudi and Palayakayal became important hubs in the early medieval period.

A port called Mantai was a key centre for trade with the Chinese. The establishment of a Buddhist vihara by the Pallava king Narasimhavarman and of a Buddhist stupa by a Sailendra king, Mara Vijayathungavarman, on the approval of Rajaraja Chola, are indicative of prosperous maritime trade relationships between the Cholas and south-east Asian kingdoms. Trade occurred through the ports of Cholapura, Darasuram, Periapattinam, Palayakayal, Devipattina and Nagapattinam.

Sculpture at Konark Sun Temple indicating India's established maritime trade linkages with other countries and civilisations. The presence of a giraffe in the sculpture depicts maritime contact and trade with Africa.

Merchant guilds were classified as local, regional and supra-regional. Among them, like Nagaram, had local bodies of trade organisations and smaller ones like Manigramam and Anjuvannam had them even at village levels. South Indians began migrating to Kalinga during the medieval period, when textiles, elephants and ivory were traded. This helped them establish links with the Arabs.

Treatises such as the Brhatkathaslokasangraha and Upamitibhavaprapancakatha talk about Indian merchants in Indonesia. As also detailed in Chinese inscriptions, Kalinga and China engaged in maritime trade regularly. Coins and ceramics from the Sung dynasty found in south India point to active trade between the regions in the 11th and 12th centuries CE.

Chola kingdoms reached out to China to increase trade in the period of Srivijaya's ascendancy. The decline in Indo-Roman trade during the Gupta period shifted the emphasis to south-east Asia. Ptolemy wrote about Dantapura in Kalinga as an important port that conducted trade with Sri Lanka and countries of south-east Asia. The Mughals, who ruled India between the 16th and 18th centuries CE, had an efficient and helpful policy for trade. The coinage system for transaction first became prominent during the Mughal era. However, skirmishes over port tax kept growing as the Europeans encountered Mughals at the Indian ports. The Dutch constantly confronted them while the Portuguese and British earned the favour of the Mughals.

The Brahmin Kadamba dynasty of Goa began with the establishment of feudal lords under the Chalukya dynasty. Eventually, Shashthadeva I defeated the Shilaharas and established the Kadamba dynasty in 960 CE. Under the Kadambas, the Goan port of Gopakapattna had trade ties that extended across the Konkan region, the Bay of Bengal, Ceylon (Sri Lanka) and even Africa. Seen in this image are coins that were in use between 1147 and 1187 CE. These were issued by King Shivachitta Paramadideva. The influence of the Brahmin Kadamba dynasty was far reaching, and it had political relations and marital alliances with even the Gupta dynasty of the north.

GREAT DESERT
ETHIOPIA
SOUTHERN AFRICA
CHINESE EMPIRE
TOURKISTAN
PERSIA
CABOOL
BELOOCHISTAN
HINDOOSTAN
JAPAN
AUSTRALIA

Indian civilisations trade links reached to Mesopotamia and Egypt around 3000 BCE; and Arab ports such as Dilmun (Bahrain) and Magan (Oman) in 1000 BCE.

Indian kingdoms indulged in trading activities with Greece around 300 BCE. Trade with the Romans commenced around the 1st century BCE.

As trading spread across the Arabian Sea, direct trade links were established with East Africa and South Africa in 100 CE.

Trade ties with south-east Asia flourished around 300 CE and flagged off an indelible exchange of traditions, beliefs, philosophies, religion and culture.

Trading links with China (around 400 CE) and Japan (around 700 CE) established India's influence over trade in the east Asian region.

Contact with Australia and New Zealand existed around 1400 CE has been established by the detection of a number of Indian items and artefacts washed ashore from a possible shipwreck off the coast, and found by unsuspecting Aborigines and Maoris.

Colonial Period

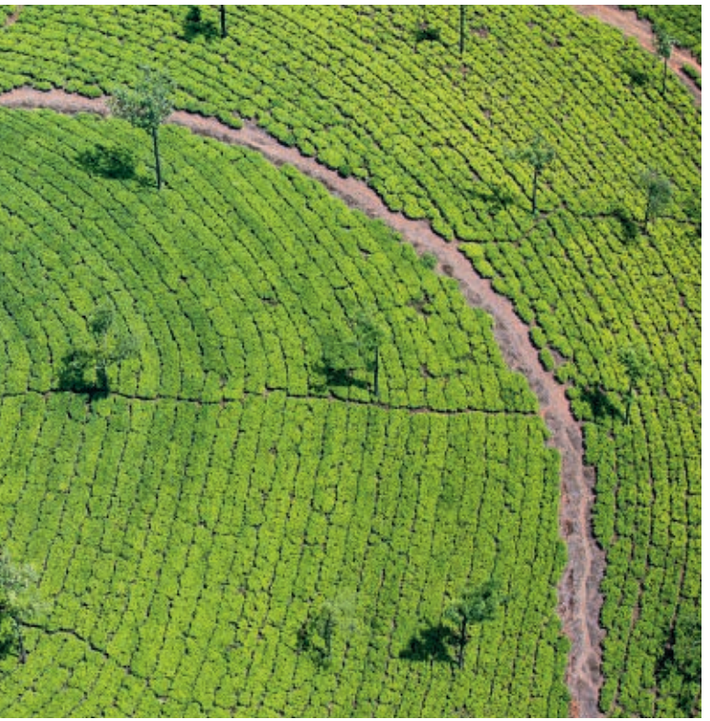
On the east coast, the last of the Cholas and Pandyas were locked in struggle for supremacy. Consequently, both river and maritime trade suffered substantially. The old and medieval ports underwent steady decline. A few ports managed to grow largely because of colonial traders. The Gulf of Mannar coast had a few colonial ports. Old Thoothukudi, in particular, rose as a medium port handling coastal traffic and short passenger voyages to the west coast of Sri Lanka. Nagapattinam emerged as a passenger port for Andaman and Nicobar islands and south-east Asian traffic. Nagore, Karaikal (a French roadstead) along with Cuddalore emerged as colonial ports. Mamallapuram, further north, was now ruined and of limited utility. A small port called Santhome came into prominence north of Mamallapuram. Mailai was a small Portuguese port with a fort in the vicinity. Masulipatinam grew into a major port coinciding with the consolidation of the rule under Sultanate of Golconda and continued to be a major trading port under the European reign. Trade with Burmese ports of Pegu, Bassein, Tavoy and Martaba, and Aceh grew in volume.

The Europeans – especially the Dutch – were able to exert control over trade in the Bay of Bengal by occupying the Malacca Strait and Java in the 16th century CE. Traditional trade links between Kalinga, and south-east Asia and China consequently stopped. Restrictive provisions of the Dutch East India Company, of excluding textiles, cinnamon etc., was a great dampener on the volume of Bengal - Sri Lanka trade. Over the 17th and the early 18thcentury CE, the Coromandel ports witnessed more trade than Bengal. Hooghly and Balasore were the most important trading ports in Bengal until they were replaced by Kolkata in the mid-18th century CE. Kolkata mainly shared trade links with the west – Surat, Persian Gulf and the Red Sea, and exported textiles and sugar. After the British established themselves as the rulers of Bengal, a rise in profits of private trade resulted.

Items of Trade

Over time, the items of trade have seen considerable changes. Gujarat and Konkan exported indigo, textiles, silk, rice, wheat, pepper, opium, medicinal herbs, perfumes, and ivory. In the medieval period, the ports of Gujarat acted as transit points for items from Persian Gulf littoral countries. In between the Mughal era and independence period, Aceh and Sumatra re-exported Gujarati and Sindhi textiles to China. Exports to Mocha included Indian textiles, cotton, indigo, tobacco, rice, wheat, spices, ginger and sugar from Bengal while imports consisted of horses, silk, dried fruits, rose water, wines, and Persian and European gold and silver. While iron and gold were exported, Italian, Laodicean and Arabian wines, and frankincense were imported. Ivory and indigo were major items of trade with the Romans. In medieval times, Thane witnessed huge imports of items like gold, silver, copper, brown incense, cotton cloth and leather goods. During the rule of the Rashtrakutas, cotton yarn, cloth, muslin, hides,

mats, and ivory were exported. The northern end of the Malabar coast, Bhatkal, Kundapuram and Malpe carried passenger and commodity transport traffic towards Lakshadweep, during the ancient period. Spices, precious stones, mineral ores and animals were exported to Egypt, Euphrates and Tigris, Greece and Rome. Crude oil from west Asia and high value consumer goods and machinery are major items of imports. The Coromandel coast had commercial ties with Sri Lanka that traded in gems and spices, with south-east Asian kingdoms and Chinese ports that exported silk, porcelain, salt and sugar. Merchants from the Philippines traded in gold, silver, and gemstones like coral. In medieval era, items like pearls, perfumes, textile fabric were exported on a



large scale and import of spices, drugs, luxury items, jewels, rhino horns and corals witnessed a surge during the same period. Tamralipti was the hub for the export of black pepper, white sandalwood, tortoise shell, ivory and pearls. Antiquities were light in weight and of high value, which fetched high profit; hence merchants from Kalinga traded actively in antiques. Today, Paradip exports iron-ore to Japan and coal along with some other dry cargo. Kolkata, the business and financial hub of eastern India, is the main port for exporting jute products, tea, coal, steel, iron ore, copper, leather and leather products, textiles, manganese and many more items. Imports largely consist of machinery, crude oil, paper, fertilizers and chemical products.

Tea was brought to India by the British. They began planting tea in the areas under their control and soon, large scale production of tea commenced. Since the time when the colonial rulers brought this popular beverage via the sea, India has emerged as the second largest producer of tea in the world. West Bengal has been one of the leading and vital tea producing states and is responsible for as much as 25% of India's tea production. Today, tea is an integral part of India's culture and cuisine. The plantation and brewing of various blends of tea has been perfected by Indians over generations.

Modern Trade (1950 to 2015)

The government of India policy now encourages opening of ports. Gujarat has one major port and 41 non-major ports. Other coastal states are also progressing with the expansion of ports and coastal traffic. Independent India has made great efforts to turn fishing into a major source of food for the domestic market and foreign currency earner from exports. The catch rose from 500,000 tonnes in 1985 to 5.4 million tonnes in 2015. The natural pearl industry of Gulf of Mannar has fallen into bad times and has been taken over by cultured pearls. The Indian government's 'Make in India' policy and the ambitious 'Sagar Mala' project that aims to connect all coastal cities and ports in India through road, rail and air, would considerably enhance the economic profile of both coasts. The new thrust to 'blue economy' concept will also encourage sustainable exploitation of natural resources of the Indian Ocean, realisation of the full potential of marine economy, and the growth of the marine leisure industry, with environmental concerns fully addressed. With India's external trade expected to multiply manifold over the coming years in keeping with India's economic growth, India's maritime trade will play an increasingly important role as a critical and strategic component of the nation's economic security. As the growth story continues, a new and vibrant chapter on India's maritime heritage is waiting to get written.

Traders travelled from far and wide to reach Indian shores where they could purchase and sell exotic wares. For many explorers and traders of the time, India was a land of great surprises and wealth. It was the Enchanting Land that produced exotic creations and products, not seen ever before. Traders became wealthy by acquiring, transporting and selling India's rich bounties such as cinnamon, spices, cotton fabrics, and pearls to the wealthy of the west.

III - MONSOON - WINDS OF CHANGE

Evolving Human and Cultural Landscapes

Maritime Shades in Mythology

The discovery of sea routes to India integrated it with the rest of the world. India benefitted from the diverse ethnicities that arrived here and Indians contributed enormously to their adopted countries across centuries of migration that see them as partners in their growth and evolution, even to this day.

Literature, religion, language, people, food, art, customs, etc., are elements of heritage that have been affected by influences that travelled, both inward and outward. This chapter will cover some of these influences that arrived in India by sea, and outside India - when Indian elements travelled there. Indian mythological stories have always treated the ocean with respect, and in several cases, reverence. Right from the Vedas and the Puranas to the great epics of the Ramayana and Mahabharata and innumerable other folktales across the subcontinent, the sea has played a central role.

Manu's Miracle: The Ship of Survivors

The story of Lord Vishnu's first avatar – the Matsya avatar – deals with a cosmic flood and the cataclysmic end of the universe. The narrative states that Manu was the first king of men and the noblest ruler of his time. Following his discovery of a magically growing fish, he is instructed by Vishnu to build a massive ship to save every living being from the impending floods.

Varuna - The Lord of the Oceans

Varuna is believed by Hindus to be the lord of the oceans, water and all marine life. The deity is, therefore, an important persona and makes an appearance in various myths and beliefs. In the Ramayana, Varuna initially invites Lord Rama's wrath when he refused to help Rama and his Vanara army cross the ocean.

Varuna eventually facilitates the building of a bridge that helped Rama's army cross over to Lanka. The Indian Navy has invoked Lord Varuna in its emblem and sees Lord Varuna as its benefactor, specially for units deployed at sea.

Samudra Manthan: The Churning of the Ocean

The legend of the churning of the ocean is about the devas (gods) and the asuras (demons), craving Amrit, the nectar of immortality. Since Amrit could only be obtained from the divine sea, they arrive at a temporary truce to churn the ocean, aided by Vishnu in his Kurma avatar as a large tortoise.

The sea throws up various small treasures, traps and even a noxious poison. Finally, Amrit emerges from the bottom of the sea. This story demonstrates how the ocean has occupied the collective Indian imagination, both as a trove of treasure and as a repository of dangers.

The churning of the Ocean of Milk was an elaborate process. Devas formed an alliance with asuras to jointly churn the ocean for the nectar of immortality and to share it among themselves. Mount Mandara was used as the churning rod, and Vasuki, the king of serpents who sits on the shoulder of Shiva, became the churning rope.

Lord Varuna, in Hindu ancient mythology, is the most powerful god of the Vedic pantheon. Varuna was later replaced by Indra as the chief god and his legacy faded with the ascendancy of Shiva and Vishnu as two powerful gods. As can be seen in the picture, is a statue of Lord Varuna kept at the National Museum, with Goddess Aditi beside him, seated atop a Makara.

Tamil Sangam Literature

The Sangam era, spanning from the 3rd century BCE, to the 4th century CE, is known as one of the most illustrious periods of ancient Tamil literature. Unfortunately, most of the authors of Sangam literature are anonymous. The Purananuru, Ahananuru and Maduraikanchi texts describe different types of seagoing ships using wind and sails to propel them.

'Nadi' is a form of astrology that is widely practised in Tamil Nadu, Kerala and adjoining regions. According to this form of astrology, the past, present and future have all already been witnessed by Hindu deities and that knowledge has been inscribed on palm leaves known as olai-chuvadi. The text written on these palm leaves is in the ancient Tamil script of Vattelutu. The texts were originally written by a Rishi (or sage) whose name was Agastya. Sage Agastya is believed to have possessed a highly developed consciousness and hence, was able to witness the passage and occurrences of time in advance.

The Ramayana

The Ramayana, one of India's greatest and most well-known epics, travelled to other nations through the voyages of traders, explorers and invaders. The story's original version in Sanskrit is known as Valmiki Ramayana, dating to approximately the 5th to 4th century BCE. There are several versions of the Ramayana within the region spanned by India's historical and cultural influences. Owing to India's strong trade and cultural ties established through the medium of the sea, almost every south-east Asian country including Cambodia, Laos, Java, Malaysia and Thailand, have their own versions of the Ramayana. The epic also made its way to Europe through the medium of the sea and a translated version garnered a lot of appreciation among aficionados of literature in France. The French historian Jules Michelet has waxed eloquent about the Indian epic and said, "Whoever has his heart dried up, let him drench it in the Ramayana."

Vishnu Sharma's Panchatantra

Vishnu Sharma compiled a collection of stories called the Panchatantra, which was passed on via oral traditions. While it is difficult to determine the exact date when he wrote the stories, some scholars estimate that it would have been between 1200 and 300 BCE. Since then, the Panchatantra has been widely translated into several languages. It is apparent that travellers across the seas heard the Panchatantra and then introduced it to their own cultures. The Panchatantra was translated into Persian, Syriac, Arabic, and European languages.

The Panchatantra by Vishnu Sharma is a collection of stories that explain the 'Five Principles of Life'. These principles are illustrated through stories about compassion, friendship, greed, anger and war. Most of the main characters in these stories were animals that would actively communicate with humans. The social structure depicted among the animals was also indicative of the human society. The Panchatantra was said to be fables that were passed on via oral traditions.

The Ramayana has an interesting maritime link in which Lord Rama requests god of the sea, Lord Varuna to allow his Vanara army to build a bridge across Palk Strait to reach Lanka to rescue his wife Sita held captive by Ravana. When Varuna refuses to accede to the request, Rama gets annoyed and attacks the ocean with his powerful weapons. Shaken by Rama's fury, Varuna himself makes an appearance before Rama and reconciles with him. This image is an artist's impression of the interaction between Varuna and Lord Rama, which can also be considered as the battle man wages to overcome the vagaries of the seas, in which man finally prevails.

Diversity Influenced by Maritime Linkages

India's maritime history is replete with tales of how the seas that surround the country have added richly to India's cultural fruition. Culture is often believed to be representative of 'the very soul' of a country. It transcends both natural and man-made boundaries. It provides an insight to the values, etiquette, and heritage that it holds dear, and showcases the essence of a country. India's maritime linkages have been crucial to the many relationships between varied cultures built over centuries. It contributed to, and shaped, the country's cultural identity.

The coasts have received travellers who introduced India to their way of life, cuisine, customs, artefacts, religions, music and art. While India's cultural diversity is heavily influenced by visitors, it has also shared an immensely reciprocal relationship with them. Traders exploring business opportunities went back and recounted numerous tales that established India as an evolved, learned, spiritual, and fertile cultural melting pot. Amaury de Riencourt, the French historian and expert on south-east Asia said of India, "The brightest sun shining over south-east Asia in the first centuries was the Indian civilisation."

The sections that follow attempt to capture, and help the reader understand, how India has embraced diversity since time immemorial; how the people of India have always been a welcoming, tolerant race; and how India's maritime connectivity has blended in aspects of various cultures in art, craft, beliefs, customs, ethnicities, festivities and food. The sea took Indian religions and religious philosophies to foreign shores, and also brought in other faiths and beliefs to Indian shores - different peoples and religions have influenced the rich and diverse cultural tapestry of present day India.

Evolution of and Impact on Religions

Religion in the Indus Valley Civilisation

The people in the Valley worshipped a mother Goddess (a precedent to Goddess Shakti), the Linga, and Pashupati (both representations of Lord Shiva). Yoga, purification baths, charms for deliverance from evil, astrology and cremating the dead were prominent beliefs that largely served as the precursor to Hinduism. Buddhism and Jainism are also believed to have links to the civilisation. However, there have been indications of other religious beliefs during the civilisation as well. A seal excavated from the Mohenjo-daro archaeological site, for example, references a Sumerian mythical monster.

In the Hindu and Buddhist mythologies, Garuda is a large bird like humanoid that is the mount of Lord Vishnu. Garuda is the Hindu name of the constellation Aquila. Garuda is depicted in the religious arts and lore of India, Thailand, Mongolia and Indonesia in different styles. Garuda is also the national symbol of Thailand and appears on the crest of the royal family. Statues and symbols of the Garuda adorn many Buddhist temples around the world.

The Spreading Influence of Hinduism

With an increase in seafaring, it was natural for the ideologies of Hinduism (honesty, patience, compassion, ahimsa, etc.) to find favour and branch out to different lands and cultures. A seal on the Gundestrup cauldron in Denmark - a silver vessel dating back to anywhere between 200 BCE and 300 CE - is remarkably similar to the Pashupati seal found in the Indus Valley. Hindu traders and their seafaring contributed greatly to the spread of the religion. The Celtic cult-like order called Druidism is another unique example, as it is believed to have spiritual and philosophical resonance with Hinduism. The word 'Druid' itself comes from the Sanskrit term meaning 'immersed in knowledge'. Connections established via overseas trade contributed greatly to the spread of Hinduism.

Kurukshetra is a city in the north Indian state of Haryana. The Puranas mention that the region was named after King Kuru, the ancestors of the Kauravas and the Pandavas and that the final battle of the epic Mahabharata was fought here. It was during this battle where the Bhagavad Gita was preached by Lord Krishna to his ace warrior Arjuna unwilling to fight his cousins and relatives. The influence of the Mahabharata epic spread outward from India by sea. The image depicting Kurukshetra is at Bali, Indonesia.

Evolution and Spread of Buddhism

While Buddhism arose around the 6th century BCE in India, it was only around the 5th century CE that it branched out to south-east Asia by sea. Buddhism had already stamped its presence in Sri Lanka by then. Buddhism was introduced to Japan in the 6th century CE. While Hinduism remained predominant in the subcontinent, there were also several flourishing kingdoms that had embraced Buddhism. King Ashoka, after the Kalinga war, for example, not only converted to Buddhism himself but also actively pursued spreading the message of Lord Buddha far and wide. Inscriptions at Kanheri (in Mumbai), and Junnar (in Pune) indicate that kings, traders and wealthy residents generously helped build monasteries.

Islamic Influence Arrives (7th Century CE Onwards)

Islam first made its way to the Indian shores in 630 CE, when ships carrying Arab traders visited India. They began to establish their settlements across the coast between the 8th and 13th century CE. However, the first mosque ever in India was built in 629 CE, predating the arrival of Arabs. It was built under the patronage of the Chera king Cheraman Perumal. The king converted to Islam and authorised Malik Ibn Deenar – a follower of Prophet Mohammed – to build the Cheraman Jumma Masjid in Methala (Thrissur district, Kerala). The Mappilas (Moplahs) from the coast of Malabar were one of the first communities to adopt Islam as their religion in India. The Mappilas comprised both – people of Arab descent who married the locals and also the locals who embraced Islam.

The 'Buddha' is also known as the 'Light of Asia'. The title is most appropriate as Buddhism grew to be one of the most influential religions in present day Asia. Seen in this image is a statue of Buddha that dates back to the 2nd century CE. Obtained from the Gandhara valley (in present day Peshawar, Pakistan), it is now placed at the National Museum in New Delhi. Gandhara and the Swat valley in NW Pakistan remained largely Buddhist lands until the 10th century CE when Islamic influence overcame Buddhist influence.

Influence of Christianity

Saint Thomas – one of the twelve Apostles of Jesus Christ – is believed to have come to India in 52 CE by sea, to spread the message of Christianity. St Thomas is credited to have built two of the world's oldest existing church structures - St Mary's Orthodox Church in Thiruvithamcode, Kanyakumari district of Tamil Nadu and the Mar Thoma Syrian Church at Thiruvalla in Kerala. Both date back to 52 CE. While their religion and faith was Christian, their conduct included several Brahminical traditions including the wearing of the sacred thread and having a tuft of hair at the back of their shaven head.

It wasn't until 1498 CE, when the Portuguese came, that Christianity got a major thrust in India. The King of Kochi allowed Portuguese Catholic priests to do apostolic work in the region and later, Francisco de Almeida – the first viceroy of the Portuguese – was permitted by the king, to build two churches (Santa Cruz Basilica in 1505 CE, and Saint Francis Church in 1506 CE). In the 16th century, Pope John Paul III sanctioned the creation of the archdiocese of Goa in 1534 CE, which gave a boost to missionary activities and religious conversions. The French arrived in the latter half of the 17th century CE, and this further fortified Christianity. British control consolidated the influence of Christianity in India. The Christians of India today practice a combination of western and Indian rituals such as brides draping a saree rather than a white gown and wearing a black coloured bead chain (much like the mangalsutra worn by Hindu brides).

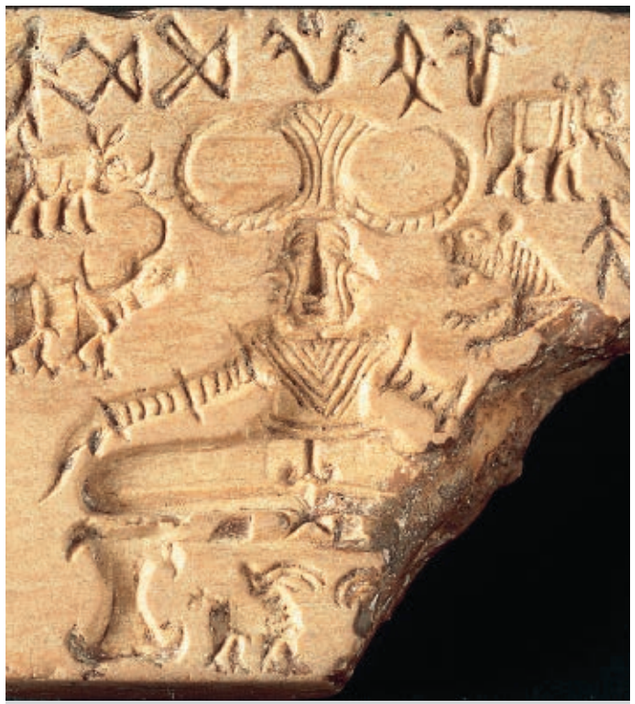
The Mar Thoma Syrian Church in India, is believed to be one of the churches established by St. Thomas the Apostle soon after the death of Jesus. Built in 52 CE, there are considerable debates on which of the two churches, viz. this Mar Thoma Syrian Church seen in the image or the St. Mary's Orthodox Church in Thiruvithamcode, is the oldest surviving church structure in the world. The church is located in the south-west state of Kerala. The history of this church pre-dates the arrival of the Portuguese, French, and British by several centuries.

Built under the patronage of the Chera king Cheraman Perumal, the Cheraman Jumma Masjid, constructed in the year 629 CE, was the first mosque in India. Its construction in the Malabar region of northern Kerala gives an indication of trade ties (which led to religious exchanges) between ancient Arabia and India. While the king died before the completion of the construction, he wrote a number of letters authorising the disciples of Prophet Mohammed to build the mosque.

Journey of Languages by Sea

Languages, one of the most crucial aspects of communication, give humans a sense of connection, are also important for the peripheral aspects of trade and business. Influences, to and fro, of and on languages in peninsular India, were a consequence of maritime travel. Early traders who visited India along the coast, primarily communicated in Sanskrit. Certain words and terms from the language were taken back home by sailors and were included into their own. It is noteworthy that the word 'navigate' was derived from the Sanskrit words Naav (boat) and Gati (speed). Old Javanese is believed to be almost exclusively influenced by Sanskrit. According to Dutch Professor Petrus Josephus Zoetmulder's Javanese dictionary, over 12,000 Javanese words were derived from Sanskrit. Bahasa, the language of Indonesia, too, was heavily influenced by Sanskrit. Languages such as Thai, Lao, Khmer, traditional Malay, Tagalog, etc., contain Sanskrit words. Some Buddhist priests in Japan communicate in Sanskrit even to this day. The maritime trade between the Coromandel coast and Malacca (in Malaysia) was conducted through Tamil. Singapore and Sri Lanka have also listed Tamil among their official languages. Scholars have also explained that Japanese can trace its origins to Tamil. Tamil influence in the names of the Iraqi cities of Ur and Uruk (from ooru in Tamil), the African country Cameroon (from Kama-ooru), Anaconda (from Anai-kondra), and the king of fruit mango (from mangai) is evident.

Kathmandu, the capital city of Nepal, has historically had amiable relations with India. The people share religious commonalities, and also follow a similar cultural and social structure. The oldest dated inscription that can be found in Kathmandu dates back to year 207 of the Saka era which corresponds to 285 CE. Seen in this image, the Sanskrit language inscription is carved in Gupta characters, also known as Brahmi script. This inscription can be found on the pedestal of a statue of King Jayavarman. It was unearthed at a building site in Maligaon in 1992.



PASUPATHI AND DRUID OF DENMARK

Lord Shiva's avatar as the 'Lord of Animals' is referred to as Pashupati. Seen in the image above is a seal of Shiva's Pashupati incarnation, excavated from an archaeological site in the Indus Valley. To the top right, a cauldron found in Denmark can be seen. Named the Gundestrup Cauldron, it has remarkable similarities to the seal found in the Indus Valley. The presence of a deity with antlers, surrounded by a number of animals, in both the places indicates a unique exchange of ancient religious beliefs. There is considerable evidence that the cultures of the subcontinent shared a common origin with the early European and Celtic cultures.

Arabic and Persian Influence on Hindi

The early Arabs and Persians came to India via the sea. Hind (India), Hindi, and Hindu are all traced back to the way Persian and Arabic merchants addressed their Indian counterparts. In the medieval period, Persian was the most prominent language spoken in vast tracts of north India and legally accepted in the royal courts. Persian influence on other north Indian languages was also quite extensive. Blended with Arabic and Sanskrit, it laid the foundation for Hindustani, Urdu and other modern north Indian languages.

India's maritime trade linkage with Persia is of considerable historical significance. The natural progression of relations led to the introduction of currency to bring in more stability, order and equity to Indo-Persian trade. Seen here are ancient coins dating back to the 13th century CE, that were issued by the Islamic Bengal Sultanate. One side of the coin has Persian script, while the reverse is in Bengali. In the realm of spirituality, Sufism resulted from the philosophical interaction between India and Persia.

Migration and Ethnicity

Migration is the process of shifting to a foreign land. While the term is a modern one, the process has existed since time immemorial. Indian people have been warm and have always welcomed migrants since the days of early civilisation. Of course, there have also been several countries that became a 'home away from home' for Indians who ventured via the sea. The next few paragraphs take a look at the different types of people that came to India by sea, the different people who welcomed Indians to their land, and how this movement of people shaped India's diverse and unique cultural identity.

The ocean is an enigmatic manifestation of nature. While the modern era has ushered in technological advancements that are tailor-made to suit any requirements, the ancient era lacked any such option. Despite that, mariners looked upon seafaring as a natural way to satiate their curiosity. This led to stronger ties and eventually, migration. Seen in this image is a painting depicting ancient Indian seafarers setting sail, with the intention to migrate and establish a settlement on foreign shores. India carried out extensive maritime trade with civilisations of the ancient world, in Egypt, in the Mediterranean region, Indonesia and China. The Rig Vedas and other early Vedic texts narrate the skill by which Indian fleets navigated the seas and carried out trade.

'BAAN-STAMBH' (ARROW PILLAR)

This is an image of the unique 'baan-stambh' or arrow-pillar, located on the coast of Gujarat at the famous Somnath Temple. It was so located by ancient Indians that there is no landmass between the arrow-pillar and the South Pole and the direction of the arrow on the pillar points to the direction of the South Pole over the sea with no land in between. The Sanskrit inscription found below the pillar states that "it stands at a point on the Indian landmass which is the first point on land to the north from the South Pole along the particular longitude". This arrow pillar identifying its location as the first point on land to the north of the South Pole is yet another illustration of the knowledge of astronomy, geography, mathematics and indeed maritime sciences, of ancient India and therefore, constitutes an element of our maritime heritage.

Migration to Sri Lanka

Prince Vijaya was an Indian prince who colonised Sri Lanka in 543 BCE. Vijaya was from the Kingdom of Bhurishrestha, a medieval kingdom which is now in West Bengal. He married a local tribal princess and encouraged his army to marry the locals. This led to origins of the Sinhala race. King Vijayabahu, married the Buddhist princess Trilokasundari of the Kalinga kingdom. While it is well known that a large population of Sri Lanka comprises Tamil people, a little known fact is that there are indications that a large number of Sri Lankans are of Bengali lineage.

Indians in South-East Asia

A large number of Indians migrated to several parts of south-east Asia including Malaysia, Indonesia, Mauritius, Singapore, Fiji, Burma (Myanmar), Seychelles, and Thailand. Today, the spread of Hindu temples and people of Indian descent prove that their voyages etched India across the firmament of these countries.

In Hindu and Buddhist mythologies, Apsaras are integral characters in the stories and folklore. The art and culture of today's Cambodia is greatly influenced by the Hindu-Buddhist Khmer dynasty, which originated from India. Cambodia is home to a performing art-form called the Royal Ballet of Cambodia. Seen in this picture is a group of dancers performing the Apsara Mera, a dance inspired by Hindu themes with a western fusion.

Indians in Africa

Trade ties between India and Ethiopia existed as far back as 2nd century CE. A number of Indians had settled there, and a significant number of them were Gujarati Hindus. However, during the British rule over 30,000 Indians were taken to work as labourers on the Kenya-Uganda railway. Apart from some of the traders, over 6,000 labourers stayed back there.

Indo-Caribbeans

The British commissioned a number of ships which transported almost half a million Indians for indentured labour to the Caribbean islands between 1838 and 1917 CE. Most of them were put to work at sugarcane plantations owned by the British. These labourers continued to live in the Caribbean even after the end of their tenure and blended with the Africans who were brought there as slaves.

Colonial rule resulted in a number of Indian workers being taken to other colonies for indentured labour. As a result, the Caribbean has a number of families of Indian (or Indo-Caribbean) descent. These families have been living in the Caribbean islands for several generations, and have been absorbed by the culture and indigenous population. Seen in this picture is an early Indo-Caribbean girl, dressed in traditional Indian attire. They worked on cotton and sugarcane plantations.

The Jews

Jews from Israel, Europe and Iraq are believed to have migrated to India via the Konkan coast. Different theories date their advent back to between the 2nd and the 6th century BCE. The Israeli Jews in India are believed to be from one of the tribes of Israel that escaped a ship-wreck near the Konkan coast. While a large number of Jews migrated back to Israel after the creation of independent Israel, around 5,000 still remain in the country, mainly located in Mumbai.

The Jewish synagogue in Mattancherry is one of the oldest synagogues in the world. It is large, has exceptional decor and allows a lot of natural light inside the halls. The synagogue also houses a number of rare antiquities including copper plates bearing inscriptions in Malayalam, dating back to the 4th century CE. The synagogue was built in 1568 CE, nearly 1,500 years after the arrival of Judaism in India. It is also known as the Paradesi Synagogue and was built on land given to the Malabari Yehuden community by the Raja of Kochi.

The Kodavas of Coorg

There are two theories about the origins of the Kodavas. A large number of Kodavas are believed to be descendants of Greek traders when maritime trade links were established with Greece. They migrated to Coorg for the good weather. However, another view points to a strong possibility that the Kodavas could also be the descendents of Persians or Kurds who arrived by sea.

Arabs and Persians

Around the 8th century CE, Arabs and Persian traders who had settled along the Malabar coast, began to marry the daughters of the locals and became the 'mappilai' (son-in-law) of the locals. Soon this community began to be called Mappila (or Moplah) which remains todate. The Parsis - non-Muslim Persians - reached the Konkan coast around the 8th or 9th century by sea and soon arrived in Mumbai, now their permanent home.

The Kodavas of Coorg are believed to have descended from ancient warriors. Speculations of the community being of either Greek or Persian lineage were kindled when their traditional reverence of natural elements rather than vedic rituals were acknowledged. The Kodavas have their own customs, rites and language - all quite different from the Hindu culture. The Kodavas revere the art of warfare, and weapons such as the sword and dagger, are central to the ceremonial practices and cultural customs.

The Siddi People From Africa

People of African origin who arrived in India as slaves of the Portuguese, and traded with local royalties in the 7th century CE, were called the Siddis. Their physical features and strength got them jobs as soldiers and mercenaries. A few Siddis managed to work their way up to commanding positions in the armies of various kingdoms. The Siddis now live in parts of Gujarat, Karnataka and Hyderabad.

The Siddis who were originally from Africa, came to Indian shores as traders, mariners and mercenaries. Some were also brought to the subcontinent as slaves. They later occupied parts of India and Pakistan. They were well-built, and possessed great physical strength. The Siddis were also known as 'Habshis' or 'Makrani' (a corruption of the term Abyssinian, or 'from Abyssinia or Ethiopia'). Seen in this image is a sketch of an ancient Siddi couple, dressed in Indian clothing.

The Romani Gypsies

India had sent a number of performers from north India to Persia, at the behest of the Persian King Bahram V. These entertainers, called the Romanis, settled down in Persia for years. The Romanis went on to migrate to several countries and can be found in the United States, France, Germany, United Kingdom, Russia, Turkey and many other countries.

Romani Gypsies were entertainers who found favour in the courts of the Persian royalties. They left India around the 5th century CE and travelled to distant lands making performing arts their occupation. Years later, when the term 'gypsy' began to be deemed a racial slur denoting someone 'inconsistent', they preferred to be known only as 'Romanis'. Seen in this image is an artist's rendition of Romanis singing and dancing in front of people of 'distant lands'. The Romanis had an identity - even a flag featuring an Ashoka Chakra similar to the one on the Indian flag, which was accepted and recognised in the year 1933. Due to the nomadic nature of the Romani community, its members are spread across the globe and speak a number of dialects.

French and Portuguese Settlements

The French and Portuguese created settlements in India and, when they left, several families stayed back. Majority of French origin people reside in Puducherry and the rest are scattered across southern India. The Portuguese who chose to stay back in India, are called Luso-Indians or Portu-Goesas. In addition to Goa, they are present in Daman and Diu, Tamil Nadu and Kerala. A small number of Indians also migrated to Portugal from Goa, and other Portuguese colonies, where they were initially taken as labourers, and provided Portuguese citizenship when they chose to settle.

Anglo-Indians and Indians in Britain

A number of Britons married local Indians during their stay, creating the Anglo-Indian community of India. Indian seamen for voyages, scholars and labourers for work in different British colonies in the 18th and 19th centuries CE, were provided with British citizenship when they chose to live in Britain. With the large number of Indian families who migrated to the UK, the Indian diaspora are a prominent group in the UK today.

Located on the Goubert Avenue in Puducherry, the French War Memorial is a tribute to the many French soldiers who died during the first World War. Built in 1971, the memorial sparked-off a debate with people criticising a memorial honouring French soldiers being built in India. Debates and controversies notwithstanding, the memorial adheres completely to French architectural style and is one of the most popular tourist destinations in Puducherry. The memorial attracts maximum onlookers every year on 14 July, the 'Bastille Day', commemorating the historic storming of the Bastille, during the French revolution.

People of mixed British and Indian ancestry are known as 'Anglo-Indians'. The Anglo-Indian community is a small community that is predominantly located in India but is also present in the UK and some other Commonwealth countries around the world. Anglo-Indians have a strong sense of identity. Seen in the picture is a ship disembarking Anglo-Indians and other Indians in a port in Britain after a passage from India. The Anglo-Indian community in India is about 80,000–125,000 strong at present.

Food Across the Oceans

The coasts across the world have interesting and diverse types of cuisines. Maritime expeditions – both to and fro – resulted in exchange of dishes, recipes and foodstuff to and from India's shores. For most coastal people, seafood is a staple part of their diet. However, they also consume fish, sea turtles, algae and seaweed as unconventional medicines. Indian cuisines use a number of herbs and spices, which also help preserve fish and meat longer. Theories about the origins of biryani abound. Some credit it to the Persians with their blend of roasted or fried rice and meat, while others claim it to be a Mughal creation. India's own pulao or pilaf is claimed to be a biryani. The Moplah biryani of Malabar, with Arab flavours, is another delicacy. The British have adopted 'Curry', a term that comes from Tamil meaning 'gravy'. Chillies, tomatoes, cauliflowers, ladies fingers, potatoes; fruits like papaya, pineapple and cashew; refined sugar - all these came to India courtesy the Portuguese.

Art, Sculpture and Paintings

Art reflects creativity and portrait of an era gone while setting expectations for the time ahead. Art forms were originally thought to be gods 'creations and gifts to the people', but archaeologists, like John Marshall, conclude from the figurines recovered from the ruins of Mohenjo-daro that Indians were artistically oriented even in that era.

Through the ages from the time when Buddhism began to grow to the medieval times, and from the Greco-Roman era, through the Islamic and Christian periods till the modern era, sculptures have helped establish legacy. And sculptures have largely travelled by sea to distant lands.

Art and Linkages with South-East Asia

While Buddhist art usually depicts scenes from Jataka tales, Buddhist paintings also depict maritime trade elements. Buddhist sculptures are found in India, China, Sri Lanka, Thailand, Japan and other countries where Buddhism spread.

The entire coastal belt of India is fertile and being visited by monsoons twice a year results in rich agricultural harvests. Rice and varieties of dal are the staple food of the coastal regions. However, each part of the east and west coast has special cuisines which have been influenced by sailors and merchants arriving from different parts of the Indian Ocean region. The biryani, as seen in the image, is one such dish that has a different variant every 100 kms. The Arabs brought their variant to India in the Malabar coastal region while the coastal belt of Andhra on the east coast has its own special variant. Different variants of seafood also emerged based on the availability and usage of specific spices that were found in the immediate hinterland. Some varieties of seafood emerged from the need to preserve food when sailors took to sea. The intermingling of external influences and hinterland harvests produced the culinary delights of coastal India.

Most examples of ancient Indian paintings can be found mainly in caves. A cave painting found in Madhya Pradesh dates back to almost 3,000 BCE. Unfortunately, most of such cave paintings have been lost due to moisture and erosion through time. Seen in this image is a painting in the Ajanta caves. It depicts prince Vijaya arriving in Sri Lanka with his army.

The islands of Java, Bali and Sumatra remain hubs for development of Buddhist art as hitherto. The Ayutthaya temple in Thailand is named after Ayodhya, the Shiva temple of Prambanan in Central Java is the largest Hindu temple in Indonesia, the Pura Besakih Temple near Bali Island and the Batu Caves of Kuala Lumpur establish the influence of seafaring Indians in south-east Asia. All these exchanges of art and influence on sculpture occurred through the medium of the sea and will remain essential elements of the maritime heritage of the involved nations.

The Avalokiteshvara avatar of the Buddha is the most revered of the Bodhisattvas. He is venerated for his resolve to help deliver every living being from spiritual suffering. His name is derived from his ability to 'look in every direction'. Seen in this image is a mural depicting the Avalokiteshvara encircled within vivid circles, being worshipped by various living beings and spiritual entities.

Greco-Roman Art

Trade linkages led to evolution of art forms in both cultures. These art forms were often Hellenistic in composition. Indian art reflected features that the Greco-Roman artisans displayed, while the Greeks and Romans modified their art to resonate cultural influences from India. Some Greco-Roman artefacts have the people of India as subjects, but donning Greek or Roman costumes, rather than Indian attire.

Islamic Art

The huge field of Islamic art and architecture is the subject of a separate article, leaving fields as varied as calligraphy, painting, glass, pottery, and textiles, among others. Islamic art has very notable achievements in ceramics, both in pottery and tiles for walls. Indian miniature painting was prominent, but began to wane around 1000 CE. Islamic miniature painting infused life into the art form. Indians were introduced to the Islamic style through the Persians, Arabs and the Mughals. Persian art styles continue to remain evident in the art of the Deccan.

The Persians of the Bahmani kingdoms in south India were more open to western influences in their art. Their sculptures and designs incorporated design elements that they saw in art forms that western traders brought to India.

Gandhara was an expansive kingdom of ancient India in the present day location of Peshawar in Pakistan. It was an Indo-European (Aryan) kingdom that existed between 1500-500 BCE. The existence of Greco-Buddhist Gandhara art was discovered to have existed between 75-50 BCE in the Gandhara region. Seen in the photograph is a sculpture depicting a standing Bodhisattva. The attire as seen worn by the figurine in the statue, which is presently located at the Guimet Museum in France, suggests that the sculpture is of the Bodhisattva in his Gautama or Avalokiteshvara avatar.

The Taj Mahal, the crowning jewel of Indo-Islamic architecture. It is one of the world's most beautiful and beloved structures. The monument was built in Agra, India. Construction of the tomb began in 1632 CE and employed more than 20,000 labourers for 20 years. This white marble monument was erected during the reign of Shah Jahan. The embellishment and decorations showcase the quality of the craftsmanship of that era and below is the photo of the Taj in its grandeur.

Art in Colonial Period

Art that evolved during the days of the Raj (British era) are called Company style paintings or Kampani Kalam. These were intrinsically Indian subjects but used the European sense of balance and colour. Coinciding with this period, the influence of French and Dutch art on Indian art and architecture was evident, albeit at a smaller level compared to the influence of the Portuguese and British. Christian art in India developed mainly due to Portuguese influences. They brought in ornate and grand pieces of Christian art to Goa and placed them in churches. The Museum of Christian Art, constructed in 1994 at Santa Monica, Goa has a number of relics and pieces of art from those days. However, the Portuguese also destroyed many Indian relics. The Elephanta Caves, situated close to Mumbai harbour, housed ancient Hindu sculptures. When the Portuguese took control of the island, they used the statues for target practice and also removed inscriptions and other relics from the caves. Due to water logging, the caves later fell in ruins. However, UNESCO stepped in to aid its preservation, after declaring it a heritage site.

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They were probably designed to be worn as earrings. Sculpted and detailed via the repousse and chasing technique, they were technically and stylistically similar. The gold-work and craftsmanship is evidence that ancient Filipinos were familiar with the conventions of India and Indian motifs.

Festivals and Customs

Festivals and customs are integral elements of any community. The sea has played an important part in the festivities and celebrations of the coastal communities. This section takes a look at how the reverence and allegiance to the sea influenced the festivities and customs of the people living along the coasts and those travelling overseas.

All major communities, Hindus and Muslims included, believed in a patron saint of the seas and paying obeisance to him before starting a voyage was mandatory. Certain parallels were drawn between Muslim patron Khizer and Hindu deity Varuna and coastal communities in India believe that they are both the same, only known and revered differently. The Indian Navy also follows the traditional ritual when crossing the Equator albeit a variant of that followed by many other navies.

Whenever an Indian Naval ship crosses the Equator, officers and sailors onboard, who have never crossed the Equator ever before, participate in this ritual where one of the sailors acts as Lord Varuna, the deity of the seas and the rest, as members of his royal court. This ritual, traditionally, sees officers more often being at the receiving end of 'punishments' meted out by the sailor playing Lord Varuna. But, these are fun, celebratory events and not 'punishments'. The ritual serves as an ode to Varuna and provides platform to enhance camaraderie within the units and among the crew.

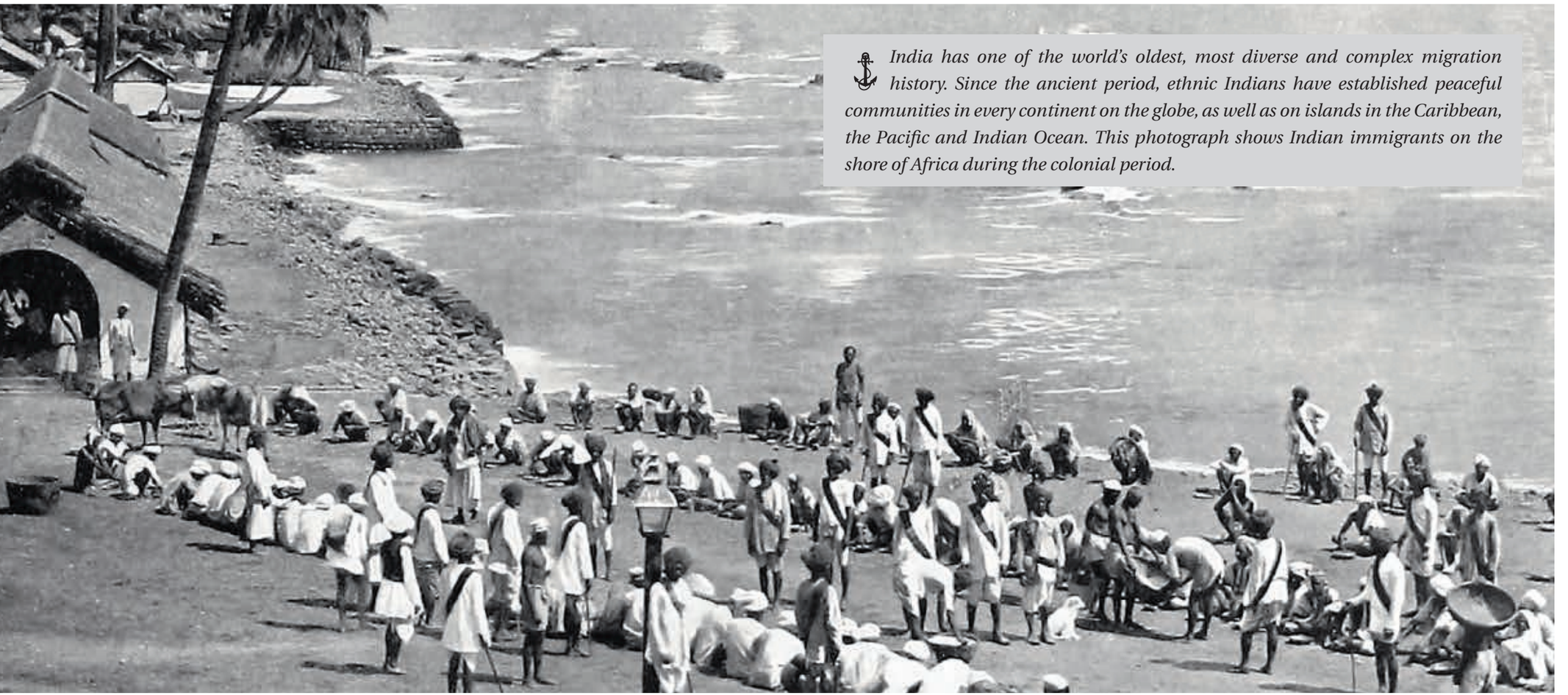
Thaipoosam is a Hindu festival celebrated by the Tamil community. The festival is observed on the full moon day in the Tamil month of Thai (January/February). The festival as seen in the image is celebrated in India, and in countries that have an indigenous Tamil community like Sri Lanka, Malaysia, Mauritius, Singapore, South Africa, Guadalupe, Reunion, Indonesia, Thailand and Myanmar.

The Maritime Influence

The evolution of peninsular India's traditions has been extensively influenced and inspired by the seas. India has been gifted with experiences – both positive and negative – that have gone on to strengthen the foundations of the country's modern cultural ethos. The seas have enhanced the lives of the people by being a source of food, money and

culture. Be it traders seeing ships off with merchandise or welcoming ships with merchants onboard, explorers landing ashore to experience the land and its people or rulers and armies arriving off the coasts intent to conquer, India has experienced it all. And the seas around India have played their part in each of these areas. The most outstanding aspect of Indian culture is that it is so diverse; that each coast is different and unique. While people may look similar, food, art, architecture, music, language – all are different. It's not easy for any casual visitor to fully comprehend the enormity and intricacies of a culture that is diverse, has been influenced by several eras, civilisations, kingdoms, cultures and people.

The different cultural strains encountered in India testify to the ancient ethos and traditions of the people that welcomed all visitors as guests and the whole world as 'one large community'. It is historically evident that India never looked at the oceans as means to conquer, but only as an extension of nature that needed to be worshipped and embraced. Across religions, beliefs, languages, ethnicities and lifestyle, Indian culture grew richer with the internal metamorphosis and external influences. India's cultural evolution is majorly responsible for the nation it is today. And that cultural evolution has maintained close links to the country's glorious maritime heritage.



India has one of the world's oldest, most diverse and complex migration history. Since the ancient period, ethnic Indians have established peaceful communities in every continent on the globe, as well as on islands in the Caribbean, the Pacific and Indian Ocean. This photograph shows Indian immigrants on the shore of Africa during the colonial period.

IV - IMMORTAL STRUCTURES

Indian Architecture through the Maritime Lens

Elements and Evolution of Architecture

Civilisations have always been defined by architecture. More than any other historical evidence, architecture prevails over the vagaries of time and bears the weight of centuries in stone and brick. Johann Wolfgang von Goethe (1749-1832), a German writer of eminence, described architecture as ''frozen music'', that exists at the junction of engineering and art. This chapter covers the elements that moved to foreign countries and also that finally coalesced into Indian architecture. In the words of historian Daigoro Chihara, "Architecture has a strongly spiritual aspect, directly linked to the instinctive sense of beauty. Hence, there would always be a strong link between architecture and religion." Chronicles will reveal that India's history and cultural influences are enmeshed with the evolution of religions, more than most other civilisations. A study of India's cultural influence on architecture, through maritime links, especially in neighbouring countries, gains its most solid footing in religious structures - temples, stupas and mosques. Through them, the process of arrival and amalgamation of various human, material and spiritual elements becomes clear.

The Sanchi stupa in Madhya Pradesh is India's oldest stone structure. It was commissioned by Emperor Ashoka in the 3rd century BCE. At the centre of the stupa is a brick structure built over the Buddha's relics. The stupa is crowned by a chatra which is an umbrella-like form symbolising high rank and honor. An ornamental gateway and a stone balustrade encircling the stupa can be seen alongside the monument.

Function Over Form – Maritime Architecture of the Indus Valley

In 1954, archaeologists excavated the ruins of what is possibly the world's earliest known tidal dock at Lothal in Gujarat, located between the Sabarmati River and its tributary, the Bhogavo, in Saurashtra. Artefacts discovered at the site show indications of vibrant maritime activity. While the sea has receded now by about 16-19 km, during the time of the Indus Valley, boats from the Gulf of Cambay sailed right up to and docked at Lothal. The central feature of the port city of Lothal is the dockyard, which lies on the eastern side of the site. It has a large artificial basin shaped in the form of a trapezoid and measures approximately 212 x 35 metres, lined with walls of kiln-baked bricks and with a maximum draught of 3.5 metres. The dockyard possessed a sluice gate that could be lowered at the mouth of the outlet to allow for dewatering at high tide via a spill channel and also ensure floatation of the docked vessel at low tides. Also discovered in the vicinity were warehouses and a large mud-brick platform that could have been a brick wharf for hauling cargo.

Similarly, another bustling port city of Dholavira, of protohistoric times, was located at the Khadir Island on the Rann of Kutch. The site commanded a view of the sea and the city, most probably, served as an important stop-over point on a busy maritime trade route. Dholavira had a sophisticated urban layout unlike any other Harappan city. Within the outer walls, at least three different sections were identified. There was a small castle area, a bailey area to the west and a larger middle town to the north, all with their own enclosing walls. A large ceremonial stadium, or ground, formed the link between the middle town and the citadel. The fortified citadel covered an area of 300 x 300 metres with gateways in the centre of its four walls. Remains of lime stone pillar bases and pillar fragments with highly polished surface were found in the eastern gateway. This discovery shifted the earliest known example of a monumental stone architecture from the Mauryan age of the 4th century BCE to the 3rd century BCE. The Indus Valley started to decline, and the cities began to be abandoned around 1800 BCE for reasons that remain a mystery. With the rise in trade and spread of Indian culture, India's links with other countries gained prominence at this stage of the story of India's architectural maritime heritage.

Influence of South-East Asia

For more than eight centuries, India's major export was its culture, and its influence spread outwards to the east encompassing all kingdoms in its path, peacefully spreading, what historian Michael Woods called 'An Empire of Spirit'.

Angkor Wat in Cambodia was built in the 12th century CE by the king of the Khmer Empire, Suryavarman II. It was a temple dedicated to Lord Vishnu and evoked Mount Meru, the home of the Hindu gods. By the turn of the same century, it transformed into a Buddhist centre of worship. The temple is widely accepted as a masterpiece of Khmer architecture.

Sri Lanka

The country of Sri Lanka, formerly Ceylon, has a history that is inextricable from India's own past. According to the Mahavamsa, a Pali text, the ancestors of the Sinhalese sailed to the island from, what is now the Rarh region of West Bengal, around 543 BCE. Buddhism came to the island through a son of Emperor Ashoka about two and a half centuries later. Ever since, Buddhist architecture took hold of this island and is reflected in all their structures. Some of the largest stupas of the ancient world were built in Sri Lanka. One such structure is the Jetavanaramaya, which was considered to be the third tallest building in the world during that era. On the west coast of Sri Lanka, the Munneswaram Temple complex is an interesting example of co-existing cultures. There are five temples in the complex – four of them belong to Hindu deities (Shiva, Ganesh, Ayyanayake, and Kali), and one is dedicated to the Buddhist culture. Even today, Buddhism is the most widely practised religion in Sri Lanka and most of these great temples still receive thousands of devotees and function as places of worship.

Jetavanaramaya stupa in Sri Lanka was constructed by Mahasena of Anuradhapura in 273 CE. A piece of Buddha's sash is said to be enshrined in the stupa which was recorded to be the tallest structure in the ancient world. 93.3 million baked bricks were used to construct this tremendous place of meditation. Crushed dolomite lime stone, sand and clay were the bonding material for the bricks which formed the walls of this hemispherical Buddhist mound. It is said that the construction took 15 years to complete. Jetavanaramaya stupa is said to have housed 10,000 Buddhist monks. Stone inscriptions in the courtyard give the names of people who donated to the building effort. Jetavanaramaya stupa is a monument of worship and in scale of area, counts among the largest religious centres of the ancient period.

Cambodia

The roots of the current Cambodian state lie in the kingdoms of Funan and Chenla that were founded by kings of Indian origin. The passage of cultural influence through to Laos, southern Vietnam and Thailand was funnelled through these ancient Hindu-Khmer kingdoms. Angkor Wat comes from a combination of the Khmer words for 'city' or 'capital city' and 'temple grounds'. It is a vast temple complex in Cambodia covering an area of nearly 200 hectares built in the 12th century CE by King Suryavarman II. Originally consecrated to Vishnu, it was later converted into a Buddhist temple and is patronised by worshippers to this day. The structures feature a tiered-pyramid form called a temple mountain that represents Mount Meru, the home of the gods. This feature evolved from the step pyramids of the ratha style of architecture from the time of the Pallava dynasty, and similar structures can be found dotting the coastline of Mahabalipuram. Angkor Wat also contained passageways that ran along the walls and axis of the temple and the entire temple is built on a raised terrace, like the jagatis of Indian temples. The floor plan and layout are also an adaptation of ground plans of Hindu temples in Odisha. The temple complex is home to the largest bas-relief in the world, depicting the Samudra Manthan or the 'Churning of the Ocean', a tale from Hindu mythology. A bas-relief or low-relief is essentially a sculpture where the image has a shallow depth and does not project sharply. Mythical serpents or nagas are a common motif in both Khmer and Indian architecture. In the Angkor Wat, the main causeway that runs for 350 metres, is lined by stone balustrades of nagas.

Angkor Wat is a temple complex in Cambodia and is one of the largest temple complexes in the world. It was constructed by Khmer King Suryavarman II as the state Hindu temple, and was later used as a Buddhist mausoleum towards the end of the 12th century. Angkor Wat is a complex of monoliths that represent the Khmer style of architecture. Most of the main areas have been constructed with sandstone, while the outer wall is carved from laterite. Angkor Wat is a heritage site and a symbol of national pride in Cambodia, and features on the country's flag.

Malaysia

Currently a predominantly Islamic nation, Malaysia in the past was influenced by India's cultural and religious outreach. During the 5th century CE, traders travelling between China and India used the east-west trade route and would stop at Tanjung Dawai as an ideal resting point while waiting for the winds to change. They utilised the time to spread their religious and cultural beliefs when they settled down for trade. As Sir Richard Winstedt puts it, "the coming of the Indians was neither sudden nor violent." The ancient Indians left their mark on places like Lembah Bujang and Kedah in the form of tombs and temples. At the first look, it appears to be the Pallavas but the major lasting influence was the Pala dynasty of Bengal. Winstedt adds, "all the Pala images of Malaya appear to be purely Indian in type with no Sumatran or Javanese characteristics." This, he claims, is ample evidence that Malaya was India's stepping stone to the archipelago, and had the earliest Indian settlements.

Lembah Bujang or Bujang Valley is a sprawling historical complex that has given birth to the largest archaeological site in Malaysia. According to the Malaysian government's research, some of the ruins seem to be two thousand years old and there is evidence of a Hindu-Buddhist kingdom here as far back as the 2nd century CE, similar to the ones in western Indonesia.

The main temple located in the complex is called the Candi Bukit Batu Pahat. It was at least partially consecrated to Shiva. The structure itself is believed to have been built of granite and wood and has 66 round bases where the wooden poles used to be. In 1960, the temple ruins were reconstructed at its original location. The city of Malacca was the Singapore of its day and was a vital entrepôt (trading post) between India and China. Through these routes, Indian cultural influences reached far off coasts. William Dalrymple states that in Quanzhou - China's greatest seaport, facing the Taiwan Strait, Chinese sculptors had created statues modelled around the work of Indian artists of the Gupta Empire of the 4th and 5th centuries CE.

Batu Caves in Malaysia are a series of ancient cave temples carved along a limestone hill. The name is taken from the Batu River, which flows past the hills it is built in to. The main deity of the cave temples is Murugan and it is a venerated Hindu place of worship outside India. Thaipusam is the main festival celebrated by the temples in these caves. The limestone caves are said to be more than 400 million years old. The Batu caves came into prominence after Thamboosamy Pillai dedicated a temple to Murugan located within the caves.

Indonesia

As in Malaysia, Islam is the prevalent religion in Indonesia today but it had seen periods of Hindu, Buddhist and even Christian predominance at various stages of its history. Historians believe that the golden age of Hindu-Buddhist architecture in south-east Asia blossomed in central Java. Borobudur, or Barabudur, located in Java, is the world's largest Buddhist temple. It was built in the 9th century CE and is composed of 55,000 sq m of lava rock in the form of a lotus, a motif of religious significance to both Hindus as well as Buddhists. With the decline in power of the Hindu kingdoms, the temple was abandoned until it was rediscovered in the 19th century CE. To quote Daigoro Chihara, "the architectural sculpture deriving from the Gupta art of Sarnath in India has been elevated to the realms of pious faith." Other examples of Indian influence in temple architecture can be found in Candi, or temples in Dieng and Prambanan. The Dieng Plateau is home to the oldest surviving religious structures in Indonesia. Not much is known about their construction, but the influence of Pallava architecture is unmistakeable. William Dalrymple mentions, "four hundred years later, large-scale sculptures in the Pallava style were still being produced on the Malay Peninsula." The local names for the Dieng temples seem to be taken from the Java shadow puppet theatre or wayang versions of the Mahabharata. The Candi Prambanan is dedicated to the 'tirumurti' or triple expression of God as Brahma, Vishnu and Shiva. It might have been constructed by the Sanjaya dynasty, to compete with the Sailendra dynasty which constructed the Buddhist Borobudur and Sewa temples nearby. This huge temple premise resembles the composition of the temple remains in Paharpur in the former territory of east Bengal. Even the mosques that were built during the Sultanate rule of Indonesia are a cultural blend of traditional Hindu-Buddhist features like the tiered roof as against the typical domes of Arabic mosques. These mosques are excellent examples of how new religions adopt facets of pre-existing ones, so as to remove the sense of alienation and provide continuity to its followers. Examples of this include the Demak Great Mosque and the Menara Kudus Mosque that were built in the 14th and 15th century CE.

The temple in this picture is Borobudur, a Mahayana Buddhist temple in Indonesia. Built by the Sailendra dynasty in the 9th century CE, it blends Javanese Buddhist architecture and Indian Gupta architecture. Following its discovery, the stone monument is now a place of pilgrimage for Buddhists from around the world. A pilgrim's journey begins at the base of the structure and slowly ascends to the top most level, winding through a complicated system of stairs, corridors and balustrades. There is no written record of who built this vast temple, but it was mysteriously abandoned and had been forgotten. Buried under volcanic ash and jungle, it was rediscovered by General Thomas Stamford Raffles in 1814 CE.

The Influence of Europe

With the fall of the Cholas, the Indian maritime influence ceased almost completely. It was not until the Europeans began to settle on Indian soil that the sea began to influence the architectural landscape again.

Fort St. George in Chennai was the first British fortress in India. It was built in 1644 CE and gave security and motivation for foreign merchants to increase the scale of their settlement and trading within the region. Soon after the British arrived in India in 1600 CE, they made Surat their main station. It later dawned on them that, in order to establish themself in the spice trade, they needed to be closer to the Malacca Strait. They acquired a piece of coastal strip in the Channapatnam area from a Vijaynagar chieftain and constructed their first fort in India there. In recent years, Fort St. George is administered by the Department of Defence. The flag staff at Fort St. George was one of the highest when it was constructed to be 150 feet high and made of teakwood.

Portuguese

The Portuguese landed in Goa in the 15th century CE with the intention of religious propagation and trade in spices. To propogate their religion, prosperity and power, they constructed a number of ornate churches starting with the St. Francis Church in Kochi in 1510 CE, possibly the first church built by the Europeans in India. They then built churches in the Goa region such as the Church of St. Francis of Assisi, the Basilica of Bom Jesus and the Se Cathedral de Sante Caterina. Se Cathedral, which still exists at the centre of the Old Goa city, is the largest structure built during the Portuguese period. The construction of the church began in 1562 CE, and continued till 1652 CE when the altars were completed. The architecture is an amalgamation of Portuguese-Gothic themes with a Tuscan exterior and Corinthian interior. The altar and chapels were exquisitely crafted and gilded. It had two bell towers on either side of the front façade but the northern tower, sadly, collapsed in 1776 CE. Basilica de Bom Jesus was constructed by the Jesuits and was completed in 1585 CE. The three storied front façade has Ionic, Doric and Corinthian orders with Corinthian columns flanking the main entrances. The influence of the churches and the general Portuguese style has led to a distinct style of Goan Catholic houses that are being followed even in the modern era. They changed from being inward looking to more effusive and ornamental with large verandahs bordered by columns. Large windows would open out onto these verandahs which became essential spaces for the house. The height of plinth and grandeur of the staircase usually signified the status of the land owner.

St. Francis of Assisi Church in Goa is a Christian shrine in India. Constructed by the Portuguese around 1517 CE, the original church and the attached convent were built by eight Franciscan friars during the Portuguese Viceroyalty of India. The eight Franciscan friars had set up a chapel, three altars and a choir, as the humble beginings of this church. The present church was built in the same spot in 1661 CE. The exterior façade was designed in Tuscan style. The main entrance on the exterior of the church is decorated with circular pilasters and a rosette band. The interior of the church has large statues of St. Francis of Assisi and Jesus on the cross, below which are seen statues of St. Peter and St. Paul. The adjoining walls of the church retain painted panels that depict the life and journey of St. Francis of Assisi.

Dutch Architecture

While the Dutch were not a major force in the history of European powers in India, they did have a few noteworthy settlements. In Bengal, along the Hooghly River, they had a base at Chinsurah. This site has recently been the subject of a revitalisation attempt by the Dutch along with Presidency University, Kolkata. Not much of the structure remains, as the British destroyed most of the Dutch constructions when they took control of the town. A few buildings like the church and barracks built by the Dutch still exist, but, were repurposed. There are also Dutch cemeteries in Surat, Pulicat and Kochi. In Surat, the cemetery is located in the area known as 'Gulam Falia' in the premises of the famous Dutch Garden. The tomb of Baron Adriaan van Reede is the most important monument of the cemetery. He was the Commissioner for India of the United Netherlands East

India Company. The mausoleum is deeply influenced by Indo-Saracenic (Gothic) architecture, with a blend of Baroque architecture. The tomb consists of a double cupola of immense dimensions with a gallery above and below, supported by attractive columns. The Dutch cemetery in Kochi was built in 1724 CE, and there are about 104 tombs in the cemetery, many of which are made of granite and red laterite, with no crosses. The architecture in these cemeteries reveal the entire gamut of styles across a large number of tombs, headstones and mausoleums. Kochi is also the location of two palaces: the Dutch palace in Mattanchery, and the Bolgatty palace on Bolgatty Island. The Dutch palace in Mattanchery was originally built by the Portuguese but expanded by the Dutch. The upper rooms are adorned with exquisite Kerala murals of Hindu myths and temple art and now house a museum celebrating the history of the Kochi kings. The Bolgatty Palace used to house the Commander of the Dutch in the Malabar area. It later became the seat of British power in Kochi and is now being operated as a heritage hotel by the Kerala Tourism Department. Pulicat was a major settlement of the Dutch and was one of the largest ports on the east coast in the 17th century CE. The fort is in ruins; the Dutch church and the cemetery are the only remnants of Pulicat's prosperous maritime heritage.

Bolgatty Palace on the Bolgatty Island in Kochi, Kerala is a heritage site built by the Dutch in India in 1744 CE. This quaint mansion served as the governor's palace for the Commander of Dutch Malabar, and is one of the oldest existing Dutch palaces outside Holland. It was later extended to make space for lush gardens, which were landscaped around it. The Dutch leased it to the British and it became the seat of British resident power in Kochi. It also served as a home for British governors during the British Raj. After 1947, the palace became the property of the state and was transformed into a heritage hotel and holiday destination for Indian and overseas tourists.

French Architecture

The French were the slowest of the major European powers to establish permanent bases in India. Their marks on the Indian landscape remain through the towns of Puducherry and Mahe. Puducherry was a planned urban space in the gridlock system with each street meeting only at right angles.

There are distinct zones in the town – the French Quarter (Ville Blance) and the Indian Quarter (Ville Noire). This White Town / Black Town dichotomy is a typical feature of colonial towns of this period across the world. Originally, the native Tamil town developed around the nucleus of a group of temples in the northern section. The streets were laid along the east-west axis, onto which the back-to-back rows of houses opened. These streetscapes with continuous wall-to-wall construction are very different in character from the French streetscapes. Their exterior façades mainly feature a thalvaram (street verandah with a lean-to roof over wooden posts), which acts as a social extension of the house providing shelter for pedestrians - and a thinnai (semi-public verandah space) with masonry benches for visitors and pilgrims. These 'talking-streets', so called because of their intimate scale and interactive nature, are typical of vernacular Tamil architecture, and the entire street stretch is homogeneous because of the connecting elements. All houses are similar, but never exactly the same. The thinnai marks the sensitive transition space, after which the house is entered through a finely carved wooden door. Once inside, the mutram (a colonnaded courtyard) becomes the central family space around which the various other spaces are functionally arranged. Some houses have several courtyards. The French Quarter developed around the beach and around the present Bharathi Park, which is surrounded by stately government buildings. The residential street façades are usually characterised by continuous wall-to-wall

Eglise de Notre Dame Des Anges Church (The Church of Our Lady of Angels) in Puducherry is a Christian holy place built by the French. Its architecture was modelled mirroring the Basilica at Lourdes in the south of France. The façade stands out for its amazing masonry; limestone and egg-white was blended to create the texture of marble. At the entrance of the church is a statue of the Virgin Mary holding the infant Jesus.

construction with high garden walls and elaborate gateways. A major change from the original French model is the use of flat terraced roofs instead of the pitched roofs of the Parisian villas. The walled gardens form private interior courts onto which the rest of the building spaces open. The interiors of the houses are usually more ornate than the exterior. High ceilings, tall arched doors and windows define the rooms.

The Rashtrapati Bhavan in New Delhi is the official residence of the President of India. It was built between 1911 – 1929 CE, when the country's capital shifted from Kolkata to Delhi. Edwin Lutyens, a British architect, was given the charge to build a palace for the then Viceroy of India. The President's Estate includes Mughal gardens, stables and offices, and is spread across 130 hectares of land. The Rashtrapati Bhavan was formerly known as the Viceroy's House. The architectural style is Edwardian Baroque with emphasis on Indo-Saracenic motifs.

The British

The first thing that the British built in their settlements were the defences in the form of walls, forts and towers. According to writer and historian Partha Mitter, the next two public-building enterprises that were of importance were: the church which ministered to the spiritual needs of the European and Eurasian population, and the hospital which catered to their physical needs. The churches were typically tall with thrusting spires.

British Architecture in Kolkata

Calcutta was founded by the East India Trading Company in 1690 CE, long before the company became a political force. With this transformation, an ideological change occurred. Partha Mitter explains, "it was an attempt to transplant European cities on alien Asian soil." During the early years of the British Raj, the buildings were designed by military engineers who had never studied architecture. As writer Dr. Sengupta puts it, "when called upon to design a building of a particular style, they consulted the available published materials on the subject and produced one as best as they could." As they converted the town from a trading post to a proud imperial city, they settled upon the high classical architecture of Greece and Rome to impress the people.

The Metcalfe Hall was based on the Tower of Winds in Athens. Similarly, the Silver Mint has a central portico like the Temple of Minerva in Athens. One of the most interesting and successful architects of this period was Walter L. B. Granville. Granville was a consulting architect with the Government of India, with the express purpose of designing important buildings in Kolkata. From 1864 to 1868 CE, he built the General Post Office that Philip Davies describes, in his book Splendours of the Raj: British Architecture in India, 1160-1947, as, "a noble, even stately structure of considerable sophistication dominated by a corner dome and punctuated by huge rusticated pylons which are linked by Corinthian colonnades." He judges it to be,

The Victoria Memorial in Kolkata was built between 1906 CE and 1921 CE. It is a large marble building dedicated to the memory of Queen Victoria, constructed on the banks of the River Hooghly. It was commissioned by Viceroy Curzon and the foundation stone was laid by King George V on his visit to India. The architect of this grand memorial was William Emerson, who designed it in the Indo-Saracenic revivalist style. The monument's style of architecture features British and Mughal elements built using white makrana marble. The construction of the Victoria Memorial was funded by many Indian states, individuals of the British Raj and the British government in London. It is now a museum and has several galleries for imperial and contemporary paintings and sculptures.

"Granville's best classical composition," noting also that the main hall, raised higher than the rest of the building, "provides a grand setting for the tide of humanity that ebbs and flows beneath the dome." The High Court was also built by Granville in 1872 CE. With this, Granville attempted a more Gothic style based on the Hamburg Rathaus which itself was based on the Cloth Hall in Ypres (Belgium).

In fact when the latter was destroyed in World War I, the Mayor of Ypres asked for the plans of Kolkata High Court to help reconstruct it. The court has red brick facing with stucco dressings, above what Davies describes as an "elegant vaulted cloister of Barakur sandstone with capitals of Caen stone." He goes on to state that it is "the only significant secular Gothic building in the city", since Granville switched back to his more neoclassical style immediately after which he designed the Indian Museum. Granville's beautiful Museum stands in what was once the very heart of 'the City of Palaces.' The Geological Survey of India building had already been constructed here, as had the Government College of Art & Craft, and others. The area could perhaps be compared to London's museum area in Kensington. It was completed in 1814 CE, and for a long time, the museum was not only the oldest such construction in Asia, but also the largest (it still is) in India. It is a graceful and elegant building that captures all that is beautiful about the classical style of architecture. This style was certainly not common in India, with other cities (especially Mumbai) adopting the recently fashionable Gothic style.

The Indian Museum in Kolkata is the oldest and largest museum in India. It was founded in 1814 CE by the Asiatic Society of Bengal, and is governed by the Indian Ministry of Culture. It has the distinction of being one of the oldest museums in the world, and is encircled in a resplendent British mansion in the centre of the city. The museum exhibits, amongst other ancient artifacts, an Egyptian mummy, a Buddhist stupa from Bharhut, and the Buddha's ashes.

British Architecture in Mumbai

The architecture of Mumbai (Bombay) blends Gothic, Victorian, Art Deco, Indo-Saracenic and contemporary architectural styles. Many buildings, structures and historical monuments remain from the colonial era. Mumbai, after Miami, has the second largest number of Art Deco buildings in the world. Art Deco in Mumbai developed during the 1930's, and produced distinctly angular shaped buildings with facades. The Art Deco style is also extremely popular amongst various cinema halls that sprung up in the early to mid-20th century, including Metro Cinema, Eros Cinema, Liberty Cinema and Regal Cinema. Mumbai had a lot of early Portuguese architecture in the form of churches and a few forts, but the major defining aesthetics of the city came through the British. In the words of British writer and architectural historian Gavin Stamp, the Victorian Gothic Revival, "that great crusade to make all buildings Gothic" came to India in 1860 CE. He claims it to be the finest Gothic revival city in the world, with a remarkable concentration of Gothic public buildings like the Mumbai Secretariat, Public Works Secretariat and the Law Court. In between the Secretariat and the Law Court is the University erected by the Mumbai Sappers based on a design from England. The University Library with its colossal Rajabai Clock Tower - a version of Italian architect Giotto's complete design for the campanile in Florence - is rich in all the features like verandahs and open spiral staircases which Gothic Revivalists loved, but were not very suitable in wet, cold England. The Town Hall is one of the most majestic colonial structures among other heritage buildings in Mumbai and was built in 1833 CE. This building was designed by Colonel Thomas Cowper who was one of the best engineers in Mumbai. This building represented one of the last architectural remnants of the Victorian Mumbai. The Town Hall was colloquially called the 'Tondal' during the 19th century CE, and it houses the 'Asiatic Society of Mumbai', a public state library. Architects like Frederick William Stevens continued designing and constructing buildings long after it had fallen out of fashion in the west. His masterpiece was the most famous Victorian building in India – the Victoria Terminus. The station, which is now called the Chhatrapati Shivaji Terminus, is a UNESCO World Heritage site. The station also boasts of elements from traditional Indian architecture, especially the turrets and pointed

arches. A lot of the ornament working in iron and brass were the work of local artisans and art students. Stevens' obituary when he died stated that his blend of Gothic and Indo-Saracenic had "created a style of architecture so excellently adapted to the climate and environment of Mumbai."

British Architecture in Chennai

In terms of adapting the European styles to the Indian context, the city of Chennai (Madras) came to the forefront of a movement towards the Indo-Saracenic style. Architect Robert Fellowes Chisholm informed the Royal Institute of British Architects: "…the men who will actually leave the impress of their hands on the materials, and these men have an art-language of their own, a language which you can recognise, but cannot thoroughly understand. For this reason an architect practising in India should unhesitatingly elect to practise in the native styles of art - indeed, the natural art-expression of these men is the only art to be obtained in the country." Chisholm is responsible for a number of public buildings along the famed Marina like the Chepauk Palace and Presidency College. After him, the landscape began to be dominated by architect Henry Irwin whose first project was the completion of the High Court and Law College. Jan Morris describes the sight in her book, Stones of Empire: The Buildings of the Raj, "Next door to the courts stood the Law College, and every traveller arriving by sea to Madras saw the buildings before they disembarked, for they stood on the Esplanade a little away from the docks: and with their multitudinous towers, pinnacles and domes, some brightly coloured, some decorated in stucco patterns, they presented a stunning welcome to the city, in grandiose partnership with the classical restraint of Fort St. George along the foreshore." Irwin also developed the complex that now houses the Government Museum and the Connemara Library in Egmore. He was the architect of Egmore Station incorporating traditional Tamil motifs with typical 19th century CE arches and vaulted roofs. However, his most famous creation is probably the Victoria Memorial House which is now the Art Gallery in Chennai that incorporates a façade borrowed from the Mughal emperor Akbar's Buland Darwaza at Fatehpur Sikri. The building is a faithful miniature, complete with scalloped battlements, slim minarets and chhatris (domes) and built with red sandstone from north India.

Town Hall in Mumbai was constructed in 1830 CE to house the Asiatic Society of Mumbai. The architectural style of this landmark edifice is Greco-Roman, with tall Doric columns at its front portico which has 30 steps leading down to the street. Town Hall in Mumbai houses many literary treasures including Persian, Prakrit, Urdu and Sanskrit manuscripts that are safely preserved inside the hall. This landmark overlooks the Horniman Circle Gardens in South Mumbai, India.

The Gateway of India, erected in the Apollo Bunder seafront of Mumbai, overlooks the Arabian Sea. It is built in Indo-Saracenic style. The architect of the grand structure was George Wittet, who used yellow basalt and cement to build the Gateway. The monolith was built between 1911 CE and 1924 CE to commemorate the landing of King George V and Queen Mary. Coincidentally, the last British troops to leave India passed through the Gateway, in 1948, signalling the end of the Raj.

The Final Brick–Assimilated Architecture

Through these pages, the complex interplay between the sea and the land has been illustrated using the stories behind India's glorious monuments. These immortal structures have weathered the test of time and speak to the present directly from the past. They inform of a time when India was the centre of a vast cultural empire that stretched from Sri Lanka to Indonesia, encompassing Burma, Cambodia and Malaysia.

It is important to remember that this influence was not a result of an empire of the sword, but rather the peaceful coming together of a vast and diverse people. With the onset of European power in the Indian Ocean, the roles were reversed and India came to be on the receiving end of external influence. The French, Portuguese, Dutch and British built churches, forts and entire towns that today add to the multitudinous diversity of India.

Ripon Building in Chennai was commissioned in 1913 CE. It was designed by G.S.T Harris and built by Loganatha Mudaliar. The architectural style is a combination of Gothic, Ionic and Corinthian; it is a massive white monument. The building was named after Lord Ripon, Governor-General of British India. It houses the Municipal Corporation of Chennai. One of the biggest attractions of this building is a Westminster Quarter chiming clock installed in 1913 CE , which is wound every day and still keeps the time.

Formerly known as the Cupid's Bow, the Victory War Memorial in Chennai was built in memory of the allied soldiers killed in World War I. Later, it became a memorial for soldiers killed from The Madras Presidency during World War II. Inscriptions of Kashmir Aggression, the India-China war and Indo-Pak wars were also added subsequently.

BASILICA OF BOM JESUS, OLD GOA

Basilica of Bom Jesus at Old Goa was consecrated in May 1605 CE by the Archbishop Dom Fr. Aleixo de Menezes. This is one of the oldest churches in India and a landmark in the history of Christianity. The UNESCO world heritage monument holds the mortal remains of St. Francis Xavier. The church is located in Old Goa, which was the capital of occupied Goa during the time of the Portuguese rule.

V - SENTINELS OF THE SEA

Coastal Forts and Lighthouses

Eyewitnesses to Passage of Time

Despite the presence of the volatile, raging sea at their feet, forts and lighthouses stand tall, unflinching, and face the destructive powers of man and nature head-on. Be it the sombre beauty of the Bekal Fort holding off the crashing Arabian Sea, or the grace with which the Indira Point lighthouse pays a testimonial to courage amidst great natural adversity, these sentinels of the seas have helped define the precarious locations they inhabit. The seas have created opportunities for trade in India since time immemorial. For centuries, forts and lighthouses have witnessed maritime history being played out on the Indian coasts. They have been witness to symbiotic trade relationships, violent battles and tragic wrecks. If their walls could talk, it goes without saying, they would weave a captivating narrative.

The Underi Fort is essentially a companion fort to Khanderi fort off the coast of the Raigad district. The twin islands act as landmarks for ships entering the Mumbai harbour, a purpose it has fulfilled since the time of the Maratha rulers. The Underi Fort was destroyed in 1532 CE, and today holds Portuguese ruins. Notwithstanding, the fort stands out as a beautiful structure from an aerial view as can be seen in this image.

Story of The Coastal Sentinels

It is difficult to encapsulate the story of every fort and lighthouse built along the coasts of India. The wars that have been witnessed, the power-struggles that have ensued, and the purposes that have been served, have been considered while writing this chapter. The approach adopted has been to list structures, keeping in mind their location, strength and their place in India's maritime heritage, moving from west to east along the latitude, and from north to south. These are structures that have not only been doyens of the sea that have protected kingdoms, been hubs of trade and royalty, and guided mariners, but have also served (and continue to do so) as symbols of an India that has embraced modernity and innovation without foregoing its heritage.

Coastal Forts

The coasts of India are dotted with forts. More than 400 forts still stand along the Malabar and Coromandel coasts. At an average of one fort every 20 km or so, it is the highest density of forts on any coast anywhere in the world. Forts were a layer of defence against antagonistic powers looking to usurp land, and were also important to maintain and

protect trade relationships outside one's borders. Cannons and fortified walls served to keep enemies out and provided safety to those within. There are two types of forts covered in this chapter as they are relevant to India's maritime heritage, viz. coastal forts and island forts. Coastal forts are those built at the mouths of rivers and creeks. A coastal fort's gates face landward and a moat protects it. The other kind of fort relevant to India's maritime heritage is the island fort, which is surrounded by the sea making it more secure than a coastal fort.

The forts, in a manner of speaking, have also been privy to the greed and deceit of man, and the violent and bloody battles that have occurred as a result. These forts are incredible feats of architecture, and symbols of a bygone era. Hence, they deserve a place as elements of maritime heritage.

Lighthouses

There are numerous dangers that lurk off the coast, and India's maritime history is replete with many unfortunate shipwrecks that have led to the loss of life and property. In the early days, it was imperative for mariners to keep a good watch on landmarks like the mouth of a river, the vegetation, the hills in the distance, the forts built on them, and other striking features to determine their position and to avoid treacherous waters. But however keen and alert these sailors were, and despite the wisdom and experience they had gained through their journeys, ship navigation was still fraught with potentially fatal risks. It was the introduction of the lighthouse that put to rest many of these concerns. Initially, mariners were guided by bonfires placed on the pinnacles of rocks. Over time the design of this navigational aid evolved. Bonfires became wick-burners, wick-burners became oil lamps, and oil lamps became more efficient electrical lamps. These electrical lamps emit light with differing characteristics to aid identification. Lighthouses are typically situated on elevated sites to provide a long range of visibility, and to ensure that mariners are able to clearly see the flashing characteristics.

THE OLDEST LIGHT HOUSE

The first known lighthouse in India was at Poompuhar, an ancient south Indian port city. Situated in the Bay of Bengal, India's oldest ever lighthouse has been written about eloquently by the famous Tamil writer Illango Adigal in the 7th century CE. In his book, the Silappathikaram, Adigal explains in great detail, the features of the beautiful lighthouse of Poompuhar. Adigal also mentions numerous ships that were anchored at Poompuhar port, which pointed to the large volume of trade conducted by the port in those days.

Prongs lighthouse can be seen on the southernmost point of Mumbai, in the Colaba area. Built in 1875 CE, its beam can be seen from a distance of 30 km seaward from the shore. The lighthouse is only accessible during low tide.

Diu Fort (West Coast)

The word 'diu' comes from the Sanskrit word 'dweepa' meaning island, and Diu Fort is located on an island off the Gujarat coast. Diu was occupied by the Chavda Rajputs in the 9th century CE, and later by the Vaghelas (a Rajput dynasty). The fort was a prized territory and long desired by the Portuguese because it would give them control over sea approaches to the ports of Surat, Baroch and Khambhat. The Portuguese were unsuccessful in their first three attempts to capture Diu, but finally found an opening in 1534 CE. The Diu Fort was built between 1535 and 1546 CE, under the direction of Governor Nuno de Cunha. An outer wall extended from the sea to the outer edge of the moat. The wall gate was connected to the inner gate across the moat by a drawbridge. Captain Manuel de Sousa built the moat in 1542 CE, and the outer wall was built in 1658 CE.

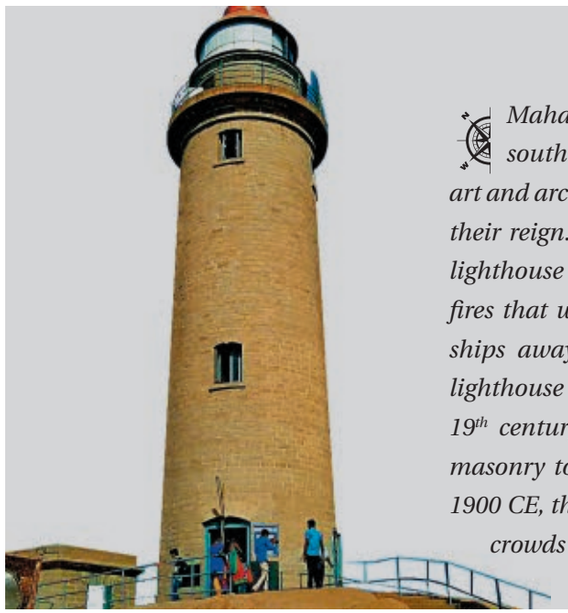
The Mughal Emperor Humayun was ready to invade Gujarat when the Sultan Bahadur Shah reached out to the Portuguese for help. The Portuguese now had a toe in the door, and instead of building a factory at Diu as had been permitted, they built a fort. When the Sultan realised the intent of the Portuguese, he attacked them in concert with an Egyptian fleet, and was successful in reducing a 400 strong battalion to 40. But even as victory was within reach, the Egyptian Sultan called his fleet back. Diu would, thus, remain with the Portuguese until it was liberated during Operation Vijay in 1961.

Diu Fort is a prominent landmark in the south of Gujarat in the Gulf of Khambhat on the west coast of India. It is a fort cum castle. The fort was built in 1535 CE following a defence alliance between the Sultan of Gujarat and the Portuguese. After the Portuguese desire to build a fort at Diu was met, there developed growing mistrust between the Sultan and the Portuguese on several issues. On assuming control over Diu, the Portuguese ruled the region from 1537 CE until 1961, when India evicted the Portuguese from their remaining colonies in Goa and Diu through a military action called Operation 'Vijay'. There are three monumental churches located within the walls of the fort in addition to tombstones, small chapels, and Venetian-styled bungalows. The government of Portugal conducted a poll in 2009, which identified Diu Fort as one of the seven wonders built by the Portuguese anywhere in the world. The lighthouse in the fort is at the highest point in Diu and its powerful light can be seen from a distance of around 32 km away. Diu is a Union Territory today that is administered by the central government of India and the fort is a major tourist attraction. The Indian Navy has also set up a memorial in the vicinity commemorating the crew of frigate Khukri that was lost in the 1971 war close to the coast of Diu.

False Point Lighthouse (East Coast)

On their way to the Bay of Bengal, several British East India Company ships used to mistake the mouth of the Mahanadi River to be the mouth of the Hooghly River. A lighthouse was, therefore, built here in the 1830's. The False Point lighthouse became the first landfall lighthouse on India's eastern coast and it is the oldest working lighthouse in the country. It also had the largest establishment of any lighthouse in the world because of its isolated location and lack of skilled workers nearby. A massive star was engraved on the body of the lighthouse tower to enable sailors to identify the lighthouse in day as well. Today, the old canon barrels that were installed during the World Wars can still be seen.

The British had originally selected the name 'Hookeytolla' for this lighthouse, but due to the misleading nature of the location, it was finally named False Point. The lighthouse establishment housed a doctor because of water borne diseases that spread in the region due to the prevalence of mosquito breeding grounds in the area. Many European light-keepers and their family members died of malaria during the time. There were, however, a few light-keepers who survived and spent many years working at the lighthouse. W.B. Sparkes, for example, retired as the Head Light-keeper after working there for 22 years.



STANDING TALL

Mahabalipur hosts the oldest surviving lighthouse in India, located 65 km south of Chennai, in Tamil Nadu. The Pallavas were great aficionados of art and architecture, and encouraged the making of elaborate sculptures during their reign. In the 8th century CE, the Pallavas built a rock sculptured bonfire lighthouse that stood gazing at the Olakkaneeswar Temple. For centuries, log fires that would emit light from the high rocks of Mahabalipur, would guide ships away from dangerous waters in the vicinity. In 1887 CE, an actual lighthouse was finally built here and was functional until the end of the 19th century CE. The lighthouse that exists today is a circular dressed stone masonry tower. Despite the presence of the new lighthouse that was built in 1900 CE, the original lighthouse still remains standing there and attracts huge crowds of tourists every year. The new lighthouse was electrified in 1994.

Fort William (East Coast)

There are two versions of this fort – an old and a new one. The first one was built in 1696 CE by the East India Company, on the banks of the Hooghly river. Named after King William III, this fort is octagon shaped. The fort was attacked by Siraj Ud Daulah, the Nawab of Bengal in 1756 CE which led to the British building a new fort. Three of Fort William's sides face the Hooghly, while five face the land. The design of Fort William is based on the concept of 'Star Forts', which were conceptualised keeping defence against cannon warfare in mind. Today, the fort houses the headquarters of the Eastern Command of the Indian Army, and can accommodate as many as 10,000 army personnel.

Fort William is one of Kolkata's most enduring Raj era edifices built during the early years of the Bengal residency of British India. The fort is a reinforced brick and mortar structure surrounded by a maidan or ground, which even today is the largest urban park in the city of Kolkata. Fort William is shaped like an irregular octagon and covers an extended area of 70.9 hectares. The original structure had two storeys and projecting wings. In the grounds of the fort is an internal guard room, which was once a dungeon, later to be known as the 'Black Hole of Kolkata'. Today, this fort is in the hands of the Indian Army. Civilian entry is restricted and the fort is, once again, equipped to house troops. Much of Fort William remains unchanged except that the St. Peter's Church is now a library for the troops of HQ Eastern Command.

Khanderi Fort (West Coast)

When the Maratha ruler Shivaji realised that he needed to defend his kingdom from the British fleet in the Arabian Sea, he constructed the Khanderi fort in 1679 CE. It is located about 16 km from Mumbai, and about 2 km from the island of Underi. There were several failed attempts by the English and Siddis to capture this fort, before the English finally overran its defences in 1818 CE. Khanderi Island was renamed Kanhoji Angre Island in honour of the great admiral of the Maratha Navy who waged many battles from there. The island also houses the Kanhoji Angre Island lighthouse. In 1852 CE, a beacon was constructed on this island, but it was taken down due to its similarity with the Kolaba lighthouse. A modern lighthouse was then constructed here in 1867 CE, and it continues to serve as an important landmark for ships entering Mumbai Harbour.

Khanderi fort is an island fort located 5 km off the coast of Maharashtra and close to the port of Mumbai. When the fort was operational, it functioned as a major fortification along the Maharashtra coast in concert with its sister fort Underi. The Khanderi fort was built during the reign of the Maratha ruler Shivaji, for the purpose of defending the adjoining land from any attack from the sea. Today, the fort is still intact and also houses a lighthouse which was built by the British in June 1867.

Janjira Fort (West Coast)

Janjira (also known as Murud-Janjira) comes from the Arabic word 'jazeera', which means island. This fort, off the Maharashtra coast south of Murud, is more popularly known as Janjira, but it has other names. Muslims called it Mehr-nisa or Mehar-ruba and the Portuguese named it Damada. The fort was built on a small island very close to the shore. Rama Koli built a small wooden outpost on the island in the late 15th century CE. When the Nizam Shahi General Pir Khan captured this island in 1538 CE, the wooden structure was rebuilt and extended in stone. Much of the construction was carried out under the direct supervision of Sultan Burhan Nizamshah.

In 1617 CE, Ismail Nizam Shah handed over the command of the fort to Siddi Ambar, who further strengthened the fort and made it his capital. The Siddis established a dynasty. They allied with the Mughals and the Adil Shahis of Bijapur. They possessed a potent naval force and fought against the Marathas in 1657, 1659 and 1675 CE. The fort was finally ceded to the East India Company by a treaty. The Siddis were allowed to retain the fort and it remained under British protection until 1834 CE.

Janjira is known to be the strongest island fort in India. It has the rare honour of being the only undefeated fort on the western coast of the country. This can be partly attributed to the cannons, 572 at one point, and guns that were in place to defend the fort against any attack. It was also positioned ideally; it was close enough to the shore to allow relatively easy communication, and far enough to provide a clear view of the sea. From both a defence and attack perspective, Janjira Fort was ideal.

Kolaba Fort (West Coast)

Situated near Alibag and almost a kilometre from the shore, the Kolaba fort is built on a rocky island, and is surrounded by a 7-8 metre high wall. It is an imposing structure with high ramparts, 17 bastions and a huge fresh water tank. In 1662 CE, when Shivaji controlled the south Konkan region, he made Kolaba one of his primary naval bases. Under the command of Darya Sarang and Mainak Bhandari, Shivaji's fleet attacked British ships whenever encountered. Consequent to a treaty with Peshwa Balaji Vishwanath, this fort was handed to Admiral Kanhoji Angre in 1713 CE. Angre made it his main base, and he continued to attack British ships. The British and the Portuguese repeatedly attempted to retaliate, but they failed every time. Finally, it was only in 1818 CE that the British East India Company took control of the fort.

Janjira Fort is situated on an oval shaped rock, off the Arabian Coast. It has the distinction of defending its sea territory from the armies of the Portuguese, British and Marathas, and never being defeated. Janjira is an exceptionally built fort made from stones bonded together by a mixture of lead, sand and stone. The fort also has an intriguing association with the number 22. It is said that it took as many as 22 years to build and rebuild this fort completely. The fort is spread across 22 acres. To add to that, the fort has 22 security checkpoints!

As the headquarters of the Maratha Admiral Sarkhel Kanhoji Angre, the Kolaba fort contained a complete settlement with temples, wells, and other structures, all of which can still be seen today along with the guns trained seaward, emphasising Kanhoji Angre's military might and strategy. The fort is a popular tourist destination.

Chandrabagha Lighthouse (East Coast)

The Chandrabagha River has seen ships from Bali, Sumatra, Java and Ceylon (Sri Lanka) in ancient times. These ships used the Sun Temple of Konark as a navigational landmark, but there was no light-based navigational aid prior to the construction of a lighthouse in 1965. The construction was completed in 1967 and has been in service since 01 March 1968. The range of its light is 26 nautical miles.

Named after the river of the same name, Chandrabagh lighthouse is one part of Odisha's (Orissa) most famous tourism destinations. While the river is now completely dried up and no longer exists, the Chandrabagha lighthouse still stands tall. This lighthouse is located 3 km from the 'Sun Temple of Konark'. The lighthouse was in the news in early 2015 when a sunken ship was spotted about 55 nautical miles from the Chandrabagha beach. A short break at Chandrabhaga lighthouse provides welcome relief to a fatigued visitor.

Fort Aguada (West Coast)

Aguada, in Portuguese, refers to a place where water accumulates. Built on the tip of the Mandovi estuary in 1612 CE, the fort was named Aguada because of the abundant springs around it, as well as the presence of a large well that provided fresh drinking water to sailors. It even housed a cistern that could store up to ten million litres of fresh water, one of the biggest stores of fresh water in Asia at the time. The fort's primary purpose was to keep the Dutch and Maratha forces at bay, and it was aided in this effort by 200 cannons and a dry moat. This defensive strategy of

Fort Aguada is a well preserved Portuguese fort on Sinquerim Beach, Goa. The fort was built in 1613 CE, overlooking the Arabian Sea, to guard against Dutch and Maratha invaders. It acted as a marker for ships travelling from Europe during the time. The fort also comprises of a four-storey lighthouse, built in traditional Portuguese style of architecture.

the Portuguese appears to have worked since the fort was never conquered in their 450 years of colonial rule. The vastness of the fort – it covered the complete peninsula at the south-west tip of Bardez – meant that the Portuguese could build the Church of St. Lawrence within the fort's battlement. This would have been too dangerous in a smaller fort since it would open up the option for enemy forces to take over the church, make it a stronghold, and then fire at the Portuguese's inner defences. But due to Fort Aguada's size, this was considered safe. Later, by the middle of the 19th century CE, the area below the fort became one of Goa's major prisons because of its isolated location.

The Aguada lighthouse is located on a hill west of Fort Aguada in Goa. Built in 1864 CE, it was the oldest of its kind in Asia. It overlooked Calangute Beach on one side and the tip of the Mormugao Peninsula on the other. It also used to be home to the massive bell that was discovered in the ruins of the St. Augustus monastery in Old Goa. After being in service for more than a hundred years, this lighthouse was replaced by a modern one in 1976.

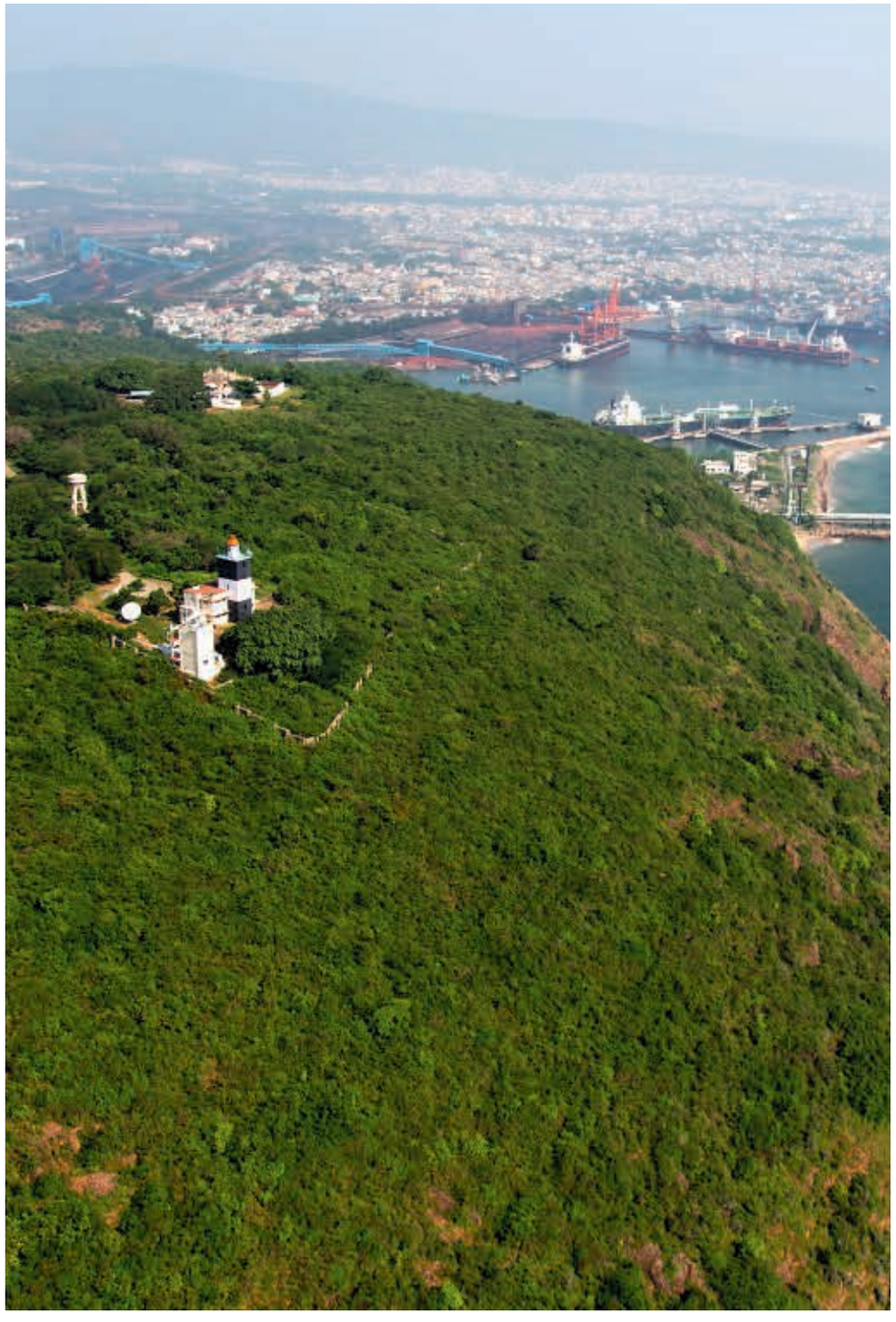
21 SEPTEMBER – LIGHTHOUSE DAY

For years in pre-independent India lighthouses existed with no formal authority or body to look into matters such as upkeep, restoration, and building. Finally, on 21 September 1927, the Governor General of British India approved the passing of the Lighthouse Bill, which is observed as Lighthouse Day every year. Lighthouse Day honours the beacon of light that for centuries has brought sailors safely home.

Dolphin's Nose Lighthouse (East Coast)

Visakhapatnam is referred to as the 'Jewel of the East Coast'. The port is one of the busiest in India and is the only natural harbour on the east coast. Built in the 18th century CE, Dolphin's Nose lighthouse is not only one of the most famous landmarks, but also aids safe navigation by vessels entering or leaving Visakapatnam port. It stands to a height of 358 metres above sea level, and can direct ships at a distance of around 65 km. The lighthouse is situated atop a hill that also serves as a base for the Indian Navy.

Pictured alongside is Dolphin's Nose lighthouse, which is built on an elevated piece of land on the coast of Visakhapatnam. As the name suggests, the headland that this lighthouse is situated on resembles the nose of a dolphin. At a height of over 1,000 ft above sea level, the lighthouse can guide ships at a distance of 65 km away, with a bright white light that flashes once every 10 seconds. Dolphin's Nose lighthouse overlooks the entrance of the harbour, and gives one a perfect view of the city of Visakhapatnam. The hill range that the lighthouse is located on is called Yarada Konda. Dolphin's Nose lighthouse is 25 km from the city of Visakhapatnam, or Vizag as it has been nicknamed, and is accessible by road. In 1876 CE the lighthouse was damaged by a powerful cyclone. It was reconstructed and the present structure is state-of-the-art with facilities for cyclone forecasting. The lighthouse marks the entry into the port of Visakhapatnam, also called the 'City of Destiny' and 'Jewel of the East'.



Gopalgad Fort (West Coast)

Also known as Anjanvel, Gopalgad fort is situated to the north of Goa. It was built in the 16th century CE, on a hill that is surrounded by sea on three sides. While the fort was built by the Bijapur kingdom, it was strengthened by the Siddis and Marathas. The Siddi warriors Khairat and Khan Habshi captured it in 1699 CE, and built the upper citadel. In 1744 CE, the Maratha Sardar Tulaji Angre took over the fort and strengthened the lower portion.

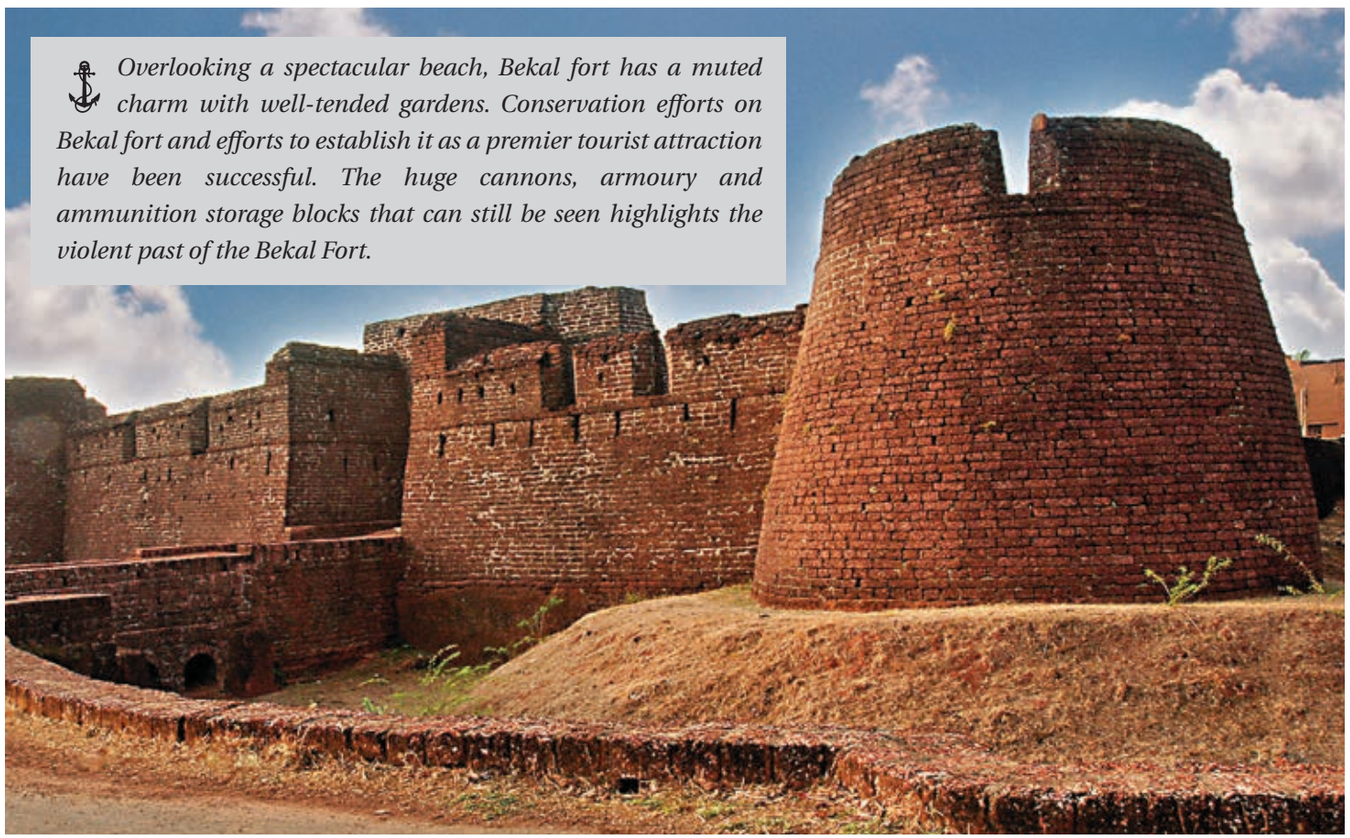
A rather dubious, yet intriguing apocryphal tale about Gopalgad involves a man named Siddhivinayak, who once climbed up the hill where the fort is located. Tired after the long journey, he looked for drinking water, but was denied access to the well by the Marathas and the Brahmins in the fort, because he belonged to a lower caste. A travelling Arab horse trader happened to pass by the fort, who threw a challenge to all who were present: "If anyone can ride my horse, I will gift him a silver armlet."

The narrative goes on to add that Siddhivinayak was the only one who succeeded in the challenge. Repulsed by the attitude towards him, he left the fort with the trader and joined the infantry of the British East India Company. A few years later, Colonel Kennedy wanted to attack Gopalgad and Siddhivinayak led the way. The fort was captured, and a vengeful Siddhivinayak had all the Marathas who had ill-treated him, thrown into the same well that he was refused access to.

The Gopalgad fort is an ancient stone fort that was built by the rulers of the Bijapur dynasty in the 1500s when they ruled over most part of the Konkan region. In a period of 600 years since it was built, it changed hands many times from Shivaji to Sambhaji and finally, went into the hands of the Siddi rulers. The Peshwas were the last Indian dynasty to control the fort, eventually losing it to the British Empire. This fort has been the battle ground for many wars that were fought to acquire it. It is guarded by strong walls and features 12 buruj, or towers, that enabled a small body of troops to monitor the adjoining Arabian Sea coast. Disuse has led to the fort being rendered almost a ruin but its walls are still discernible.

Bekal Fort (West Coast)

Bekal is one of the largest forts along the western coast, and is arguably one of the most striking as well. There is a theory that the name Bekal comes from 'be' which means burning, and 'kalku' which means stone. Bekal fort is home to a number of intriguing structures like a stepped tank, a ramped watchtower, and a tunnel opening into the sea. Recent excavations have also revealed the remains of a Darbar Hall, a temple complex, a mint house, and a palace complex from the medieval period. The discovery of the palace adds credence to a different theory that Bekal is, in fact, a corruption of the word Baliakulam which means Big Palace. The fort's origins are unclear. What is known for sure is that Hyder Ali captured the fort in 1763 CE, after which it served as a crucial military base for his son Tipu Sultan during the fight for Malabar. With Tipu Sultan's death in 1799 CE, the British took over the fort and it lost its significance thereafter. But its rugged beauty makes it a popular tourist destination.



Overlooking a spectacular beach, Bekal fort has a muted charm with well-tended gardens. Conservation efforts on Bekal fort and efforts to establish it as a premier tourist attraction have been successful. The huge cannons, armoury and ammunition storage blocks that can still be seen highlights the violent past of the Bekal Fort.

Fort St. George (East Coast)

It is hard to say if the metropolis of Chennai would even exist today if it was not for Fort St. George. In 1644 CE, two officers of the British East India Company, Francis Day and Andrew Cogan, picked an uninhabited strip of beach by the Bay of Bengal and built a fort. From their perspective, this was to help the British secure their trade on the east coast of India. But this also led to the creation of settlements around the fort as it provided incentives for locals to get involved in trading activities. Soon, these settlements grew and encompassed the neighbouring villages. Thus, the city of Madrasapatnam, or Chennai, was born. Fort St. George was the hub of all the East India Company's activities in southern India and became the headquarters of the city when power shifted from the Company to the Crown in 1858 CE. The fort is still in active use today as one of the administrative headquarters of the Tamil Nadu legislative assembly.

An image that is synonymous with Chennai, is the tall red and white striped Madras lighthouse on the shores of Marina Beach. This is, however, the latest of the four lighthouses that have been built in the city since 1796 CE. Since Madras was the headquarters of the British East India Company's southern trade activities, it became necessary to ensure the safety of ships entering the harbour, an endeavour that became quite risky after nightfall. To aid the ships entering, a lighthouse was built in 1796 CE, on the roof of the Stock Exchange building. The light was provided with

12 oil wick lamps, and was seen as far as 25 miles from the shore. Merchants on the ships exchanged stocks and shares signals with the lighthouse that materialised as transactions in the Public Exchange Hall. The lighthouse that is seen today was built in the 1970s, and is the only one in the country to be within city limits and also have an elevator.

Fort St. George is named after Saint George, who is accredited to have had immense influence in the southern region during the Raj. The fort served as a hub for trading activity and is one of the first constructions undertaken by the British in India.

NORTH POINT LIGHTHOUSE

Traversing through the seas around Port Blair in the Andamans, one is likely to see flashes of light that appear every 12 seconds. Embracing the northern entrance of Port Blair harbour, the lighthouse here is 115 ft in height. A little known fact is that the North Point lighthouse is more popular than what is commonly believed. If one looks carefully at the rear portion of an Indian ₹ 20 note, one will spot a sea-facing landscape. At the right end of the landscape, one can see a tiny rendition of a lighthouse. That is the North Point lighthouse, deserving enough to be embellished on the currency of India.

Mount Dilli Lighthouse (West Coast)

Mount Dilli, or Kotte Kunnu, is a prominent hill feature of Ezhimala. This historic region used to be an exporter of spices to the Arabs and south-east Asian countries. Since Mount Dilli was a visible landmark, there wasn't an obvious need to build a lighthouse. However, traffic in nearby waters increased in the 1960s, and in 1965, a shipwreck occurred just off the coast.

These two factors led to the construction of the lighthouse on top of Mount Dilli in 1978, and the Mount Dilli lighthouse has officially been in service since 23 June 1979. The Mount Dilli lighthouse stands proudly within the campus of the Indian Naval Academy in Ezhimala.

Mount Dilli lighthouse marks the location of a significant landmark in India's maritime history. Arab sailors made landfall after their passage across the Arabian Sea at Mount Dilli, the highest mountain peak seen in the image. Mount Dilli has, in fact been the navigational mark for ancient mariners and travellers ranging from Pliny to Marco Polo and Vasco da Gama. The Indian Naval Academy, established at Ezhimala off Mount Dilli, can be seen in the distant background. The lighthouse now lies within the premises of the Academy and is part of the coastal security radar network. The annual maritime history seminar series at the Naval Academy has also been christened the 'Dilli' seminar series after the historic Mount Dilli and has the lighthouse as its logo.

Fort Dansborg (East Coast)

The establishment of Fort Dansborg in Tharangambadi (Tranquebar), on the shores of the Bay of Bengal, was a happy accident for the Danes. The Danes wanted to set up sea trade links in the east, but their original destination was Ceylon (Sri Lanka) where Dutch captain and friend of the Danes, Roelant Crape was stationed. However, before the Danes could reach Ceylon, there was a skirmish between Crape and the Portuguese, who were also trading there. Crape's fleet was heavily defeated but he managed to escape to Tanjore where Raghunatha Nayak gave him protection. Ove Gjede, the commander of the Danish fleet, heard of Crape's difficulties and sailed to meet him. In Tanjore, Gjede also met with Raghunatha Nayak who was keen to establish trade with the Danes. A treaty was signed in 1620 CE between the Nayak and the Danish East India Company and this allowed Gjede to a build a fort, and trade freely with Nayak's people. Fort Dansborg was thus built in Tharangambadi, or Tranquebar as the Danes call it, and it became the first Danish settlement on the Coromandel Coast. It remained with the Danes until 1845 CE, when they sold it to the British at an exorbitant cost of ₹12.5 lakh.

Tharangambadi in Tamil Nadu is known for Fort Dansborg, which is one of the most prominent attractions in the area. The fort, which is located on the shores of the Bay of Bengal, is one of the few and valuable establishments set up by the Danes in India. Denmark actively traded with India for pepper, and Fort Dansborg was the location where the practice originated. The fort is built in the Danish style of architecture and is characterised by large halls, high ceilings and projecting drapery. While the fort appears to have lost most of its external lustre today, a museum inside the fort houses a number of artefacts from the days when the Danes traded here. An interesting tale explains that the Danes actually set sail to reach the shores of Sri Lanka, but the rough sea brought them to Tamil Nadu. Having seen the location and estimating its potential, the Danes settled in this area.

Vattakottai Fort (East Coast)

The origins of Vattakottai fort in Kanyakumari are unclear, but the fish engravings on the fort walls hint at a Pandyan past. Some tentatively date the fort to the 12th century CE, but what is known is that it became a Travancore stronghold in the 18th century CE, under the rule of Marthanda Varma, the king of Travancore. Varma took a Dutchman DeLannoy as one of his generals, and his legacy lives on today in the 'Left-Right-Left-Right' soldiers' drill call that he introduced. The Vattakottai fort has the distinction of being located in Kanyakumari, the southern-most point of India's 'land mass', as the actual distinction of being 'the' southern-most point of India belongs to Indira Point lighthouse in the Andaman and Nicobar Islands.

Minicoy Island (South-Western Coast)

Minicoy island is a part of the Lakshadweep archipelago, and its ancient name was Mahiladu, or 'women's island'. It got this name because most of the island's men were at sea.

There were many shipwrecks at Minicoy and the construction of a lighthouse became even more necessary with the 1869 CE opening of the Suez Canal, which vastly reduced the distance between Europe and east Asia. Hence, in 1882 CE the British Government decided to build a 150 ft high lighthouse at Minicoy. All the necessary material to build the lighthouse were imported from England, and the workers were brought from Ceylon (Sri Lanka). It was constructed with black bricks, steel and special Holland cement, and was officially opened in 1885 CE. When the Governor of Madras visited the island in 1952, he was unhappy to see the Union Jack on the lighthouse and raised the issue with the Indian government. But the British Government did not transfer the administration of the lighthouse to India till 1956. On the day of the official transfer, the contingent of Tir, the naval ship representing India, presented a guard of honour, but in a surprising move, an emotional Superintendent of the Imperial Lighthouse Service, left in the middle of the ceremony without saying a word.

The Minicoy Island lighthouse is the only one where the Indian national flag is unfurled every day. On the occasion of its centennial anniversary, a commemorative postal stamp of the lighthouse was issued and the lighthouse was rededicated to the service of mariners.

Minicoy island, also locally known as Maliku, is regarded as one of the most picturesque islands in Lakshadweep. It has a distinct language and population and is considered to be the last outpost of the Lakshadweep archipelago. Minicoy island is home to a tall lighthouse that is one of the prominent landmarks here. It guides ships away from the hazardous coral reef that surrounds the island. Minicoy island lighthouse was constructed to guide the passage of British ships that used the Suez to Singapore route through the Eight Degree Channel.

Vattakottai fort goes by a couple of monikers – it is also known as 'Circular fort' and 'Sunset Point'. Vattakottai fort has been well-preserved, with a garden and a man-made water body adding to its beauty. The view of the sea that the fort offers is visually breathtaking, and the fort resembles a large arcade or park from the inside. Vattakottai fort is primarily a granite-built fort.

INDIRA POINT LIGHTHOUSE

Indira Point lighthouse is located in position 6°45'10"N and 93°49'36"E in the Great Nicobar island of the Andaman and Nicobar group of islands and is the southern-most tip of India (Cape Comorin or Kanyakumari in position 8° 4' 33" N, 77° 32' 53" E is the southern-most point of mainland India). Indira Point, the location of the lighthouse, has been so named to commemorate the visit of the former Prime Minister of India, Smt Indira Gandhi, to the area in February 1984. The land surrounding the lighthouse is beautiful and a scenic addition to the allure of this place. The tsunami of 2004 submerged the adjoining land and disconnected the lighthouse from the island. Since its commissioning on 30 April 1972, the Indira Point lighthouse has been an important sentinel of India's maritime interests.

VI - ART OF CRAFTING LEVIATHANS

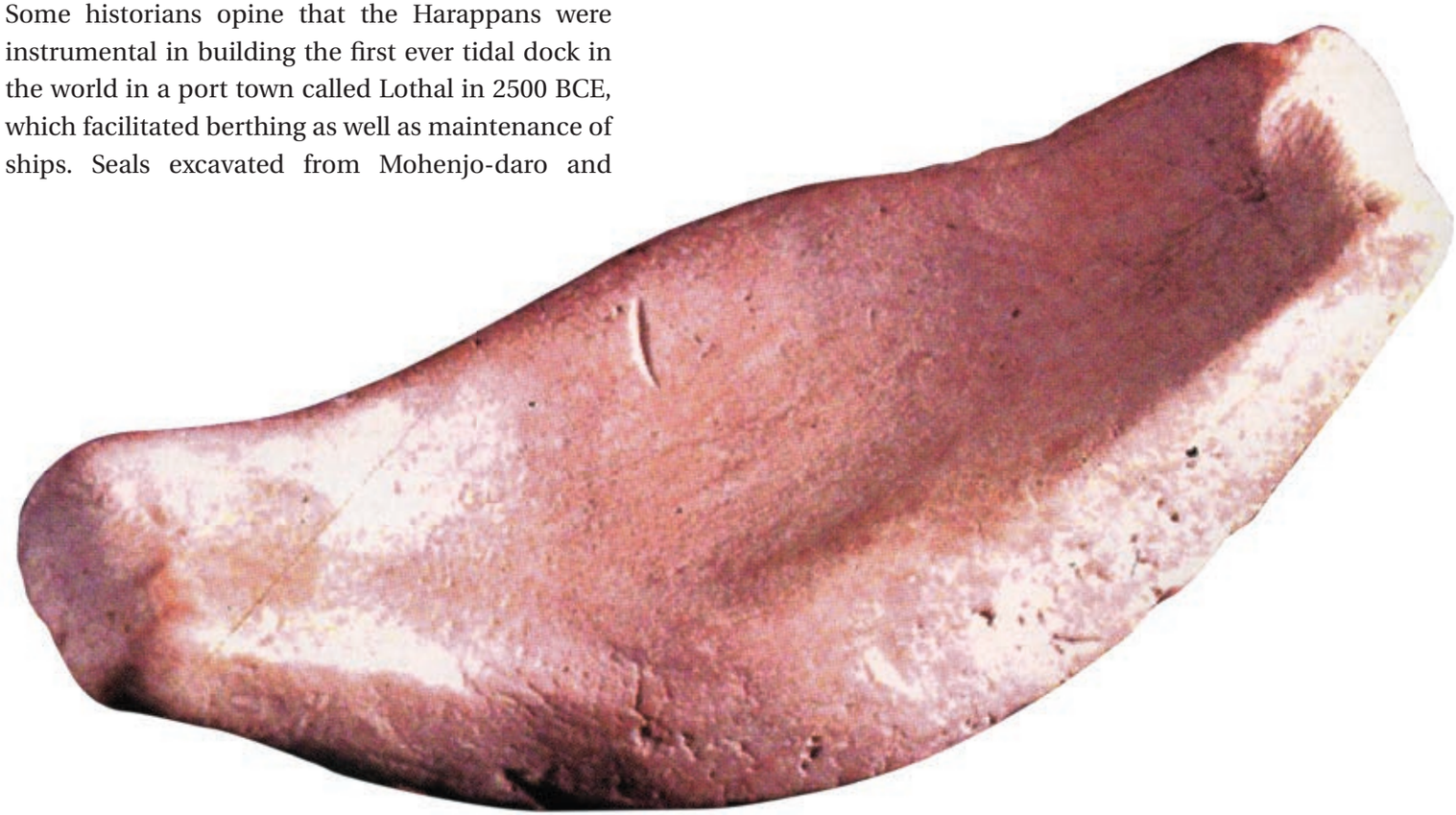
Shipbuilding in India

The Early Stirrings

Historically, ships have often been the catalysts for securing trade links, exchange of cultures and supporting warfare at sea. From reed boats to massive vessels, shipbuilding in India has experienced birth pangs and infancy, aggressive growth, sharp decline and roaring successes, through time. This chapter traces the evolution, growth and development of shipbuilding activities in India through the ages.

Some historians opine that the Harappans were instrumental in building the first ever tidal dock in the world in a port town called Lothal in 2500 BCE, which facilitated berthing as well as maintenance of ships. Seals excavated from Mohenjo-daro and Sumerian texts describe the reed boats of Meluhha. Thor Heyerdahl, a Norwegian explorer, records that voyages in the reed boats of the Indus Valley to Magan (Muscat), Dilmun (modern Bahrain) and Sumeria commenced as early as 1500 BCE. In his book 'The Maldive Mystery', he opines that around 1500 BCE, the people of Maldives were in contact with the last remnants of the Indus Valley civilisation and that the same type of reed used to build boats in the ancient times in the Narmada estuaries were also used in building Maldivian ships.

With time, vessels evolved to being the mascots of strength and power. Both the Mauryans and the Cholas were known to have competent naval fleets. Strabo, the Greek philosopher, observed that during the Vedic period from 600 to 200 BCE, the Mauryans owned and monopolised the shipping industry. The era witnessed large-scale acquisition of boats, including those with 30 oars by Alexander, which were built in the Punjab region, for his fleet to return.



Archaeological evidence shows that the people of the Indus Valley civilisation used water-crafts for trade and commerce as well as to ferry people across the river. The boats used during that era were probably small vessels with sails; they may have been flat-bottomed to ply in the shallow waters. A terracotta model of a ship unearthed from the ruins of Lothal as seen in the image, establishes the existence and usage of ships and rafts during this period. Sumerian texts mention that the Sumerian people mainly traded with three important centres namely Magan, Dilmun and Meluhha, which is the Sumerian name for the Indus Valley.

Pre-European Era Maritime Affairs

Before the Europeans arrived in the Indian Ocean, the Persians, followed by the Arabs, dominated the maritime trade on the west coast of India. Trade in the Konkan ports of Chaul and Goa was dominated by the Muslims. Timber from Bassein (modern Vasai near Mumbai) was considered especially suitable for shipbuilding. Chhatrapati Shivaji supported the already flourishing shipbuilding industry in the Konkan and built a formidable Maratha fleet. The Khalasis of Malabar, a group of people renowned for their physical strength and muscle coordination comparable to modern day machines, worked at the ports to assist in the maintenance and repair of ships and boats. Beypore, an ancient port town of south Calicut, was and is still acclaimed for its production of the famed 'Uru' boats by the Khalasis. Uru boats were common in the western ports of the Indian Ocean and the Red Sea. Availability of fine quality timber in the rain forests of Nilambur in the present day Malappuram district of Kerala, coupled with cheap labour attracted the Arabs. Till date, the Urus are manufactured and exported to Arab nations from Beypore. Its possession is also a status symbol among Arabs.

Tools found during excavations in Golbai Sasan, in Odisha, prove that the ancient Iron Age people were adept at making boats and were seafaring traders. The ancient Kalinga coast was peppered with ports mentioned by travellers like Ptolemy, Pliny, Fa Hien and others. Roman pottery and coins discovered in Sisupalgarh suggest that Kalinga maintained active trade relations with the ancient Roman Empire. This image of rock art found on a hillock on the banks of river Mahanadi at Naraj, near Cuttack (in Odisha) depicts shipbuilding and highlights the maritime heritage of Odisha.

Post-European Maritime Affairs

The Portuguese arrived in the 15th century CE with their transom stern, square rigged vessels armed with cannons, for trade. They soon established a monopoly over the Indian Ocean commerce. This was later emulated by the East India Company and, to some extent, by the Dutch and the French. Pinnacles of the Portuguese naval fleet were built at Bassein, an ancient port town known as the 'Biscay of India'. The shipbuilding skills of Goan natives enticed the Portuguese to conquer Goa and make it the hub of their activities and shipbuilding. King Manuel I of Portugal, stated in a letter, "ships built there (India) last longer than those built in the kingdom (Portugal)."

Joao Corte Real, the then Portuguese admiral in service, opined that Portuguese ships now have four decks, as opposed to the previous three, to enhance capacity. A ship with these requisites would require more timber and durable material. Hence, local shipbuilders employed tempered iron imported by the Portuguese and built strong, durable iron nails. This warranted higher investment from potential buyers, and the Portuguese demanded exorbitant prices. In response, the British built a shipyard in Mumbai by 1750 CE, but soon realised that successful operation of the dock would be impossible without engaging the skilled Parsi master shipbuilders.

Shipbuilding in the Kutch

The wet dock unearthed at Lothal suggests that the Harappans built large-sized vessels capable of long voyages across the high seas. The dock situated at the Gulf of Khambhat in the estuary of the Sabarmati and Bhogwa rivers, was built of baked bricks dating back to 2300 BCE. This indicates the possibility of the dock being operational either for large-sized vessels, or as pens for smaller boats. Between 1750-1800 CE, Surat attracted innumerable ship owners. The port was adept at building ships for the Mughal navy. The British set-up a factory at Surat in 1612 CE and Stavorinus, a Dutch explorer, spoke about ships costing ₹ 75,000 being built by the British in Surat.

The largest ships were those engaged in Chinese trade, whereas ships that sailed to Arabia and Persia were comparatively smaller in size. While the Portuguese conducted most of their construction

Seen in this image is a manuscript called the Arnava Vilas Bihara. It depicts traditional boat building techniques implemented in the pre-European era of ship and boat building. The method of writing manuscripts on palm leaf is known as Talapatra grandham and has been recorded in south Asia and south-east Asia since the 5th century BCE. Through history, since the time of the ancient civilisation of Harappa until 1700 CE, India was recognised for its shipbuilding capabilities, which were highly regarded in different parts of the world.

and shipyard work in Goa, and the British in Mumbai, Daman emerged as the hub of seaborne trade during the Malwa rule. Eventually, a number of ships were built in Daman under the patronage of Rogerio de Faria, a Goan businessman, who was collaborating with the Portuguese. Daman had a sizeable variety of wood available including teak, rosewood and sheesham, best suited for building ships engaged in both coastal and long-distance voyages.

The coastline of the Indian subcontinent was dotted with numerous ports and harbours actively supporting maritime activities of the local and coastal traders as well as fishing communities. Consequently, boat building and port related communities thrived. The advantageous location with regard to east Africa, the Arabian peninsula and east Asia, and availability of excellent Indian timber in close vicinity of these ports and ship-repair facilities, gave further fillip to the commercial viability of these traditional maritime activities of the local communities across the ages. This is an image of a traditional dhow being built even today in Gujarat.

A Monopoly Influenced by Colonial Rule

In the Konkan region, Hindu artisans, Parsi and Christian carpenters were adept at shipbuilding. Their techniques of shipbuilding underwent changes with the arrival and involvement of Portuguese and English shipbuilders. Shipbuilding activity in Vasai (Bassein) is believed to have preceded Portuguese occupation. The then Sultan of Gujarat, after acquiring the Bassein territory, built several shipyards along the coast of Papdi, on the creek leading to the Ulhas estuary, and at Naugaon and Koliwada. The vessels built at Bassein employed both old and new techniques acquired from Arab and Portuguese shipbuilders. Larger vessels, ranging from 700 to 1000 tonnes, were known as the Batelas and vessels fitted with guns were known as Ghurabs and Gallivats. The French traveller, Francois Pyrad de Laval had written "Bassein is to Portuguese India what Biscay is to Spain."

Goan built ships often lasted more than a decade, and withstood several round voyages in comparison to the Portuguese ships made at Lisbon. Between the city of Goa and the river bank, there were three large shipyards, which produced some of the best ships of the fleet. During the 16th and 17th centuries CE, the Portuguese mastered the Goan art of shipbuilding and a handful of their ships made several voyages to Portugal and back.

Shipbuilding Under The Marathas

During the 17th century CE, Chhatrapati Shivaji built a robust fleet, with ships skilfully fitted with guns. His navy successfully battled with the English, the Portuguese and Siddis. Shivaji's navy had about 500 ships as the mercantile fleet and another 200 combat ships of various sizes.

During the colonial period, Maratha shipbuilding hubs such as Kalyan, Bhivandi, Bassein, Thane, Malvan, Alibag, Bankot, Vijaydurg and Goa were used for the construction of large displacement ships for warfare, fishing and freight transport. The remains of the docks at Alibag and Vijaydurg establish the astounding dock construction abilities of the Marathas.

This image below is an artist's impression of the Daman dockyard during the Portuguese period who had arrived in Gujarat in the 16th century CE. During this period, the Sultan of Gujarat was under attack by the Mughals, to counter which, he entered into a defence treaty with the Portuguese and permitted them to build a fortress in Daman. With this fortification, the Portuguese took control over routes in the Arabian Sea and began to dominate trade off the west coast. The region also emerged as an important shipbuilding port during the Malwa rule. Many Portuguese warships and trading boats built here served the Portuguese very well and enhanced the shipbuilding reputation of the region.

To enable shipwrights to continue building without hindrances that the South-West monsoon caused, the shipbuilding sites of the Marathas were usually situated inland at a sufficient distance from a river or a creek, beyond the reach of tidal waters. But at the same time, the sites were close enough to exploit spring tides to float completed ships down the river. Warships such as the Pals and Mahagiris were constructed using timber.

Shipbuilding complexes in Kolaba produced vessels fitted with artillery. The Siddis had only one building hub in the Mhasla creek and around Murud-Rajpuri, but the site had the best quality teak from the Nagothane hills.

Maratha ruler Shivaji clearly understood the relevance of control over the adjoining seas to retain mastery over the land. Towards this, he developed shipbuilding industry in Vasai, Thane, Kalyan, Bhiwandi, Alibag, Bankot, Vijaydurg and Malvan to enhance his sea-power, both mercantile and warships, to challenge Portuguese domination at sea. He built sea and coastal forts to protect those inland shipbuilding industries from attacks. Murud, as seen in the image, was one such fort to defend his coastal shipbuilding industrial region.

The figurine excavated from a coastal town Anantapur in West Bengal, and presently located in State Maritime Museum in Odisha, brings out the extent of maritime activities of Odisha in ancient times. Odisha was earlier known as Kalinga to the ancient world and the people of this region sailed up and down the Bay of Bengal, towards the Indo-China coastal region and the rest of south-east Asia. Kalinga, on the east coast of India, extended from the Ganges in the north to the Godavari river in the south. Kalinga's maritime activities were so intense and extensive that the Bay of Bengal was once named Sea of Kalinga in recognition. The ancient and proud maritime heritage of Odisha is still celebrated during the Bali Jatra, or Boita-Bandana festival, in the months of October-November.

Shipbuilding under the British

In 18th century CE, Gerald Aungier, the Governor of Mumbai recognised the potential of the deep Ghodupdeo Bay to the north of Mazagaon, where a native boat building yard had flourishing business repairing smaller crafts, as a site for repairing ships under 200 tonnes.

By 1748 CE, the first vessels for warfare at sea started rolling out from the Mumbai dockyard. Soon, the Parsis who were considered to have profound knowledge in shipbuilding, started migrating to Mumbai. To tap into their shipbuilding legacy, the British invited the famous Wadia family from Gujarat. Lowjee Nusserwanjee Wadia was the first 'master builder' to be appointed. In 1754 CE, the Superintendent of the Marine Department proposed the construction of a dry dock. The success of the shipbuilding industry led to increase in the capacity of the dockyard in 1757 CE. After nearly four decades of service, Lowjee passed away in 1774 CE, and his sons, Maneckjee and Bomanjee took over as Master Builder and First Foreman, repectively. The brothers took shipbuilding in the Mumbai dockyard further forward and, in just a couple of decades, around 40 ships were built at an average rate of two per year. The wood used in the early ships came mainly from the forests on the west coast. Abraham Parsons, a British traveller, spoke at length about the Bombay dry dock, and observed that the Mumbai built ships were sturdy.

Shipbuilding in India was a well established industry even before the arrival of the colonial powers. The Indian figurine on the Bowsprit of the HMS Trincomalee indicates the place of its construction. European trade provided an impetus and considerable stimulus to the flourishing shipbuilding industry in different regions of the Indian peninsula. Indian ships built in Surat were acknowledged to be sturdier and cheaper than those built in the European yards. The British recognised this advantage and set up their own shipbuilding yard in Mumbai. They transferred skilled Parsi labour from Surat to this new shipyard in Mumbai. Among the many robust warships and trading ships that subsequently emerged from the Mumbai yard between 1736 and 1821 CE, almost 159 ships were of 100 tonnes and above displacement. It was widely acknowledged in the shipping industry that the ships produced by the Mumbai shipyard were among the best in the world. HMS Trincomalee was one such ship built in the Mumbai shipyard in 1817 CE and is the oldest British warship still afloat.

Shipbuilding in the Southern Peninsula

Kerala

The success of shipbuilding industry in Kerala is, to an extent, attributable to the continued support from Arabs, especially the Omanis, who were the primary customers of the industry. Some of the most prominent shipbuilding centres in Kerala were Vizhinjam, Anjengo, Neendakara, Kollam, Beypore, Tanur and Kasargod. Kerala's tryst with shipbuilding dates back to the Zamorins of Malabar. They innovated and used smaller boats, which made manoeuvring easy and were visibly smaller targets for the enemy. The Cochin Shipyard was one of the major centres of shipbuilding during the Portuguese rule. The shipyard had a good supply of timber, especially the Angeli wood and teak. Today, the Cochin Shipyard is building India's first indigenous aircraft carrier Vikrant. The Cochin Shipyard is also examining the feasibility of constructing another dry dock in preparation for the next larger aircraft carrier. Situated in the port city of Kochi, the Cochin Shipyard can build vessels weighing up to 1.1 million tonnes, and can repair vessels weighing up to 1.25 million tonnes.

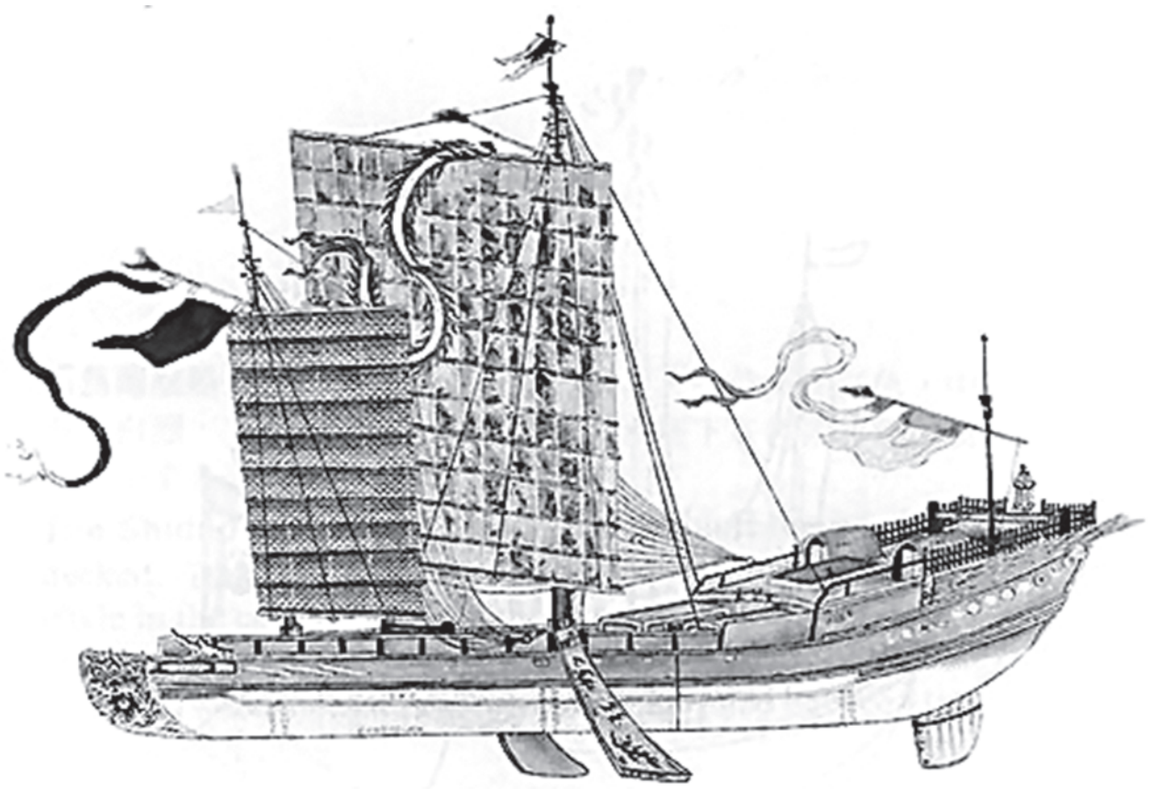
The Cochin Shipyard Ltd. (CSL) came into existence in 1972 and has the capacity to build ships of 1.1 million tonnes. The first ship to sail out of the shipyard was MV Rani Padmini in 1981. The shipyard was involved in the refitting of India's aircraft carrier Viraat, and building of the first indigenous aircraft carrier Vikrant. This image shows the aerial view of the CSL with Viraat entering the dry-docks to the left and Vikrant being fitted-out to the right.

Tamil Nadu

Shipbuilding in undivided Tamil Nadu region was a prominent and flourishing industry during the days of the Tamilagham. Ocean sailing vessels of different sizes and types were built to be used by fisherfolk, traders and royalty. Kayal, Thoothukudi, Kilakarai, Mandapam, Adirampattinam, Muthupettai, Cuddalore, and Kodiakarai were some of the prominent shipbuilding centres in Tamil Nadu. While the traditional, smaller vessel building centres have shrunk with time, some of these centres have retained their prominence and relevance.

Although Thoothukudi and Cuddalore only construct smaller craft, they can also build larger boats. The shipbuilders in Tamil Nadu acquire fresh timber either from the forests or buy them from the markets and season them by burying the wood in the sand. These are taken out after a few months and then sewn together to create boats. The government of Tamil Nadu has allocated funds for the construction of a large shipyard in Tuticorin, which is already a major port. This move will boost shipbuilding activity in the region.

The Larsen & Toubro (L&T) owned Kattupalli shipyard in Chennai was completed and declared operational in June 2015. Construction of Offshore Patrol Vessels for the Indian Coast Guard, and a Floating Dock for the Indian Navy is already underway. The shipyard is also building Interceptor boats for the Coast Guard. Kattupalli can handle repairs of boats, ships and submarines and plans to accommodate larger vessels are already underway.



During ancient times, the Tamil Nadu coast was a bastion of maritime activities. The people of Tamil Nadu were enterprising mariners. A number of ports and shipyards were located on the Tamil Nadu coast and the Chola dynasty amassed an intimidating naval force. There were different types of ships that were built, like the Vangam, Kappal, Kalam, Naavai etc. The ancient Chola navy was largely based on trading vessels that were fitted with equipment that provided very little capability beyond boarding enemy ships. The image is an artist's impression of one such Chola ship that was modified to enable boarding. This rudimentary method of warfare at sea changed with time. The later day navy of the kingdoms of Tamil Nadu was a specialised force with custom-built ships for all types of combat.

Visakhapatnam

Boat building in ancient Andhra Pradesh was more about making simple floating devices, which remained the traditional craft there. However, its location on the coast led the boat builders to venture into construction of larger, seafaring vessels.

Presently, the state also has some ship repair centres in Narasapur, Nizamapattinam, Machilipattinam, Talarevu, Kakinada, Korangi, Yenam, Bandumurlanka, Perupalyam, Pudimadakka, and Bimillipattinam.

However, Visakhapatnam, referred to as the 'Maritime Gateway of Andhra Pradesh', is the only natural harbour on the east coast. The port is one of the busiest in India and its shipbuilding facility is one of the largest in the country.

Founded as the Scindia Shipyard in 1941, the Hindustan Shipyard Limited is the premier shipyard in Visakhapatnam. It has a dry dock, wet basin and repair sections for ships, submarines and other vessels.

This yard built independent India's first ship - MV Jalusha. The shipyard is upgrading it's technology, manpower and equipment to build naval platforms. Hindustan Shipyard has been acquired by the Ministry of Defence as another step towards focussing on future shipbuilding programmes. Visakhapatnam, thus, figures prominently in the Indian government's 'Make in India' strategy for the defence industry.

The best equipped shipyard of Visakhapatnam was renamed the Hindustan Shipyard Limited, post nationalisation in 1961. This photograph offers a spectacular aerial view of the 46.2 hectare area and infrastructure of the modern shipyard.

Shipbuilding in the Bay Area

Ancient Kalinga (modern day Odisha) had vibrant maritime linkages and, consequently extensive shipbuilding activities to supplement their flourishing trade. Traditionally, shipbuilding business began in the region around 17th century CE, but evolved into an industry in 18th century CE. Pipli gained prominence and constructed ships that displaced between 400 to 600 tonnes. Balasore was a shipbuilding centre that mainly built heavy vessels and also had artisans who were exceptionally good at repairing broken ships. Bharti Shipping proposes to construct a large shipyard in Dhamra, near Bhubaneshwar, which is envisaged to be one of the foremost in the country. Another shipbuilding firm, BCC Shipping and Ship Builders, is planning to build a very large ship-repair facility in Paradip, which is planned to be one of the largest in south-east Asia. The government of Odisha is fully supportive of all these initiatives towards enhancing maritime capacities. Once functional, the yard will provide shipbuilding and repair services for medium to large vessels. Bengal, in the undivided era, witnessed hectic maritime activity. In ancient times, people from Bengal would travel to Sri Lanka, Java, Sumatra and Japan for commercial requirements. The temples of Java have sculptures depicting Bengali shipbuilding. Kolkata is home to the oldest shipyard in the country today, the Garden Reach Shipbuilders and Engineers. The shipyard constructed the first indigenous patrol vessel, Ajay in 1961 and is slated to build three stealth frigates under Project 17A, amongst other naval projects.

This image is of a model, at the Odisha state museum, of a boat being built. According to historical evidence, maritime activity in Kalinga (Odisha), began before 350 BCE. Details of ship construction were recorded in the Sanskrit text, Yuktikalpataru. Historical records indicate that Raja Bhoja, the Malwa ruler, built many ships in this region from the local wood. Artefacts discovered from the Chilka lake prove that Golabai was the prominent shipbuilding yard in that region. In the 17th and 18th century CE, Pipli gained prominence as a shipbuilding yard.

Naval Shipbuilding

After independence, the Indian government commissioned studies to determine the kind of defence forces required by independent India. In 1948, physicist Professor Blackett's report made specific recommendations on the composition of the three armed forces based on the premise that the newly independent India would "wish to stand unaided in defence". Consequently, the British Admiralty was informed in 1948 that India did not want the Indian Navy to be an adjunct of the British Royal Navy.

In 1950, the Indian Navy recruited naval architects to design and build indigenous warships. In 1954, agreements were signed for acquisition of eight frigates from Britain. The Indian Navy began to pursue the case for an aircraft carrier in 1956 and augmented acquisition plans further, to meet the vast maritime needs of the country. In 1960, on the navy's recommendation, the government of India acquired Mazagon Docks Limited and approved in-principle for three frigates to be built there.

In 1962, a design cell was established in the Directorate of Naval Construction. It expanded in three years and became the Central Design Organisation of the Directorate of Naval Construction. A year later, the cell collaborated with Germany to build a new fleet tanker, Deepak. In two years, the cell successfully delivered a number of auxiliary vessels to the Indian Navy. Seaward defence boats and survey vessels attempted in the mid-sixties gave naval shipbuilders a better understanding of what it took to successfully build warships. The Indian Navy collaborated and sought technical consultation from globally renowned shipbuilders towards the indigenous frigate project.

British shipbuilder Yarrow was commissioned to provide technical assistance and deputed skilled personnel to assist the navy's Leander Frigate Project.

Photographed here is the commissioning of INS Nilgiri, the first indigenously built warship, on 03 June 1972 by the then Prime Minister Smt. Indira Gandhi. It was built at Mazagon Docks Limited, Mumbai in collaboration with Yarrow Shipbuilders, Glasgow. The collaboration involved designs of the Royal Navy's improved Type 12 general purpose frigate and technical and training support, for construction of six vessels. INS Nilgiri was India's first ever major warship built keel up. The ship was the lead ship in its class and was decommissioned in 1996.

The Mazagon Docks Limited in Mumbai is one of the largest shipbuilders in India. It also builds offshore platforms. After it was established in the 18th century, the shipyard passed through various owners like the P&O Lines and the British India Steam Navigation Company, before it was finally incorporated as a Public Limited Company in 1934 and taken over by the government in 1960. It is today the premier warship building yard in India having commenced warship building with the first Leander-class warships to corvette of the Khukri-class, stealth frigates of the Shivalik-class, destroyers of the Delhi-class and Kolkata-classes. After the Shishumar-class submarines, it is now building the Scorpene submarines for the Indian Navy. The shipyard has continuously innovated and improvised warship launch procedures to the latest 'pontoon assisted' launch method, as seen in the image of the launch of Visakhapatnam, the first of the Project 15B destroyers, to enhance the quantum of construction before the ship is launched.

Indigenous Warship Building Activity

India's first indigenous warship, the Leander-class frigate Nilgiri, was launched on 23 October 1968, and commissioned on 03 June 1972. It was followed by Himgiri, Udaygiri and Dunagiri. Vindhyagiri and Taragiri that followed were modified to carry the heavier Sea King helicopter instead of the Allouette on the first four frigates. The succesful Leander-class project was followed by the 'Project 16', Godavari-class frigates, comprising Godavari, Ganga and Gomati, all of which had modified Leander-class hull interfaced with Russian weapons, western and Indian sensors, and embarked two Sea King helicopters in hangars, as against one on the last two Leanders. The three 'Project 16' Godavari-class frigates were succeeded by three Brahmaputra-class frigates. These upgraded versions under 'Project 16A' were built at the GRSE in Kolkata (Calcutta). Brahmaputra was followed by Betwa and Beas, in 2005. The model of indigenously building the hull, acquiring propulsion machinery by outright purchase, integrating Russian weapons, Indian and western sensors and Indian communication, electronic warfare and combat management systems, has been unwaveringly adhered to. Progressively, the Indian Navy has succeeded in increasing the percentage of indigenous content in each follow-on project and has become a master in interfacing diverse elements into a composite warship. The first indigenous combat data systems produced by Bharat Electronics, integrating a wide variety of foreign and Indian weapons and sensors, was inducted on Betwa and has now become standard fit on all Indian Navy warships. In addition to the frigate programme, the need for smaller vessels of the corvette type with greater endurance and sea-keeping ability, resulted in the Khukri-class corvettes under 'Project 25'. Khukri was delivered in 1989, followed by Kuthar in 1990. MDL transferred drawings and shipbuilding material inputs to Garden Reach Shipbuilders and Engineers (GRSE, Kolkata) for building the next two corvettes. Kirpan was delivered in 1990 and Khanjar in 1991 by GRSE. Except for Russian weapon systems, all four corvettes were fitted with indigenous equipment. The four corvettes were followed by four more upgraded 'Project 25 A' corvettes. The first of the class, Kora, was commissioned on 10 August 1998 and the remaining three between 2001 and 2004.

In 1986, the Government of India approved the 'Project 15' Delhi-class destroyers to be built at Mazagon Dock Limited, Mumbai. Delhi, the first of the class, was commissioned on 15 November 1997, followed by Mysore on 02 June 1999 and Mumbai on 22 January 2001. The 'Project 15' hull was identified as the standard destroyer hull. The follow-on ships with considerably upgraded capabilities, called the Kolkata class under 'Project 15A', have begun to be inducted into the Indian Navy and construction of 'Project 15 B' follow-on destroyers has commenced. The 'Project 16' frigate programme having run its course, the Indian Navy's need for a multi-role stealth frigate programme led to the development of the 'Project -17' Shivalik class. The three ships of the class were built by Mazagon Dock Limited. The first ship, Shivalik, was commissioned on 29 April 2010 and Satpura and Sahyadri in 2011 and 2012 respectively. The 'Project 17' frigates are to be succeeded by seven, upgraded frigates of the 'Project 17A' class. Thus, the Indian Navy's intent to have a line of succession in frigate and destroyer class of ships is clearly laid down and is being followed in keeping with the Maritime Capability Perspective Plan 2012-2027.

The three P-15 A, Kolkata-class of destroyers are a follow-on of the very successful three P-15 Delhi-class destroyers with advanced sensors, long range weapons and two integral helicopters. The image (above) shows Prime Minister of India, Shri Narendra Modi, commissioning the first of class, INS Kolkata, in Mumbai. The three Shivalik-class multi-purpose stealth frigates (below left) are of the P-17 class frigates with indigenous combat management system and advanced signature management techniques. The lead ship of the class, INS Shivalik, was inducted into the Indian Navy in 2010. The outstanding success with the Shivalik-class design has encouraged the Indian Navy to progress plans to induct seven more ships of the P-17A follow-on frigates, to be built by MDL and GRSE, with further enhanced stealth characteristics. Similarly, the Indian Navy's clearly identified need for long endurance, low cost and lightly armed ships for patrolling, anti-piracy; and other lower-end-of-spectrum tasking was comprehensively met by the Saryu-class of naval offshore patrol vessels (below right), designed by Indian Navy designers and built by the Goa Shipyard Limited. These three projects would constitute the bulk of 'future navy' surface combatants.

INS KOLKATA

Submarine Building Programme

The Indian Navy sought to establish a submarine arm in 1959 and initially approached the British Royal Navy. However, when this did not fructify, in September 1965, India and USSR signed an accord that facilitated the acquisition of the first submarines and other ships from the erstwhile Soviet Union. The eight Soviet Foxtrot-class submarines of the 'Kalvari' and 'Vela' type were followed by ten 877 EKM of the Kilo-class diesel-electric submarines (Sindhughosh-class) all commissioned by 2000 into the Indian Navy. The navy decided to venture into submarine construction with the German shipyard Howaldtswerke-Deutsche Werft (HDW) in 1981. Two Shishumar-class diesel-electric submarines were built by HDW at Kiel and two more at Mazagon Dock Limited (MDL) under a technology transfer agreement. These submarines were commissioned between 1986 and 1994. Subsequent development of the Type 209 line and the indigenous

submarine construction programmes were halted due to financial controversy. The Scorpene project, with French company DCNS, restarted the programme at MDL, in October 2005. The six conventional submarines of the Scorpene class are being built in MDL under 'Project 75'. The first, Kalvari, was launched in April 2015 and all six boats are to be delivered to the navy by 2020. The navy's proposal to build the next line of submarines in India, under the 'Project 75I' is under examination by the government.

The Indian Navy entered the era of nuclear propulsion in 1988 with the induction of a leased nuclear attack submarine Chakra from the Soviet Union. The three year lease of the Chakra I lasted from 1988 to 1991. This cleared the decks for the lease of the Akula-class nuclear attack submarine Chakra in its new 'avatar' into the navy, which was commissioned on 04 Apr 2012. The Indian Navy, thus, got the opportunity to train personnel and operate nuclear-powered vessels, which provided the necessary confidence to man and maintain the Advanced Technology Vessel (ATV) Project which had begun to see fruition by early 2009. Arihant, the lead boat of the Arihant-class nuclear-powered ballistic missile submarines, was built at the Ship Building Centre in Visakhapatnam and is to be commissioned in 2016. Arihant is to be followed by the building of more nuclear-powered submarines indigenously, in follow-on projects.

INS Chakra, a 8,140-tonne nuclear submarine, which is seen in the image, was inducted into the Indian Navy on 04 April 2012. The Akula class nuclear-powered attack submarine is on lease from Russia. With the induction of Chakra, India became the sixth navy in the world to operate nuclear submarines. Manning, operating and maintaining Chakra has provided the Indian Navy with a strong foundation to operate indigenously built nuclear-powered submarines in the future.

Project 17A-class Frigate

The Project 17A-class frigates are a follow-on of the Project-17 Shivalik -class frigates of the Indian Navy. The experience gained in designing the Project-17 Shivalik-class frigates will be applied to the Project 17A, which will improve upon the Project 17 in terms of stealth characteristics, weapon and sensor package and data-bus. They are to have covered mooring deck and the number of antennae on the ship will be reduced by using a multi-functional phased array radar. The P-17A will also feature better roll stabilisation and a discreet visual profile. The weapon systems are to be flush deck mounted requiring vertical launch systems. Four ships are to be built at Mazagon Dock and three at GRSE. The construction of the first ship is expected to commence by early 2017 and is planned to be commissioned by 2022.

A Proactive and Progressive Blue Water Navy

The navy has been extremely proactive in harnessing the skills and knowledge gained by its designers and shipbuilders and is charting a course of 'Make in India' in keeping with the Maritime Capability Perspective Plan 2012-2027. This journey from 'blueprints' to 'blue waters' has been a result of focussed attention and unwavering commitment to indigenous shipbuilding. The Indian Navy and the government of India have worked in tandem to achieve success in the 'Make in India' strategy in warship building.

There were two Indian Navy ships with the name 'Vikrant'. The first Vikrant (R11), was a British built aircraft carrier that the Indian Navy operated between 1961 and 1997. After establishing strong fundamentals of carrier based aviation in the Indian Navy and a sterling performance in the 1971 war against Pakistan, it was decommissioned in 1997, and converted into a museum ship till 2012. The legendary ship was finally disposed off in 2014. This image shows the new avatar of Vikrant, the first indigenous aircraft carrier being built at the Cochin Shipyard Ltd. It is presently being fitted out and is expected to be commissioned in 2018. The ship is propelled by gas turbine engines and operates fighters with the STOBAR (Short Take Off Barrier Assisted Recovery) concept. Vikrant is likely to be followed by an even larger Indian built aircraft carrier, whose design is still being finalised by the Indian Navy design directorate.

VII - BATTLEFIELD: INDIAN OCEAN

Emergence of Navies from Maritime Campaigns in the Subcontinent

Ancient India - Trade, Territory and the Ocean

"Millenniums before Columbus sailed the Atlantic and Magellan crossed the Pacific, the Indian Ocean had become a thoroughfare of commercial and cultural traffic between the west coast of India and Babylon, as well as the Levant."

- Sardar K.M. Panikkar (1895-1963)

Since the dawn of civilisation, all ancient prominent sea routes passed through the Indian Ocean and consequently, it became one of the most important conduits for cultural, economic and scientific exchanges. This chapter will cover important wars, battles and skirmishes that were fought off the Indian coasts that embellished the rich tapestry of India's maritime history. It aims to provide a clear story of the development of the Indian Navy from a fledgling fleet that grew to become a formidable force with significant reach and combat power that the present day Indian Navy is, and its growth trajectory in the future. India, which is located strategically at the heart of the Indian Ocean, has by necessity developed a rich naval tradition in order to protect its maritime interests.

India's naval power actually emerged from the smaller kingdoms along the coast rather than the powerful, great empires in the Gangetic plains. These coastal powers had economies that were deeply dependent on the sea and hence, control of the waters became a vital security requirement for them. The south Indian kingdoms, collectively referred to as 'Tamilaham', or Tamil country, were foremost among these seafaring kingdoms.

Maritime Power from Tamilaham

During the medieval period, parts of the southern peninsular India were divided among the Chola, the Chera, the Pandya and the Pallava kingdoms. Attuned to seafaring, these kingdoms derived much of their wealth from trade with the Arab world, Europe and the south-east Asian regions and hence, invested considerable energy and capital in developing their maritime capabilities. The earliest reference to southern maritime power is found in the Buddhist text Mahavamsa, which details two campaigns launched by the Pallava King Narasimhavarman I against Sri Lanka.

The second invasion led to the subjugation of the island and the installation of the Sinhala prince Manavarma as its ruler. The Pallavas maintained extensive trade and cultural linkages, which are evident even today, with the nations of south-east Asia, which led to the creation of what the British historian Michael Wood described aptly as being "not an empire of the sword, but an empire of spirit".

The Indian Ocean has been the cauldron of maritime trade for many centuries. Mesopotamians, Egyptians, Arabs, Chinese and other south-east Asian civilisations and kingdoms have been trading since ancient times with India. Most of these trading relations were peaceful with commerce and exchange of culture as the primary aims of the interaction. But the scene changed with the arrival of European colonial powers in the Indian Ocean. The Portuguese arrived in India and aimed to establish their monopoly over trade in the Arabian Sea, which marked the beginning of furious battles and skirmishes for control over the trading routes in the Indian Ocean. This is an artistic illustration of one such battle for control.

Simhavishnu, a Pallava king who ruled in the 6th century CE, also launched naval expeditions to Sri Lanka and Malaya. The Vayalur inscriptions from Vasavasamudram describe the conquest of Lakshadweep islands by Rajasimha Pallava during the 8th century CE.

The Cheras were another significant naval power in the region, whose primary port Muziris, is repeatedly mentioned in the writings of Ptolemy, Pliny and the travel account 'Periplus of the Erythraean Sea', as one of the principal ports on the Indian peninsula. The Cheras had a blood feud with the Kadambas (Chalukya feudatories of Brahmin origin) of the Konkan coast, which led to a large-scale war. The Kadambas were helped by their allies, the Yavanas (a kingdom run by a clan believed

to have Greek roots). Ultimately, the Cheras under Senguttuvan's (one of the foremost Chera kings) leadership emerged victorious on land and at sea. The Chera navy under Senguttuvan also attempted to protect maritime trade from the pirates of the Malabar coast.

The Cholas were the primary naval power from amongst the kingdoms of the Tamil country. Having gained prominence initially around the 8th century CE, they built the first blue water navy in Indian history and established a stranglehold over the coasts till the advent of the Europeans. The Cholas marked their advent with the destruction of an entire Chera naval fleet at Kandalur Salai under Rajaraja Chola I. Beyond the subcontinent, the imperial Chola navy launched expeditions to several south-east Asian nations that succeeded in establishing Tamil-friendly regimes in Malaya and Srivijaya.

An inscription at the Vishnu temple at Ukkal (in Tamil Nadu) credits Rajaraja as being the lord of '12,000 islands of the sea', which according to journalist and author, John Keay, is a reference to Maldives.

His successor, Rajendra Chola, also launched a grand armada which gained ascendancy over the Nicobar Islands, the Malay Peninsula and Sumatra. Their naval superiority and military might also allowed the Cholas to subdue all threats from pirates in the Indian Ocean region and enabled flourishing trade. At its peak, the Chola sphere of influence extended all the way to present day Cambodia.

Battles in the Basin

Author Pramod Lal Paul mentions in his book, The Early History of Bengal, "The Bengal kings always maintained a fleet." Geographically, this region had an extensive network of navigable rivers and long coastlines. The kingdoms, which occupied the area, developed economies that were heavily reliant on water bodies.

The Mahavamsa provides an account of the conquest and colonisation of Sri Lanka by the Bengali prince Vijaya of Vanga (modern day West Bengal and Bangladesh). The island was christened 'Sinhala' after his dynasty. The Palas, who ruled over Bengal for several centuries, were also recognised as a naval power in their own right. Vaidyadeva, the minister and general of Kumarapala (the sixteenth Pala king), is credited with marshalling a strong navy in an effort to restore peace in the empire during a time of insurrection and rebellion. Inscriptions on a plate found at Kamauli (near Varanasi, Uttar Pradesh) commemorate his victory in a naval battle over a Varman king in southern Vanga, near the mouth of the Ganges.

The origin of Indian naval power can be traced to the small coastal kingdoms rather than the larger empires of the Gangetic plains. As the coastal states were heavily dependent on the seas for trade, transportation and other means of livelihood, they desired control over the coasts adjoining their lands. Amongst these coastal kingdoms, the Pallavas were the foremost in dominating the seas. They conquered Sri Lanka and Lakshadweep. Later, the Chera dynasty and the Cholas took the Pallava's maritime legacy to greater heights with the conquests of Sumatra and parts of Malaysia. The Chola influence was extended as far as Cambodia and even China. This image is an artistic impression of a battle for control over the adjoining sea during the Pallava reign.

INDIAN MARITIME DOCTRINE AND STRATEGY

To assist and guide wider thinking on maritime issues, in 2009, the Navy issued its 'Indian Maritime Doctrine' and has made it available to the public. It aims to provide a deep insight, understanding and common language related to the development and employment of maritime power. The maritime doctrine has been followed by a more specific maritime strategy. The Indian Navy promulgated its revised 'Indian Maritime Security Strategy' in 2015, which articulates 'what' and 'how' the Indian Navy will undertake missions to ensure India's maritime security, in concert with the other armed forces and maritime agencies. This, too, has been placed in the public domain.

Skirmishes in the North-West

The Sindhis and Punjabis on the north-western coast of India also had time-honoured maritime traditions. Although there is no record of the existence of any large-scale organised naval force in the area, references to their nautical skills go back to the time of invasion by Alexander in 326 BCE. The region was notorious for pirates, who writer PC Chakravarti describes, as the 'Vikings of Ancient India.'

An argument has been offered that it was their vicious raids that prevented nearby Persia from ever building cities along the coast. Pirates, inadvertently, have played a major role in the course of Indian history by attacking convoys of ships carrying gifts from the king of Sri Lanka to the Iraqi Governor, Al-Hajjaj. Al-Baladhuri, a 9th century CE Persian historian, states that Al-Hajjaj sent envoys to Dahir, the Sindhi king, demanding the return of the contents looted from the convoys.

The rulers of north-western coast of India did not have significant navies. These waters were mostly controlled by pirates. But historical documents of a later period show heavily armed boats with iron pikes and soldiers equipped with bows and naphtha grenades. This image is an artist's impression of the Jats battling the forces of Mahmud of Ghazni for control over the Indus waters.

Dahir's reply that the raid had been carried out by pirates over whom he had no control enraged Al-Hajjaj who sent the first Muslim army into India to punish the Sindhis. While the first expedition failed, the second one under Mohammad bin Qasim would come to be known as the first Islamic invasion of India and Raja Dahir became the last Hindu to rule over Sindh. Several centuries later, the Jats of Multan suffered a decisive naval defeat at the hands of Sultan Mahmud of Ghazni on the Indus. The Jats had previously assaulted Mahmud's army when they were returning from their expedition to Somnath and, as he left India for the last time, the Sultan attacked the Jats with a fleet of 1,400 boats armed with projecting iron pikes. These ingeniously devised ships were then packed with soldiers, equipped with bows and arrows, grenades and naphtha. The Jats, despite having a numerically superior force, were routed by the tactical genius of Mahmud.

The Saga of Shaista Khan

The Mughals believed in large standing armies and completely ignored the seas. With an organised naval force of around 3,000 ships, the imperial Mughal navy came to be established only around the time of Akbar. It had no capability to sail across the high seas and was confined to the Ganga-Brahmaputra delta in Bengal. This force was mostly used to defend the coast of Bengal, quell rebellions in the eastern provinces and to control piracy. The only notable naval warfare that the Mughals ever engaged in came under the command of Shaista Khan who launched a maritime campaign against the Arakanese (Burmese). He first captured the island of Sandwip with Portuguese help. The same year, he laid siege on Chittagong, the Arakan capital, with a fleet of over 300 ships at his disposal. The city soon fell and Shaista Khan consolidated Mughal hold over eastern India by crushing the forces of Kamarupa and Cooch Behar.

Portugal's Assent to Maritime Supremacy

With the desire to establish a direct trade route to India that bypassed the Arab world, the first to arrive on the sub-continental shores were the Portuguese. Their quest started with the Malabar coast. Although the Zamorin of Calicut approved the Portuguese request to carry out trade, hostilities soon erupted with Vasco da Gama butchering emissaries of the Zamorin over a customs dispute. Several Portuguese expeditions followed Vasco da Gama bearing a 'Papal Bull' (a diktat which contains the papal seal). The Portuguese attacked with heavy cannons mounted on their ships under the command of Pedro Alvares Cabral, who bombarded Calicut and retreated to the safety of Kochi, which was ruled by a rival king, Kolathiri Raja. Soon, Vasco da Gama returned with 15 large ships armed with heavy artillery.

In the ensuing Battle of Kochi, the Zamorin's forces suffered heavily, but managed to fend off the Portuguese. The Zamorin invoked the assistance of the Sultan of Egypt, and a fleet under the command of Mir Hussain arrived and made Diu its base. The Portuguese and Egyptian navies were evenly matched and the skirmish at Chaul was followed by another engagement off the coast of Diu. After being starved of supplies and the defection of Malik Aiyaz, the governor of Diu to the Portuguese side, the Egyptian fleet left the war zone. In all these wars, the Portuguese aligned with the kings of Kochi and Cannanore.

Shaista Khan was a 'subedar' and a general of Bengal. He foresaw a potent threat from the Arakan Kingdom (in modern Myanmar), which had developed a potent military and naval capability. He quickly began developing the Mughal navy, increasing its fleet to about 300 ships just in a year. He also made diplomatic efforts to win the support of the Dutch as well as Portuguese. This is an artist's impression of the assault of the island of Sandwip, under Arakanese control, by Shaista Khan led Mughal forces and the Dutch military. The Mughals overran the defences and conquered the island.

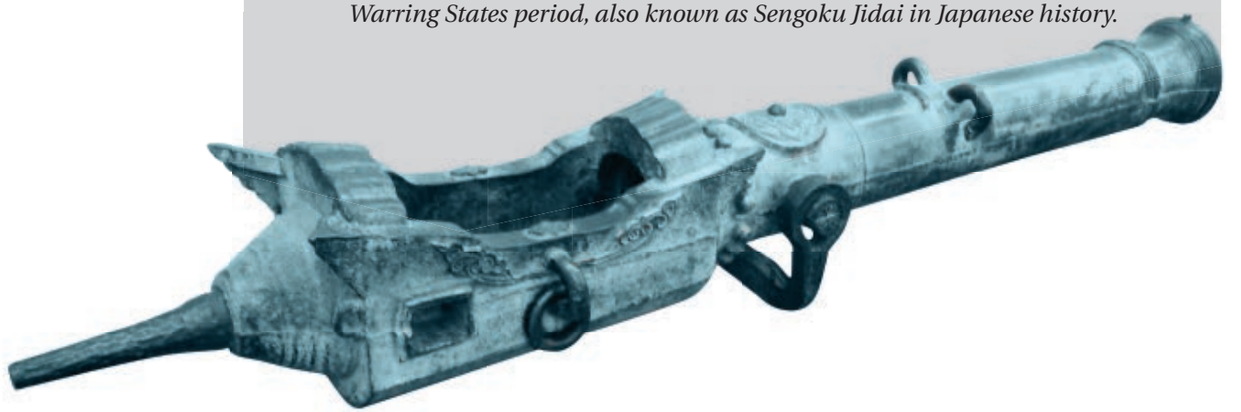
The Undefeated Kunjali Marakkars

Despite the withdrawal of his allies, the Zamorin's navy was able to prevent total Portuguese control of the seas for well over a century. This was due to Calicut's admirals, the Kunjali Marakkars. The Marakkars were originally Mappilla merchants from Kochi, who suffered huge losses due to the Portuguese disruption of sea trade. This family produced four hereditary admirals known by the title bestowed by the Zamorin – Kunjali or 'Ali the Beloved'.

The Kunjalis fought the Portuguese, but all resistance soon ended with the death of Kunjali IV. The Portuguese consolidated their power by capturing key ports in Goa, Sri Lanka, Malacca, Socotra and Hormuz, and continued to reign supreme over the entire region till the arrival of the British.

SWIVEL GUNS FROM SENGOKU JIDAI ERA OF JAPAN

As the name suggests, swivel guns would be equipped with a swivel, in order to facilitate smooth rotation. These guns added to the armoury of warships. Seen in this image is a breech-loading swivel gun thought to have been constructed in the 16th century CE in Portuguese Goa, India. Caliber: 95 mm, length: 2880 mm. It was exported to Japan and used in the time of Oda Nobunaga, a Japanese Samurai and warlord who initiated the unification of Japan near the end of the Warring States period, also known as Sengoku Jidai in Japanese history.



The Indian Ocean Becomes a 'British Lake'

While Portuguese monopoly over Indian Ocean trade was being challenged by the Dutch, the British arrived and commenced trade with the Mughal Empire. A Royal Charter of Queen Elizabeth I founded the Honourable Company of the Merchants Trading to the East Indies, better known as the East India Company, on 31 December 1600. A ship of the Company, Hector, with Captain Hawkins as the Commanding Officer, arrived in Surat and secured permission from the Mughal Emperor

An artist's impression of a naval battle fought off the Indian coast in which both sides attempt to board the other ship and defeat the embarked troops by hand to hand duel with swords and knives. Naval battles were often fought in this fashion during this period.

The Dutch arrived in India during the early 17th century. They set-up trading posts along the Indian coasts and, for a while, they controlled the Indian Ocean spice trade from parts of Malabar and Coromandel coasts. They conquered Sri Lanka from the Portuguese. They attacked but failed to conquer Goa, which was the capital of the Portuguese empire in India. In 1619 CE, the Dutch conquered Jakarta and re-named it Batavia, making it their capital. For the next few decades, Goa and Batavia fought each other relentlessly, representing Portuguese and Dutch seats of power in the East. This image is an artist's impression of one such naval battle between the two European powers.

Jahangir for trading facilities. The British sensed some Portuguese reservation and sent warships, Dragon, Hosiander, James and Solomon, under the overall command of Captain Thomas Best, which reached Swally, the roadstead of Surat, on 05 September 1612. The British regard this date as the foundation day of the Royal Indian Navy and the date of formation of the 'Indian Marine'. The Portuguese Viceroy of Goa attacked the British squadron on 29 November 1612 with a fleet of four galleons and 26 barks, armed with large guns, including some 42-pounders. The Portuguese ships could not reach the British ships anchored off the coast and had to attack with artillery from a distance. Captain Best sank four Portuguese galleons off the Surat coast losing two of his ships. The victory of the British so impressed the Mughal Governor of the province that he procured a treaty ratified by Emperor Jahangir according trading rights. After defeating the Portuguese, the British set-up factories and formed a fleet of small Indian craft, known as Ghurabs and Galivats at Surat, to protect seaborne commerce from the Portuguese. The second major battle with the Portuguese took place in 1614 CE in which the Indian Marine emerged victorious and, as a result, the East India Company was granted expanded trading rights by Emperor Jahangir. In the following year, Sir Thomas Roe was appointed Ambassador to the Mughal Courts by King James I.

Merchandise manufactured at the Surat factories started moving by sea to the west for trade with the Persian Gulf ports in 1618 CE. These battles would prove to be the beginning of the end of Portuguese dominance in the Indian Ocean. By the end of the 17th century CE, the British were firmly established in India with naval bases dotting the entire Indian coast from east to west, which led to them taking control of the whole of the Indian Ocean and India.

Maratha Resistance

The only real resistance that the British faced from a native power, came from the Marathas. The first iteration of the Maratha navy was commissioned by Shivaji to aid in his war with the Siddis (expert seamen descended from Abyssinian warrior slaves brought to India) of Janjira. It included 500 ships, divided into two fleets under the command of Mainaik Bhandari and Daulet Khan. The Siddi alliance with Aurangzeb enabled them to operate from Gujarat to Goa. The Siddis were first challenged in 1679 CE when Shivaji occupied Khanderi Island off the coast of Mumbai and was, in turn, attacked by a joint Anglo-Siddi fleet. The Marathas held

on to the island and signalled their emergence as a coastal power to be reckoned with. Shivaji died about a decade later, but the Maratha naval force grew from strength to strength. Under the command of Admiral Sidhoji Gujar, they captured two crucial sea forts, Swarnadurg and Vijaydurg. Admiral Kanhoji Angre, who succeeded him, turned the Maratha navy into a powerful force with Vijaydurg as its base. Recognising the rising threat, the Siddis, Mughals and Portuguese came together, to launch a naval attack on the Marathas. However, Kanhoji, a naval genius, emerged victorious and annexed Sagargad. By the beginning of the 18th century CE, Kanhoji Angre controlled the entire coast from Savantwadi to Mumbai. In 1717 CE, the British launched an assault on the Maratha stronghold Vijaydurg, but the attack failed due to the British ships not being able to access the shallow waters of the harbour and the defensive fortifications erected by the Marathas. The British then attacked Khanderi Island the following year. When that effort ended in a humiliating defeat as well, they joined hands with the Portuguese and attacked Kolaba.

Kanhoji's Maratha navy held off the combined European forces and even succeeded in inflicting heavy casualties. A similar fate befell a formidable Dutch fleet, which attempted to raid Vijaydurg in 1724 CE. In historian K.M. Panikkar's opinion, these victories ensured that Kanhoji's power on the Konkan coast was unchallenged. However, Kanhoji Angre died a few years later and the internecine conflict between the Marathas ended their naval supremacy within a couple of decades. In 1755 CE, the British, under Commodore James Watkins, connived with the Peshwa to jointly attack the Maratha statesman Fadnavis. The Maratha, fleet under Tulaji Angre, fled at the sight of the formidable fleet approaching Swarnadurg fort. The British then captured the fort, followed by Vijaydurg. Concurrent with the fall of the Maratha naval power, the French had arrived in India and were laying the ground to counter the British naval power.

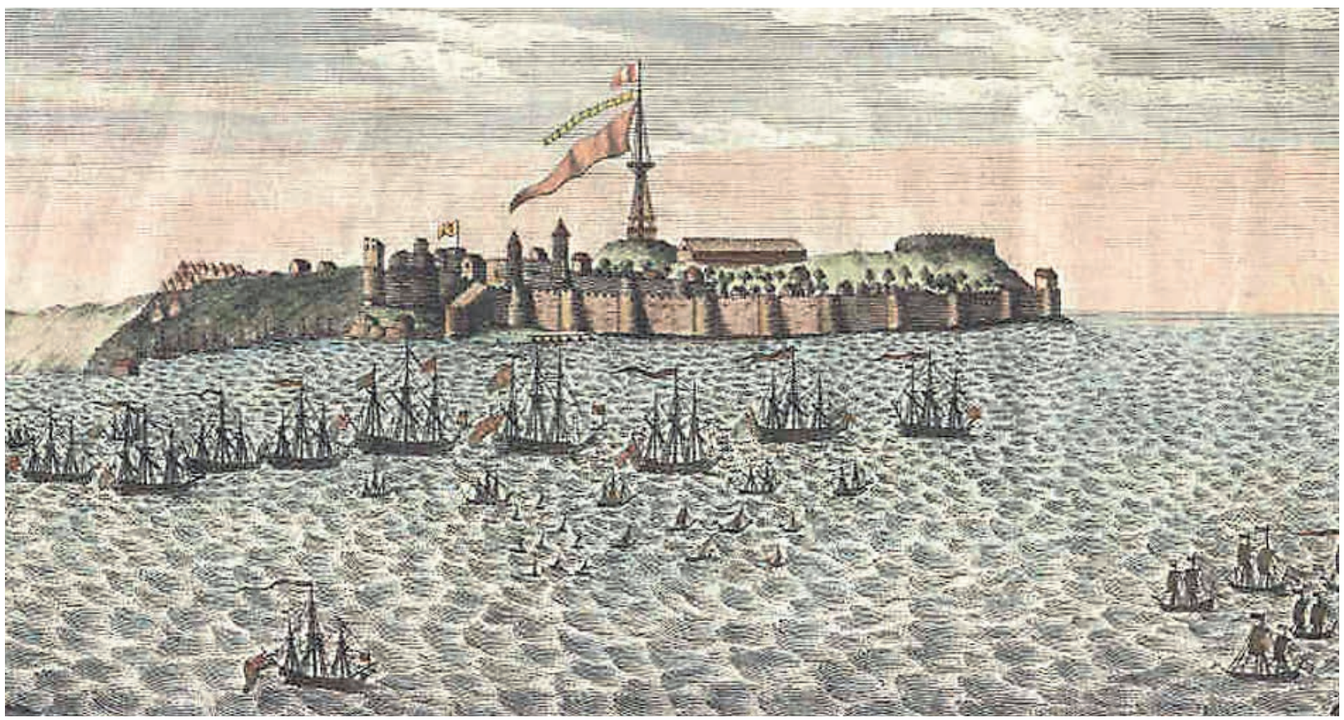
An artist's imaginative view of the assault of the Murud Janjira fort, in Raigad district of Maharashtra, originally occupied by the Siddis. The Murud Janjira fort is famous for having been the only fort on India's western coast that remained undefeated despite concerted efforts by the Dutch, Marathas, Peshwas and the British East India Company. Numerous wars were waged against the Siddis but the fort withstood all these attacks. Over 572 cannons, the biggest of them with a range of about 24 km and called Kalal Bangdi, defended the fort. Intricate knowledge of the adjoining coast and efficient use of the terrain during tidal periods gave the Siddis considerable tactical advantage in the defence of Murud.

The French Interlude

The French were the last of the European powers to arrive in India. After a few unsuccessful attempts, they finally established themselves at Puducherry.

The Dutch, who were at war with the French in Europe, attacked the port with a formidable fleet in 1693 CE. Francis Martin led a strong French resistance but had to surrender due to lack of resources. At the end of the war though, Puducherry was returned to the French who turned it into the seat of their government in India. When the war of the Austrian Succession broke out in Europe in 1740 CE, the Indian seas became a battle scene again. While a British fleet under Commodore Peyton set out to disrupt French shipping in the east, the French used the absence of the British fleet to lay siege on Chennai. While Chennai was returned to the British, a new French fleet under the command of d'Ache, carrying over 2,000 troops, arrived in the Bay of Bengal and engaged in battle with a British squadron under Admiral Pocock. The battle ultimately proved inconclusive. The two forces locked horns repeatedly, but in time the British developed a large number of ports to bank on and ended firmly on top. The last spark of French resistance came from Admiral comte Pierre André de Suffren de Saint Tropez. Suffren's brilliance at sea dented British naval dominance, but peace between England and France soon prevailed and the campaign was halted. French naval influence in the Indian Ocean was dismantled when Mauritius fell.

The British quickly consolidated their Indian Ocean holdings and all key choke points of the ocean passed on to British hands one after another, including Sri Lanka. The construction of the Suez Canal further strengthened the British. Their mastery over the Indian Ocean would not be challenged till 1941. As previously explained in this chapter, the prevailing maritime situation was aptly described by the doyen of Indian maritime history, Sardar K.M. Panikkar as, "the Indian Ocean became a British lake."



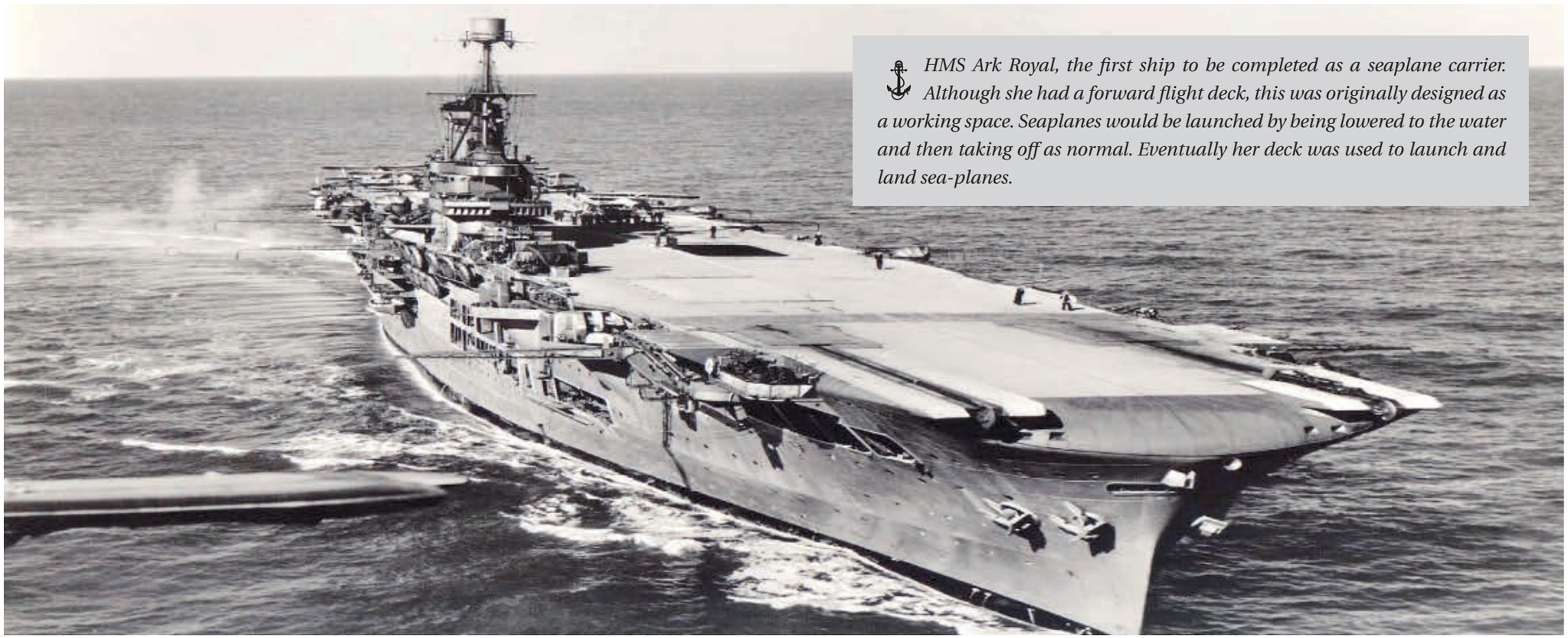
Fort of Geriah (also known as Vijaydurg), was the stronghold and the base of the Maratha admiral, Kanhoji Angre. He waged continuous battles against the Portuguese, French and British fleets. In turn, the colonial powers labelled him a pirate. The British finally stormed and took command of the Geriah, which marked the beginning of the end of the powerful Maratha Navy.

A painting by Pierre Julien Gilbert illustrating the naval battles at Grand Port off Mauritius, between the British and French navies. Though the British suffered severe losses at the beginning of the campaign, they subsequently bounced back and captured Isle de France to stamp their authority in the Indian Ocean.

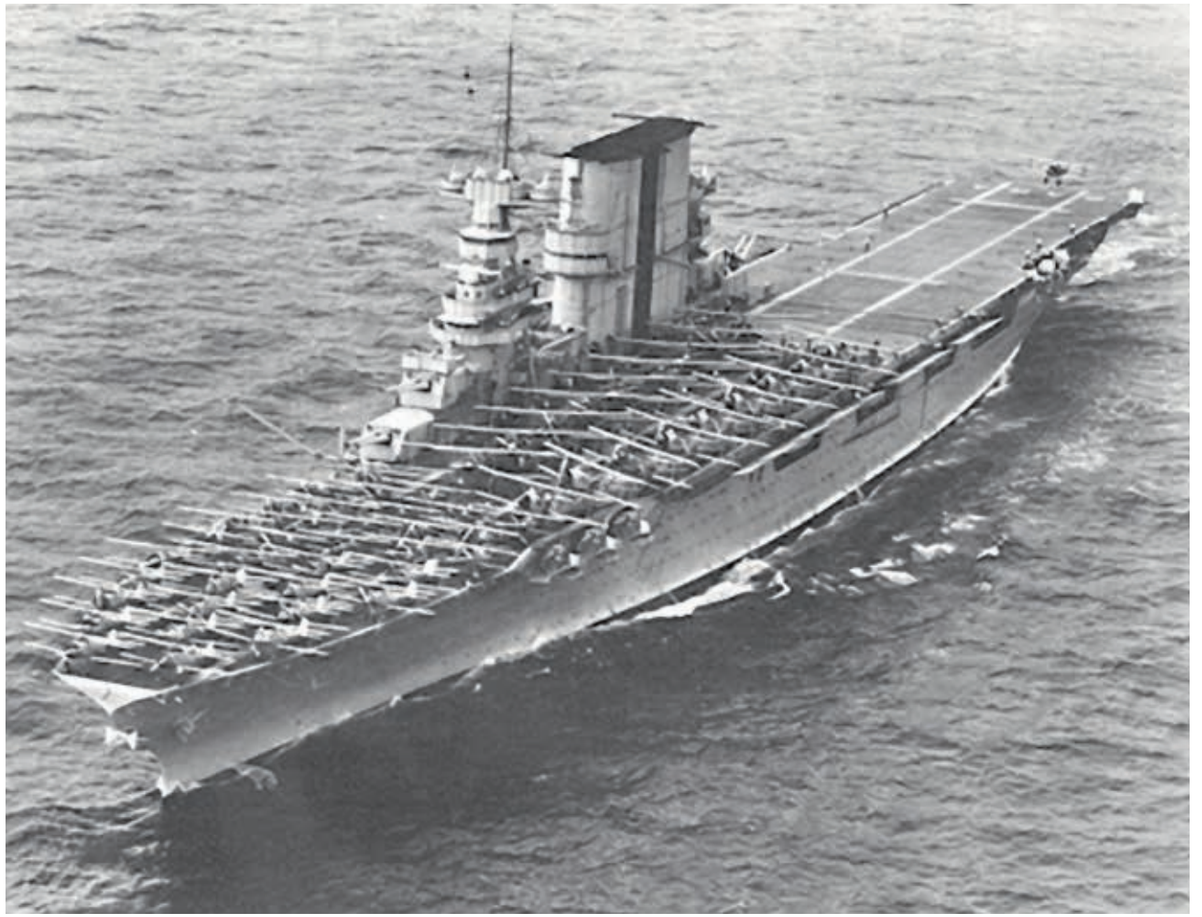
World War I

With the end of the East India Company rule in 1858 CE, all naval forces raised by the Company came under the direct control of the British Crown. After numerous changes, the naval service was christened as the Royal Indian Marine in 1892 CE. The Royal Indian Marine did not see any combat action during the war, but played a key role towards the Allied war effort by helping to transport men and supplies to the battlefront. The Marine also conducted mine-sweeping operations off the coast of Aden and Mumbai and helped monitor the waterways of Tigris and Euphrates. The Royal Indian Marine also served as auxiliary cruisers and several officers served at sea with the Royal Navy in many theatres of war. The Royal Indian Marine ships assisted the East Indies squadron in escorting convoys of troops from India to various war-zones. The first convoy with a complete Cavalry Division was sent to Marseilles from Mumbai. The Royal Indian Marine Ship Northbrook carried the Headquarters of the 79th Carnatic Infantry to Rangoon and the detachment 66th Punjabis to Port Blair, between 05 and 19 March, 1914 CE, where she relieved the RIMS Dufferin. The Dufferin and Hardinge were deployed in carrying out the remaining part of the Trooping Programme.

During the war, the only notable engagement in India's vicinity was when a lone German raider, the Emden, single-handedly sank 17 ships and effected the capture of a further six. Aside from the Emden, World War I did not really test Britain's control of the Indian Ocean. Even though the scale of the operation was small, the Royal Indian Marine played a crucial role in World War I.



HMS Ark Royal, the first ship to be completed as a seaplane carrier. Although she had a forward flight deck, this was originally designed as a working space. Seaplanes would be launched by being lowered to the water and then taking off as normal. Eventually her deck was used to launch and land sea-planes.



World War I heralded the development of the Dreadnought, submarines, convoying operations and the use of aircraft at sea. Innovations, achieving technological and informational superiority were seen to be the key to final victory and were attempted by both sides, led by Britain and Germany. The ASDIC (sonar) and the development of anti-submarine explosives thrown ahead / astern were provided to escort forces in an attempt to counter the ravaging U-boats of the German navy. But all these naval actions were largely absent in the Indian Ocean region. The Royal Indian Marine vessels were mainly deployed for ferrying troops and on mine-sweeping and convoying duties.

World War II

The British naval force in India, by now christened the Royal Indian Navy, played an active part in the Second World War. Ships bearing the HMIS (Her Majesty's Indian Ship) standard saw active duty in places as far-flung as the Irish Sea and the Mediterranean. Wartime dispatches suggested that as many as 40 German submarines were reported to be lurking in Indian waters. A pocket battleship was spotted approaching the Indian Ocean in 1939 CE. The Royal Indian Navy soon became critical to supporting the land war in Africa. It effected a virtual blockade of the Italian colonies in East Africa.

This campaign also featured the first instance of the Royal Indian Navy acting in concert with the Indian Army and the Air Force during the re-occupation of Berbera. Control of the Persian Gulf was crucial as majority of the allied oil supplies came from Iran and Iraq. During Operation 'Bishop', which was a part of this campaign, Indian naval officers, Lieutenant Krishnan and Engineer Lieutenant D Shankar of the Royal Indian Navy were awarded the Distinguished Service Cross. Later, Krishnan and Shankar both rose to the rank of Vice Admiral in the Indian Navy and played crucial roles in the transitional years of the service. As historian Admiral Sridharan records, "the Royal Indian Navy set a high standard of efficiency and obtained praise from the Royal Navy, a service never lavish with their praise." The Japanese navy began to make advances into the Indian Ocean region and the British battleship Prince of Wales and cruiser Repulse were sunk off the coast of Malaya in 1941. Hong Kong, Manila and Singapore soon fell to the Japanese. A fierce naval battle broke out in the Java Sea between an Allied fleet of Dutch, British and Australian ships and the Japanese. While the Allies suffered disastrous losses, around the same time, the HMIS Jumna distinguished itself in the evacuation of Batavia. Along with the HMAS (Her Majesty's Australian Ship) Yarra, Jumna escorted merchantmen out of the Sunda Strait to the Indian Ocean amidst incessant attacks from Japanese fighter planes and brought down five Japanese planes. With the sinking of the Yarra a few days later, Jumna became the only surviving ship from the Java Sea debacle.

This feat was recognised with a Distinguished Service Cross to the Gunnery Officer, Lieutenant Lecocq and Distinguished Service Medals to the Chief Ordnance Officer Cajetan Mascarenhas and Leading Seaman Khan Mohammad. With control over the Malacca Strait and the Java Sea, the Japanese took Burma with a powerful land and air campaign and by the middle of 1942, established complete mastery over the East Asian seas.

The following year, German U-Boats entered the fray and sank 46 allied ships along with 240,000 tons of cargo. One of the most notable engagements of the Royal Indian Navy featured the minesweeper HMIS Bengal. The ship scored a direct hit on a large Japanese ship, Hōkoku Maru's ammunition magazine and sank it. The ship's Commanding Officer, Lieutenant Commander Wilson was awarded the Distinguished Service Order, the Indian ratings, Leading Seaman Ismail Mohammed secured the Indian Distinguished Service Medal and Petty Officer Mohammed Ibrahim was awarded the Indian Order of Merit Second Class. The Royal Indian Navy assisted British endeavours to take back holdings in Burma. The ships Narbada and Jumna were crucial to this push.

Operations in the Indian Ocean by the allied forces and Royal Indian Marine saw the Japanese in full retreat and culminated with the re-occupation of Rangoon. Germany had surrendered by this time, but the war raged on in East Asia. The bombing of Hiroshima and Nagasaki crippled Japanese resistance and the war ended with Japan's unconditional surrender on 15 August 1945.

Convoys during World War II were mainly of two categories - the "operational" ones which were formed for specific missions like those run through the Mediterranean for the relief of Malta, and the "troop transportation" variety. Both of these convoy types had a strong naval escort. Ships of the Royal Indian Navy were extensively deployed in convoy escort duties both in the Mediterranean and the south-east Asian waters. It was during one such convoying operation that Royal Indian Marine ship HMIS Bengal got involved in combat against a more powerful and heavier Japanese destroyer and emerged victorious. The Commanding Officer and the gunnery sailors were honoured for the successful 'kill'.

Indian Navy – Initial Years

With independence came partition, and the nation's armed forces were divided between the two successor states of British India. Two thirds of the Royal Indian Navy's fleet remained with India while the balance went to Pakistan. With India becoming a Republic on 26 January 1950, the prefix 'Royal' was dropped and the 'Indian Navy' came into existence. The fleet had been severely depleted by the partition and the Indian Navy could no longer rely on the Royal Navy for support in ensuring India's naval defence.

The navy's new leadership urged, and succeeded in convincing, the government and obtained the necessary approvals to embark upon an expansion programme which was initially aimed at building a balanced fleet and, later, at augmenting its capabilities.

The early days of Indian naval aviation. This image shows Indian Navy Sea Hawks and Alizes lined up ashore when disembarked from Vikrant.

Junagadh Operation

Before plans for augmenting naval assets could be finalised, the Indian Navy was plunged into combat during the process of the integration of princely states into the Indian Union. Junagadh, a Hindu-majority state with a Muslim ruler, attempted to accede to Pakistan. In addition, Junagadh troops also crossed the border into the territories of Mangrol and Babariawad, which had joined India. The Indian government tasked the navy with landing troops, vehicles and equipment at Porbandar, Mangrol and Jaffarabad. The naval personnel then stayed on in the area until a civil administration was set up.

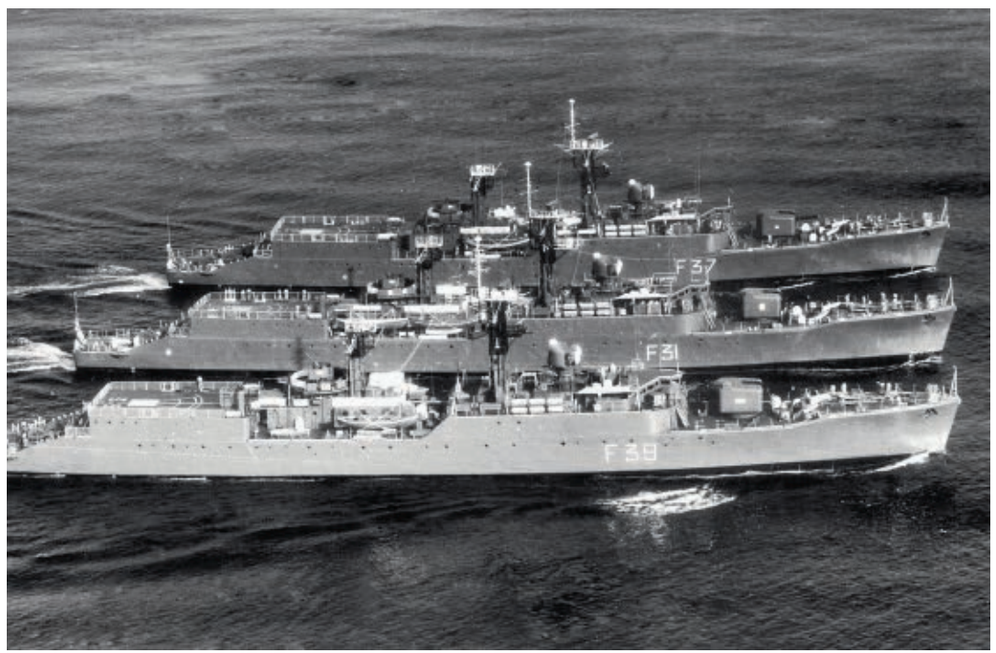
According to historian Rear Admiral Satyindra Singh, "Exercise Peace was the first major naval operation undertaken by independent India's navy. It demonstrated the Indian Navy's ability to function independent of its parent service, the Royal Navy." This was the first tri-services operation by independent India.

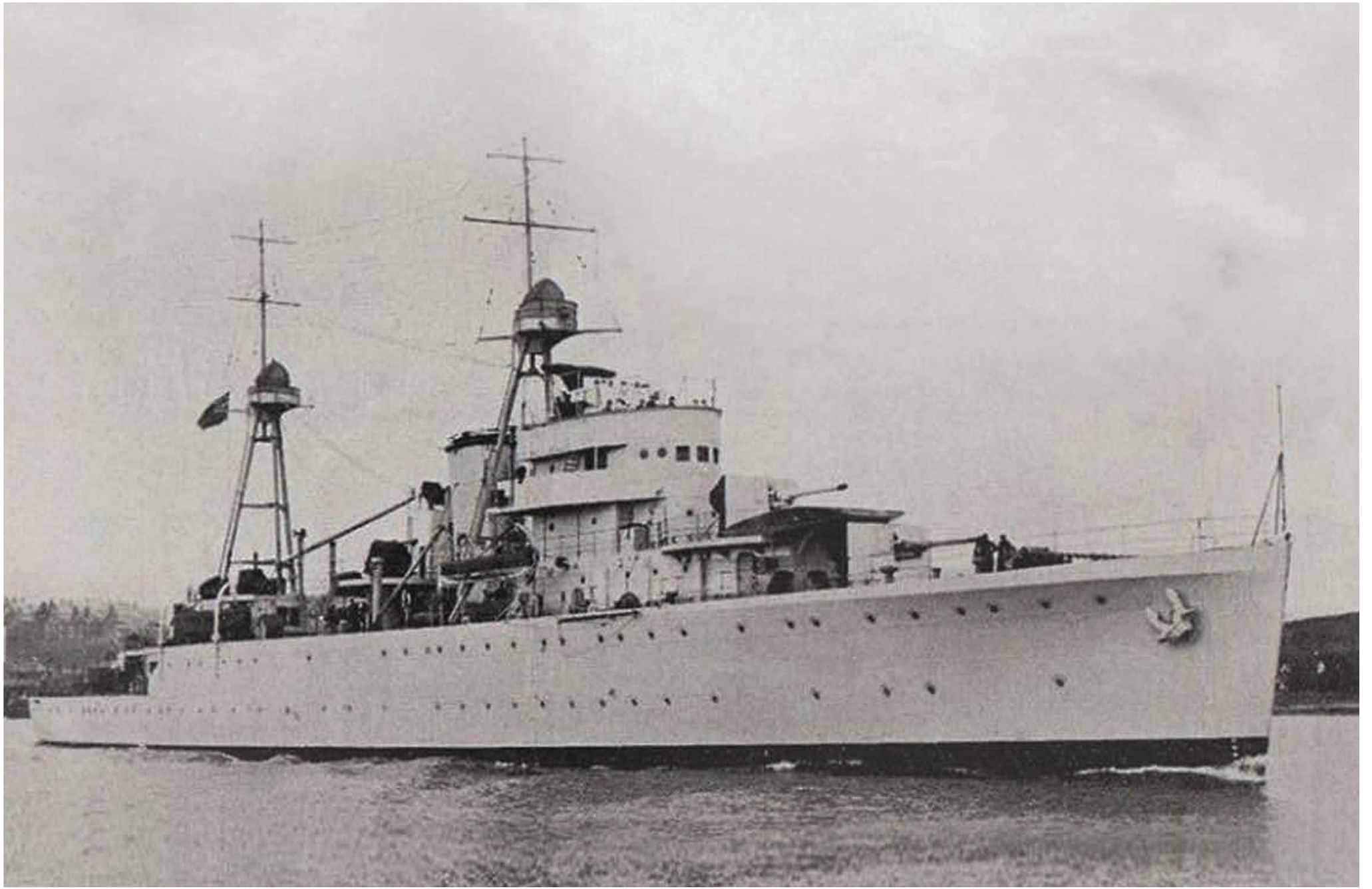
The naval leadership of the post independence era clearly understood that a strong and viable Maritime Reconnaissance (MR) effort was critical for success in the maritime domain. They succeeded in convincing the government to hand over MR tasking to the navy. On taking over the MR tasks from the Indian Air Force, this image shows Indian Navy Sea Hawks, Alizes and the Super Constellations in a naval air station.

Operation 'Vijay'

The Indian Navy saw its first joint operations with the Indian Army, during the liberation of Goa in 1961. It involved eviction of the Portuguese and recapture of all areas still under their occupation, including Goa, Diu and Anjadip island off Karwar. Indian naval ships were accordingly tasked with a wide variety of operations at sea so that when the Indian Army arrived, the Portuguese were adequately softened. Cruiser Delhi was tasked with supporting land operations in Diu, while frigates Betwa, Beas and sloop Cauvery imposed blockade of the key Potuguese port of Mormugao. Cruiser Mysore and frigate Trishul were to take over the island of Anjadip. The naval operation was carried out under the command of Rear Admiral B.S. Soman, Flag Officer Commanding Indian Fleet. Cruiser Delhi played a crucial role in the operation, with the Indian Army acknowledging its support in neutralising some pockets of resistance by naval gunfire support in Diu. At Mormugao, there were four Portuguese warships deployed, viz. NRP Afonso de Albuquerque, NRP Bartolomeu Dias, NRP Joao de Lisboa and NRP Goncalves Zarco, with few other patrol boats. But, only Albuquerque engaged in action as all the others fled the area even before the start of hostilities. Betwa and Beas quickly neutralised the Albuquerque, parts of which are still on display at the naval museum in Mumbai. The 17th Indian Army division, meanwhile, crossed the border and advanced towards Panaji. The Portuguese garrison surrendered two days after the operation began and the campaign came to an end. The lack of any tangible opposition from the Portuguese served to make the task easier. Sterner tests, however, lay in wait for the Indian Navy over the next decade.

The Portuguese naval sloop Afonso de Albuquerque (far right) was anchored off Goa harbour to engage Indian naval ships encountered, defend Goa harbour with its guns and provide radio communication link with Lisbon. Afonso was outnumbered and was disadvantaged since it had restricted maneuvering space. The two Indian frigates Beas and Betwa (right-below) and Trishul (right-top), deployed to gain access to the harbour, which led the Albuquerque to weigh anchor and leave harbour. The result of the one-sided battle was a foregone conclusion. The crew formally surrendered. The reign of Portugal had been overthrown by a joint operations by the Indian armed forces.





1965 Indo-Pak War

At the outbreak of hostilities in 1965, the majority of India's fleet was deployed in the Bay of Bengal and the ships were then quickly redeployed to the western seaboard. The aim of the Flag Officer Commanding Indian Fleet, Rear Admiral B.A. Samson, was to protect India's shipping and harbours by instituting 'defensive patrols and sweeping possible attack zones' in accordance with the government's directive to the navy to 'avoid confrontation at sea'. The Pakistani fleet succeeded in launching a sneak gun attack on the port of Dwarka, using a vessel disguised as a merchant ship. However, the offensive was ineffective, as most of the shells fired by the ship either did not explode or landed short of their targets.

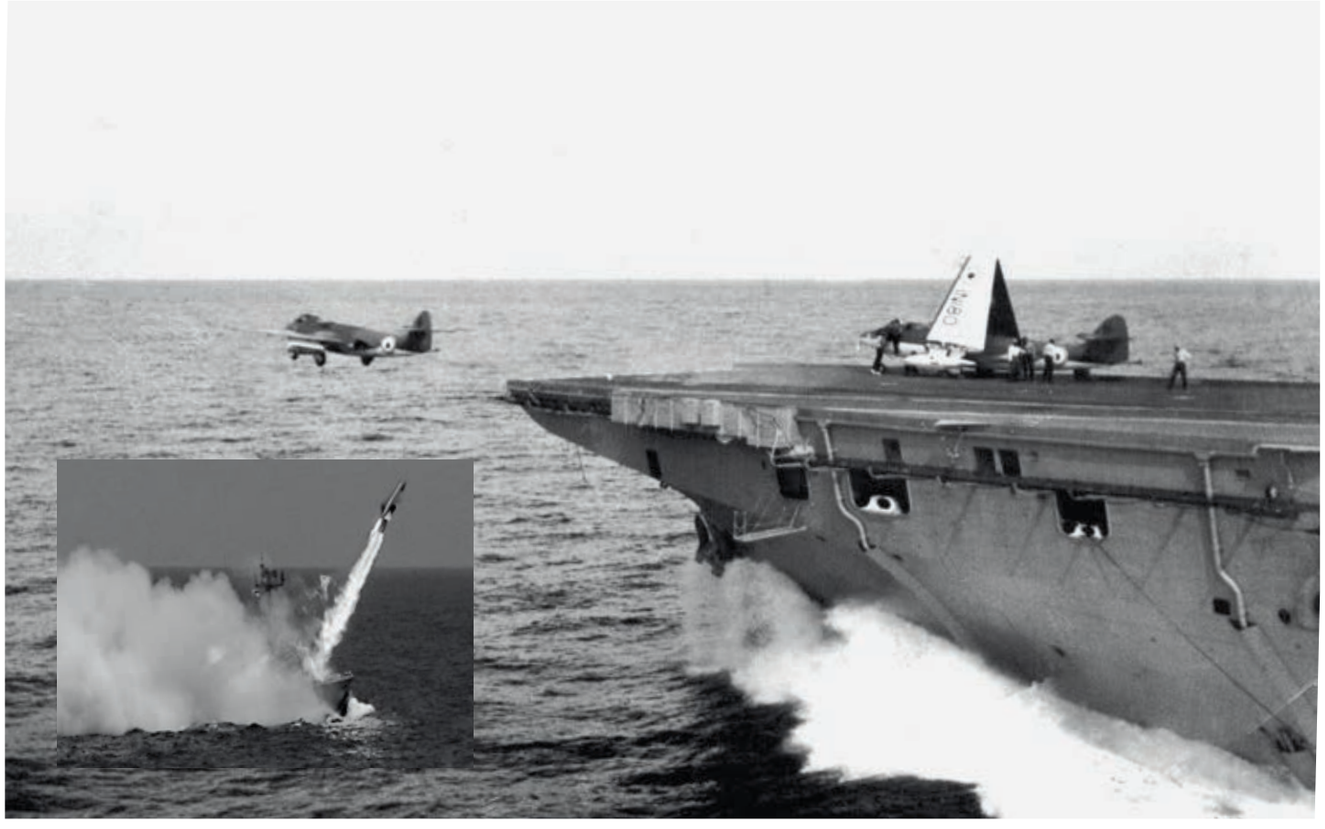
Throughout this war, the Indian Navy could only play a passive, defensive role of safeguarding Indian maritime interests while not engaging in direct confrontation or combat.

During the 1965 India-Pakistan war, the Fleet was largely concerned with the location of Pakistan submarine Ghazi. The navy was directed not to escalate war at sea, as the Indian government wished to restrict the conflict to land. The image shows anti-submarine warfare frigate Talwar seeking Ghazi in north Arabian Sea during the war, after the attack on the port of Dwarka.

Vikrant on the east coast and missile boats on the west coast impacted the conduct of war in the 1971 Indo-Pak war. The Eastern Fleet, with Vikrant as flagship, pounded the East Pakistani ports of Chittagong, Khulna, Chalna and Cox's Bazaar with the embarked air wing of Vikrant. An effective blockade of the East Pakistan coast forced over 90,000 Pak army troops to surrender. The image shows Vikrant launching a Sea Hawk during the campaign. The inset shows a missile boat launching an SSM on a target off the West Pakistani coast.

1971 Indo-Pak War

When Pakistan launched pre-emptive air strikes on several key military installations across northern India on 03 December 1971, the country plunged into war again. During the course of this war, the Indian Navy faced challenges at sea, on both coasts, of the kind it had not faced before and responded in a manner it had never before, either. On the same day, the Pakistani submarine Ghazi, seduced by a very effective information warfare campaign by the Indian Navy that led Pakistan Navy to believe aircraft carrier Vikrant was in Visakhapatnam harbour on the east coast of India, was lurking outside the harbour, waiting for an opportunity to attack Vikrant. It was, however, destroyed by a depth charge attack carried out by Rajput. A clock, later recovered from the sunken Ghazi, had stopped at the same time, clearly establishing the success of the depth charge attack. The sinking of Ghazi on the east coast was followed up by an innovative tactical use of missile boats recently inducted from USSR. A daring attack on the Pakistani port of Karachi by missile boats in an operation called 'Trident', on the night of 04 December 1971 sank Pakistani destroyer Khaibar, coastal minesweeper Muhafiz, and a merchant vessel MV Venus Challenger. The Western Fleet returned to action on the night of 08 and 09 December, and carried out a second successful missile strike on Karachi called Operation 'Python'. This, too, met with resounding success, with the majority of Pakistani oil depots at Karachi being destroyed along with three merchant ships anchored in the harbour. The Western Fleet now had complete control over the north Arabian Sea and Karachi ceased to function as a port. A reverse suffered by the Indian Navy in the Arabian Sea was the loss of frigate Khukri to a Pakistani submarine attack.



On the eastern front, Sea Hawks and Alizé aircraft operating from aircraft carrier Vikrant pounded the ports of Chittagong, Khulna, Chalna and Cox's Bazaar. A blockade was imposed across the entire East Pakistan coast by the Eastern Fleet, which prevented any Pakistan Army units from escaping by sea as well as prevented any re-supplying of the Pakistan Army troops from the sea. The Indian Army swiftly reached Dhaka and over 90,000 Pakistani forces in Bangladesh surrendered to Indian forces, before the US Seventh Fleet Task Force and the shadowing Soviet Union naval forces could enter the theatre of war.

Following the war, 04 December was declared as Navy Day to commemorate the Navy's historic missile strikes on Karachi and the pivotal role played by the Indian Navy in the war.

Newstime
Indian navy ready for a strategic role
Indian navy ready

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Kargil Conflict: Operation 'Vijay'

Despite Kargil being primarily a hinterland conflict, the Indian Navy played a significant role. As soon as information of an 'infiltration' was assessed as an 'armed intrusion' on 20 May 1999, the three Naval Commands were directed to "enhance security measures" to prevent any action by Pakistan Navy.

Forward deployment of quick reaction forces in addition to enhancing aerial surveillance were the immediate measures instituted, to prevent any sneak attacks along the west coast, ensure security of offshore assets, counter any enemy pre-emptive actions and monitor movements of Pakistani naval forces in the north Arabian Sea.

Coast Guard ships and aircraft were brought under naval command to augment coastal surveillance and defence of offshore assets. Units of the Eastern Fleet were ordered to join the Western Fleet in the north Arabian Sea by early June 1999.

Pakistan naval headquarters also put its ships on 'full alert' but directed them to "to keep well clear of the Indian Navy units". By the second week of June 1999, joint exercises of the Western and Eastern Fleets commenced under Operation 'Vijay'.

Pakistan Navy dispersed ships away from Karachi to its ports on the Makran coast, and began to escort tankers bringing oil from the Persian Gulf. On 30 June 1999, media reports indicated movement of Indian Army's amphibious brigade embarking on the Indian Navy's landing ships, even as the Indian Army and Air Force made major gains in evicting Pakistani intruders from the icy heights of Kargil. By 02 July 1999, Pakistan began to seek a way out of their misadventure and, on 04 July 1999, declared unconditional withdrawal from Kargil.

The Indian Navy, having applied strategic leverage and successfully executing its operational tasks, scaled down its deployment to normal peacetime regime. Operation 'Vijay' demonstrated all elements of maritime power including poise, forward presence, manoeuver, deterrence and withdrawal.

Operation 'Talwar' was a classical application of maritime power to send a strategic message to the recalcitrant enemy. The Indian Navy enhanced combat power in the theatre by quickly redeploying Eastern Fleet to the western seaboard, which was picked up by the media (inset image), demonstrated firm intent by posing a potent threat off the entire Makran coast in the air, on the surface and underwater, deterred expansion of the conflict by sustained signalling and finally, when all its aims were achieved, executed a quick withdrawal. The image shows elements of the two fleets of the Indian Navy deployed in a 'forward ready' posture off the north Arabian Sea.

Operation 'Parakram'

On 13 December 2001, terrorists, aided and abetted by Pakistan, attacked the Indian Parliament, leading to a sustained military stand-off on the International Border between India and Pakistan. This 'high alert' status lasted for ten months till October 2002, in which period the Indian armed forces maintained a robust coercive posture against Paksitan, for its sponsorship of terrorism. Pakistan committed to not let any part of the territory under its control be used by terrorists for acts against India.

Operation 'Parakram' saw the Indian Navy fully mobilised for war over a compressed time frame. Ships of the Western Fleet, deployed as a Carrier Battle Group, were deployed across the northern Arabian Sea in a dominating posture and exercised control over the 'region of operational interest' for the better part of the year. Ships of the Eastern Fleet crossed coast to supplement the combat power on the Western seaboard.

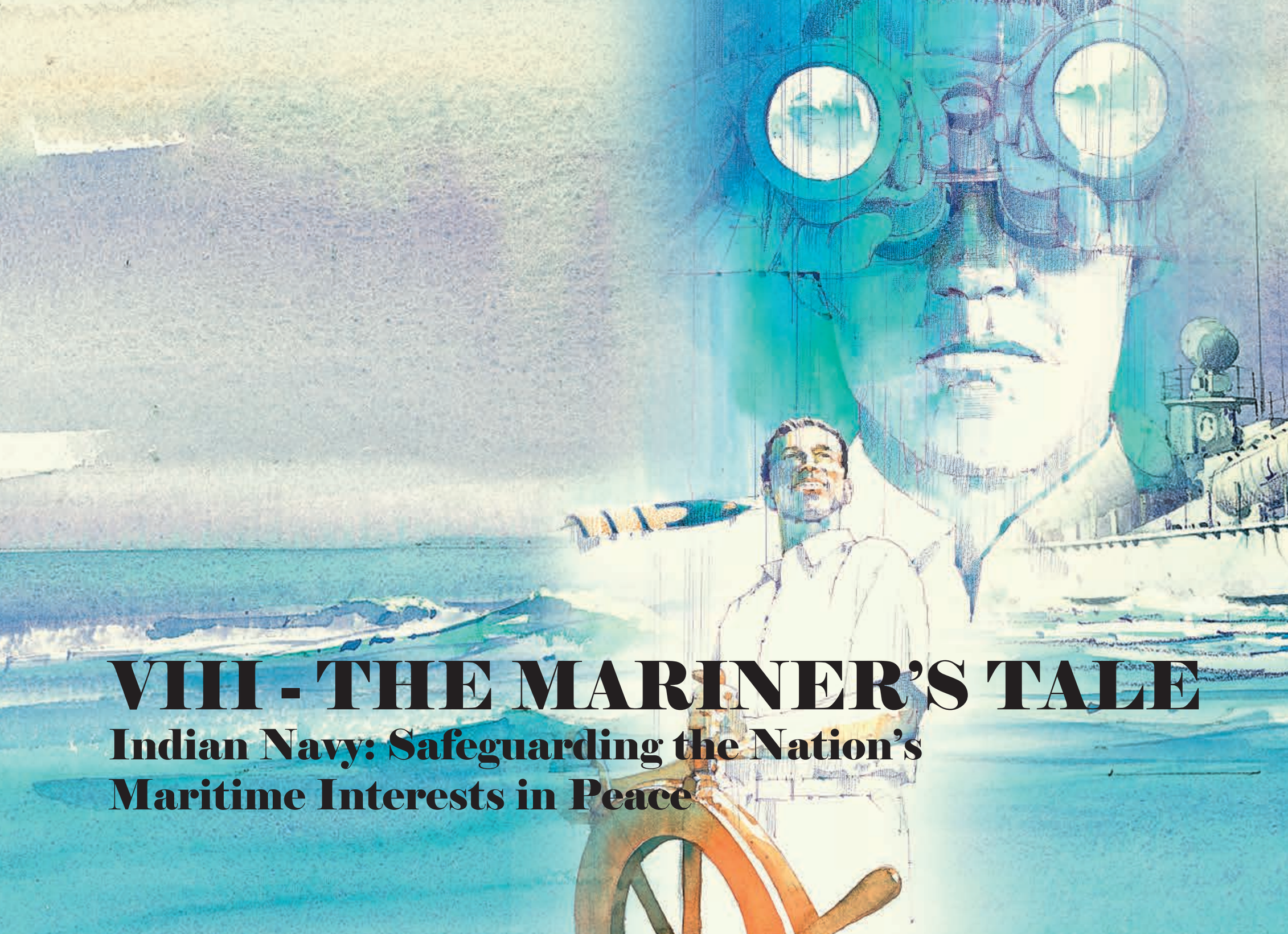
Operation 'Parakram' demonstrated the primacy of the navy in executing an aggressive foreign policy through calibrated presence and tactical manoeuvring of the fleet. It highlighted the ability of fleets to remain poised 'in station' for an extended period, signalling resolve and strength. And, pointedly, the sign for de-escalation was signalled by recalling the fleets back to harbour, which was effected in 48 hours.

Peace and stability in the Indian Ocean region is of prime national interest and the Indian Navy has been mandated, and is being equipped, to meet any threat to national security that may emerge from the sea. The force is undergoing a massive upgrading in combat power and is on course to induct several new platforms including ships, conventional and nuclear propelled submarines, fixed and rotary wing, and manned and unmanned aircraft as indicated in the Maritime Capability Perspective Plan 2012-2027. To deter any aggression and to defeat it decisively should deterrence fail, remains the sine qua non of the Indian Navy.

The modern Indian Navy is being built around potent aircraft carrier battle groups supported by fully networked elements of surveillance and combat platforms. Aircraft carrier Vikramaditya, with an embarked air wing comprising the potent Mig 29K fighters, Ka 31 AEW helicopters and ASuW / ASW Seaking 42B helicopters, is one such new addition to the modern Indian Navy.

BOEING P-8I

The Indian Navy acquired Boeing P-8I long range maritime reconnaissance and anti-submarine warfare aircraft to enhance maritime surveillance and ASW / ASuW capability. The P-8I is the Indian Navy's version of the similar aircraft, the P8A, inducted by the US Navy. The P-8I is used for anti-surface warfare, anti-submarine warfare, surveillance and large-area maritime operations in both, high seas and the littorals.



VIII - THE MARINER'S TALE

Indian Navy: Safeguarding the Nation's Maritime Interests in Peace

K91

The Ripples of History

The Indian subcontinent is credited to have produced some of the earliest navies in the world. The Chola, Satavahana, Maurya, Gupta, Pala, Vijayanagara, Pandya, Kalinga, Maratha and Zamorin empires had significant naval presence. Of these, the Cholas in particular had at their command a highly competent navy in their heydays during the period 500 - 1100 CE.

After the fall of the Cholas, a series of Islamic invaders from across the north-west borders unleashed a series of land assaults. For the Indian subcontinent as a whole, this was a violent and politically volatile period which, in turn, triggered the decline of the traditionally mighty indigenous navies. Gradually, the Mughals wrested control over most of India, leaving small pockets of resistance by the Zamorins, the Marathas and a few other smaller kingdoms. The resultant vacuum at sea led to the gradual emergence of Arab merchants with their own fleet as the prime mercantile trading force in the Indian Ocean though the transition was non-violent. Over the next few centuries, a predominantly peaceful maritime culture and commerce flourished across the Indian Ocean region. Meanwhile in Europe, the Portuguese, British, Dutch and French were pioneering blue water navies. The age of discovery was at its peak, and these European empires 'discovered' new sea routes, unexplored lands and laid the foundation for modern maritime principles. The story of the modern Indian Navy begins with the arrival of the European powers at the Gujarat coast in the early 17th century. The battles, politics and priorities of the navies of that era set the key context for India's naval development.

Some of the greatest navies from early history to the medieval period came from the dynasties that ruled peninsular India. They realised the strategic importance of strong and well organised navies for their economic and political well being. The Chola, Satavahana, Maurya, Gupta, Pala, Vijayanagara, Pandya, Kalinga, Maratha and Zamorin empires had notable navies. The Cholas had an extremely efficient navy during the height of their empire between 500 – 1100 CE. This image is an artist's impression of a Chola navy ship.

Commander-in-Chief of British India, Robert Clive, became the first British Governor of Bengal, and he installed Mir Jafar as the Nawab of Bengal. This image is a painting showing the Nawab of Bengal receiving the Governor Robert Clive.

The Ascendance of the British: The End of Portuguese Monopoly

By the beginning of 17th century CE, the Portuguese had established monopoly over trade in the Indian Ocean. They demanded exorbitant rates for the goods they bought from India and sold in Britain and other European countries. During this time, two English enterprises, The Company of Merchant Adventurers and the East India Company, were desperate to find routes to India with an eye on a share of the spice trade. The series of events that followed led to the rapid fall of the Portuguese and the rise of the British East India Company. The Portuguese were cognisant of quick routes from Europe to the west coast of India and their monopolistic interests prevailed on them to not share the route information with the British. In 1596 CE, a Dutch traveller by the name of Jan Huygen van Linschoten published a book called 'Itinerario', which was the first book in Europe to contain detailed charts of navigable sea routes to India. During his stay in Goa, van Linschoten had served as the secretary to the Portuguese Viceroy and used the trust he had won to hack some navigational charts contained in 'Itinerario'. These charts were meticulous and carried safe navigation data covering islands, currents, sandbanks and coastal areas. 'Itinerario' and van Linschoten's later publications were key reasons for the formation of the Dutch East India Company in 1602 CE. In 1608 CE, Captain William Hawkins led the first voyage of the British East India Company to India. He reached Surat on 24 August 1608, and approached the Mughal Emperor Jahangir, carrying 25,000 pieces of gold and a personal letter from King James I, seeking trading concessions.

Despite persisting for two years, these concessions were not granted and he returned to Britain, empty handed. The next British envoy was similarly unable to obtain any trade treaty. On 05 September 1612, Thomas Best arrived at Surat. A fortnight later, he sent an emissary to the Emperor seeking permission to establish a factory at Surat. A week later, he was informed that two of his men had been arrested by the Mughal Governor of Gujarat. Hearing this, the Captain detained a ship belonging to the Mughal Governor in order to exchange it for the release of his men. During the negotiations with the Governor, he was able to obtain a treaty that allowed trading privileges subject to ratification by Emperor Jahangir.

The Battle of Swally: Genesis of the Indian Navy

On 28 November 1612, four large Portuguese galleons arrived and positioned themselves between the English vessels and the town of Surat which precipitated a skirmish. The Portuguese and the British began to engage in sporadic cannon attacks and the standoff continued for about a week. After this Battle of Swally, Captain Best received the treaty ratified by the Mughal Emperor. Once he had established a factory at Surat in accordance with the treaty, Best placed a small fleet of grabs and galivats to protect British trade and sailed south to Sri Lanka.

The small fleet - which embarked Europeans, lascars and marines, and local Hindu Konkan fishermen as crew - was called 'The Indian Marine', a precursor to today's Indian Navy. The Indian Marine was employed to convoy ships carrying goods in the Gulf of Khambhat and the rivers Tapti and Narmada. The Battle of Swally had a decisive impact on both - the Mughals and the British East India Company. Emperor Jahangir held a grudge against the Portuguese since the latter often harassed pilgrims heading for Haj from Surat. On learning of the treaty between the British and the Mughals, the Portuguese tried to intimidate the Emperor who had little control over the west coast. Emperor Jahangir's decision to favour the British for trade by sea sounded the death knell to Portuguese monopoly in the Indian Ocean. The East India Company realised that the Portuguese were willing to resort to battle and that they would need more fighting vessels to conduct trade safely. Before the end of the year, the Company sent four more of their ships to join the ranks of the Indian Marine. These ships, under Captain Nicholas Downton, reached Surat in 1614 CE and immediately, with the help of the small Indian Marine, defeated the Portuguese ships that had followed them into Swally.

The naval Battle of Swally took place on 29–30 November 1612 off the coast of Suvali (Swally), near the city of Surat, Gujarat. The battle saw four British East India Company galleons vanquish a Portuguese fleet. This relatively small naval battle is historically important as it marked the beginning of the end of Portugal's trade monopoly over India and the beginning of the ascent of the British East India Company's presence in India. This battle also led to the British establishing the Royal Indian Marine, which was the precursor to the present day Indian Navy.

The Indian Marine and the Bombay Marine (1613 to 1858 CE)

Between 1613 and 1858 CE, the East India Company used the Indian Marine to consolidate their monopoly in the Indian Ocean, and to help establish British control over the Indian subcontinent. During this period, the Indian Marine fought the Marathas, the Portuguese, the Siddis, the Joasmis and the Kingdom of Burma. Among all these engagements, a few stand out for having extraordinary impact on the birth of the Indian Navy.

In 1662 CE, the Portuguese ceded Mumbai to the British due to the marriage between Charles II of Britain and Catherine of Braganza. Charles II found it hard to govern Mumbai from Britain and it was leased to the East India Company in 1668 CE for a rent of £10 a year. By 1685 CE, the seat of the East Indian Company was shifted from Surat to Mumbai and the Indian Marine was accordingly renamed the 'Bombay Marine'.

The Rising British Dominance

From the time of its inception, the Bombay Marine indulged in combat against the Marathas and the Siddis, and also participated in the Anglo-Burmese Wars. While the Bombay Marine recruited Indian sailors, they did not have any commissioned Indian officer. In February 1756, the Bombay Marine supported the capture of Vijaydurg by Admiral Watson and Colonel Clive. It was during this time that the Portuguese power in India was attenuated and the Portuguese holdings around Mumbai captured. Meanwhile, in the war against France, the Bombay Marine acted against a sizeable number of French pirates and contributed to the capture of Sri Lanka and Mauritius from the French.

The Bombay Marine also saw action against the Dutch East Indies. In recognition of its sustained superlative contribution, the Bombay Marine was renamed the Indian Navy (Her Majesty's Indian Navy) in 1830 CE. The first half of the 19th century saw the British launching a number of battles in Indian waters to consolidate their authority and a significant number of those succeeded with the support of the then Indian Navy.

MUMBAI DOCKYARD

The Mumbai dockyard was established in 1735 by the British East India Company, which brought in shipwrights from their base at Surat in order to construct vessels using Malabar teak. One of their Parsi shipwrights, Lovji Nusserwanjee Wadia, was (along with several generations of his descendants) a key figure in the success of the shipyard. Lovji Wadia secured contracts with the British East India Company to build ships and docks in Mumbai in 1736. This, and subsequent efforts, would result in Mumbai becoming a strategic port for the British colonial undertakings in Asia. The 'Bombay drydock', the first drydock in Asia, was built by Lovji and his brother Sorabji in 1750. The Mumbai dockyard, after independence in 1947, was handed over to the Indian Navy and its heritage remains preserved in the present day Naval Dockyard. Today the Yard serves as the premier repair yard of the Indian Navy. It employs 10,000 workers (mostly civilians) overseen by an Admiral Superintendent. This is the image of the main avenue and the heritage building housing the office of the Admiral Superintendent, Naval Dockyard, Mumbai.

First War of Independence

When the First War of Independence broke out in 1857 CE, it shook the British authorities considerably. The Indian Navy's officers and marines were called upon to serve the East India Company in various capacities on land, in order to quell the rebellious forces and to regain control. The Indian Navy also supplied detachments to the Bengal Government, in June and July of 1857. The navy's men were used in garrisoning or in direct operations. Eventually, 78 officers and 1,740 men of the Indian Navy were employed ashore, along with a number of trained merchant mariners, recruited from various vessels. As a result of the First War of Independence, the East India Company's Indian holdings were transferred to the British Crown.

This is an illustration of the eventful period of the First War of Independence, depicting conduct of military operations by the 1st Bengal Fusiliers marching down from Dugshai, led by George F Atkinson. At the outbreak of the Indian uprising, the order to march to Delhi had been given from Shimla and the directive was carried to the Regiment at Dugshai by Major George Ogle Jacob seen in the artwork. Major Jacob was killed in action in Delhi on 14 September 1857. Soldiers can be seen wearing campaign dress of grey shirt and white coloured forage caps. This uprising led to the dissolution of the East India Company in 1858 CE, whereupon the fledgling navy was placed under the command of the British government of India and formally named 'Her Majesty's Indian Navy'.

The Royal Indian Marine in World War I

In 1863 CE, the Royal Indian Navy was downgraded to non-combatant status. However, due to its contribution to the British cause during the later battles in the region, it was once again given the title of 'Royal Indian Marine' in 1892 CE. By 1905 CE, it was used for a variety of tasks from surveillance to policing and revenue duties throughout the Indian subcontinent. During World War I, the Royal Indian Marine was involved in minesweeping, patrolling and carrying troops and war stores. It saw combat action off the coasts of Mumbai and Aden, and in the regions of modern day Iraq, Egypt and East Africa.

The Royal Indian Marine took an active part in the World War I between 1914 and 1918 CE. By the time the war ended, the Royal Indian Marine had transported or escorted 13,02,394 men and 36,91,836 tonnes of stores to the different war theatres in the Indian Ocean and the Mediterranean Sea region. During the war, the Royal Indian Marines suffered 330 casualties and 80 personnel were decorated with gallantry awards by the British Crown. This picture of St. Thomas' Cathedral in Mumbai, with images of the memorial tablet of officers and men of the RIM killed in action in World War I and a tombstone of Royal Navy officer Captain George Nicholas Hardinge, Captain of the ship San Fiorengo, killed in action on 08 March 1808. It is Britain's tribute to its personnel martyred in consolidation of its colonies and World War I.

Between two World Wars

In 1934 CE, the Royal Indian Marine was renamed as the 'Royal Indian Navy'. The 1930s were dark times in Europe. Tensions were high after World War I and the Anglo-German accord was virtually annulled. Britain expected war with Germany and, as a pre-emptive measure, the Royal Indian Navy was expanded. Larger ships were added to the fleet, older ships were re-armed and more training centres were opened at Mumbai, Kochi, Visakhapatnam, Kolkata, Chennai and Karachi. The force was trained in navigation, seamanship, signals and mechanical engineering. The Royal Indian Navy was on the verge of expansion by 1939 CE. However, a recession resulted in stunting its expansion, and it was not an ideal Royal Indian Navy that went into action during World War II.

Indian seamen contributed enormously to the war effort in both the World Wars. During WW I, Indian Army troops were transported aboard ships of the Royal Indian Navy to France, Africa and Tigris–Euphrates basin. A convoy of the Indian Marine ships set sail with a cavalry to France within just three weeks of declaration of the war and a safe corridor was maintained between Mumbai and Aden harbours through intensive mine sweeping operations by the smaller Indian Marine ships. During WW II, however, the geographical swathe of Indian presence extended far wider and impacted, both, the eastern and the western theatres of the War. This is the image of the register of names kept in the Memorial Hall at Sailors Home, Mumbai, for the seamen of the Royal Navy and the Royal Indian Marine, who sacrificed their lives in World War II.

The Royal Indian Navy in World War II

At the start of the Second World War, the Royal Indian Navy was a small fleet with just eight warships. Their operations included minesweeping in the Mediterranean, providing support during the invasion of Sicily, helping establish naval blockades in Africa, landing operations in Mersataclai and transporting prisoners of war to Aden. In June 1940, France fell. This enabled the Japanese to enter the French Indo-China in September 1940. Soon, the Japanese wave of attacks grew stronger in the Asian region. By the middle of 1942, the Japanese held suzerainty over the oceans in the east Asian theatre of war. During this period, the Royal Indian Navy was responsible for the transportation of troops from mainland India to the mouth of the Rangoon River, and was also involved in an operation to withdraw troops from Akyab in Arakan. The Royal Indian Navy played a pivotal role in multiple theatres of war and helped both the Royal Navy and the Allied Forces during World War II.

HMIS Sutlej (U95) was a modified Bittern-class sloop, later known as the Black Swan-class, which served in the Royal Indian Navy (RIN) during World War II. After India became a Republic on 26 January 1950, the vessel was renamed as the Indian Naval Ship (INS) Sutlej.

The revolt by Indian ratings of the Royal Indian Navy between 18-23 February 1946 has been christened the 'Royal Indian Naval Uprising' by historians. The strike, which started as a protest against food, general service conditions and misbehaviour of British officers of the RIN, soon took on nationalistic fervour. The strike, however, did not get any support from the Indian nationalist politicians as they saw it as an 'unnecessary bother' on the eve of independence. At the request of Sardar Vallabhai Patel, the strike was called off. The Indian Navy erected a memorial in Colaba to commemorate the uprising and this is the image of that memorial.

The Naval Uprising of 1946

On 18 February 1946, some ratings of the Royal Indian Navy, influenced by the raging nationalist atmosphere in the sub-continent, went on strike to protest the prevalent service conditions, food, dwelling, and facilities. The strike found wide support among the general population, and there were demonstrations and a day-long strike in Mumbai. Those who participated in the strike referred to themselves as part of the Indian National Navy (an ode to Subhash Chandra Bose's Indian National Army). Slowly, the effects of the strike began to spread to other cities, the Royal Indian Air Force, the Army, and then to the local police forces. Widespread riots erupted from Kolkata to Karachi.

It was only when Vallabhbhai Patel was sent by the Congress to conduct negotiations that the strike was eventually called off. In the words of former Chief of the Naval Staff, Admiral S.N. Kohli who was present during the uprising: "It is my view that the Naval Mutiny, coming as it did at the culmination of a number of similar incidents in the Indian defence services, was largely instrumental in convincing the British that holding India was no longer feasible without the use of large-scale British force and was, inter alia, responsible for ushering in freedom." This would not have been possible but for the many Indian sailors who worked on foreign ships. The next section provides a brief history of these sailors.

Lascars: Unsung Heroes of the Sea

'Lascar' refers to Indian sailors who sailed and worked on European ships from the 16th century to the 20th century and the name originates from the Arabic root, 'Al-Askar' which means soldier. Though lascars served the Portuguese too, they were largely associated with the British ships in India. The British usually hired the lascars from the towns and villages near the ports they operated from.

The ancestors of the lascars can be traced back to the west coast of India, to the period of about a hundred years after the advent of Islam. This was the period of peaceful Arab dominance of the west coast of India. Arab merchants, who came frequently to the west coast for trade, were encouraged by the rulers of southern India to settle on the coast.

This helped local Indians to learn navigation, shipbuilding and maritime affairs from the Arabs. While some of these lascars were mercenaries and involved in wars, most of them worked on British ships under the supervision of British officers. After the war, many lascars settled down in Britain and took British wives.

The Lascar War Memorial in Kolkata is a 100 ft tall structure built in the Indo-Mughal style depicting the prows of an ancient galley (ship) projecting from two sides and capped by four mini minarets and a large dome. Along the facade are undulating lines symbolising waves. The memorial was designed by William Keir and fetched him an award of a princely sum of ₹ 500 at an international competition. The lascar memorial was thrown open to the public by the then Governor of Bengal, Lord Lytton, on 06 February 1924. Though very little recorded material is available about these seafaring men, this Lascar War Memorial is in memory of the 896 lascars who died fighting for the British Royal Navy during the World War I.

Blueprint to Bluewater (1947 to 1964)

When independence was eventually attained on 15 August 1947, the Partition Council divided the Royal Indian Navy into two entities - the Royal Indian Navy and the Royal Pakistan Navy, for the dominions of India and Pakistan respectively. Rear Admiral J.T.S. Hall was appointed as independent India's first Flag Officer Commanding Royal Indian Navy (FOCRIN). Admiral Hall, along with many other officers of the Royal Indian Navy, including Rear Admiral Lord Louis Mountbatten, Indian officers Commander A.K. Chatterji (Director of Naval Plans), Lieutenant Commander N. Krishnan (Staff Officer Plans) and Lieutenant Commander Y.N. Singh (navy's first aviator), formulated an 'Outline Plan for the Reorganisation and Development of the Indian Navy'.

The plan envisioned four essential roles for the navy:

- to safeguard Indian mercantile shipping.
- to ensure that supplies could reach and leave by sea under all circumstances.
- to prevent an enemy landing on India's shores.
- to support the army in sea-borne operations.

In 1950, the umbilical cord that had linked the Indian Navy to the British Royal Navy for centuries was cut. When India became a Republic on 26 January 1950, the 'Royal Indian Navy' became the 'Indian Navy' and all its vessels were re-christened as Indian Naval Ship (INS). The major goals ahead were expanding the fleet to a size proportionate to the tasks and responsibilities of free India, setting up a number of training establishments and maintenance facilities on both coasts of the peninsula, commencing the process of indigenising the design and construction of major and minor war vessels, along with the development of associated propulsion systems, weapons and equipment, and restructuring its strategic and tactical doctrines to suit the requirements of the region. On 27 May 1951, the Indian Navy was presented the President's Colours by the first Indian President, Dr. Rajendra Prasad. The navy was the first service to be bestowed with this honour, and on 10 October 1953, the very first Naval Fleet Review by the President was conducted.

Prior to the establishment of the National Defence Academy (NDA) in 1954, Indian naval officer cadets underwent four years of training at Dartmouth, United Kingdom, with the Royal Navy and were commissioned as Sub Lieutenants upon their return. The need for naval air power and an aircraft carrier had been accepted in principle even before independence. However, negotiations with the British were concluded only in 1957. The year 1958 saw another historical landmark with the first Indian Chief of Naval Staff, Vice Admiral R.D. Katari taking charge, on 22 April. The initiative to form a submarine arm was taken up for the first time in 1959 with a proposal to acquire four submarines from the Royal Navy. The navy, meanwhile, finalised the acquisition of aircraft carrier Vikrant (finally commissioned in 1961) and two aircraft squadrons. In 1963, negotiations with the British Government commenced but when it did not progress as desired, an agreement with the Soviet Union to acquire submarines finally took shape.

MINE WARFARE

The earliest mine counter measures involved use of nets to trap floating mines. Then sweeps consisting of a single wire with a torpedo-shaped float (Oropesa) attached at the outer end began to be used to cut moored mines. MCM has evolved through the ages and the Indian Navy seeks to induct modern minesweepers through the 'Make In India' route. An artist's impression of an Oropesa sweep in World War I by the Royal Indian Navy is depicted here.

Vice Admiral R.D. Katari taking over as the first Indian Chief of the Naval Staff from Vice Admiral Stephen Carllil on 22 April 1958.

Transition to Triumph (1965 to 1975)

The Indian Navy demonstrated considerable reluctance in its initial days to begin a relationship with the Soviets as all their administration, training, logistics, maintenance, operations and tactical procedures were completely based on the British Royal Navy. There was also the barrier of language. English had been the formal medium of communication within and outside the Indian Navy and the new relationship required much effort to overcome existing traditions.

The Cold War between the USA and the USSR also meant that any such action would have far-reaching repercussions. After much deliberations, and due to the lack of progress in talks with the UK and the USA, an agreement was concluded with the USSR in 1965 for the purchase of four Foxtrot-class submarines, a most successful, contemporary submarine design.

This was a huge step towards acquring state-of-the-art technology. With newer ventures coming in, by 1968, the navy realised that the lone National Defence Academy could not keep up with its expanding staffing requirements and this led to the establishment of the Indian Naval Academy to impart essential training for officer cadets at Kochi in May 1969. The next decade was a dynamic period for the Indian Navy as huge advancements were made in induction of missile, submarine and aircraft technologies.

The induction of the Osa-class missile boats in 1970 was another big step and it proved to be a masterstroke. The boats made a decisive impact on the India-Pakistan war of 1971. Their performance and the navy's success with their innovative use gave the Indian Navy the confidence to upscale capability rapidly, especially in the area of local shipbuilding. The commissioning of the first Leander-class frigate in 1972 was a watershed moment in the navy's indigenisation program.

Vagli, a Foxtrot-class submarine commissioned into the Indian Navy on 10 August 1974, provided 36 years of active service, and was decommissioned on 09 December 2010. The Foxtrot -class was christened the Vela-class by the Indian Navy and was the platform on which a large number of first generation submariners trained and also went on to man nuclear submarines later.

Transition to Eminence (1976 to 1990)

In this particular period in its history, the Indian Navy was besieged by a number of issues and faced see-sawing developments. Recurrent monsoon failures, hikes in oil prices due to the Arab-Israel conflict of 1973 and continuing troubles on the economic front, led the Indian Navy to find out-of-the-box solutions and make the best use of indigenous resources. By 1976, the role of Maritime Air Reconnaissance was transferred from the air force to the navy. With Soviet support, the next five years saw the development of the shore-based arm of naval aviation. The 1980s and 1990s saw the upgradation of the submarine arm, and 1987 was a significant year when aircraft carrier ex-Hermes was commissioned as Viraat. The far-sightedness of naval planners and shipbuilders resulted in a submarine, aircraft and ship acquisition programme that had a decisive impact on India's maritime power. Overcoming all challenges and learning from the hard times, the Indian Navy was soon ready to take on a proactive role in the Indian Ocean Region (IOR).

Hermes, the flagship of the Royal Navy Task Force that regained Falkland islands from Argentina, was offered to the Indian Navy, which took the decision to acquire it as the first aircraft carrier Vikrant was coming to the end of her life. The ship was acquired in May 1987 after an extensive refit in a British dockyard. 'Viraat' has been the flagship of the Western Fleet since then and is due for decommissioning in 2016 as her primary fighter, the VSTOL Sea Harrier is also being retired. Sea King helicopters provided ASW and ASuW capabilities to her CBG.

Transition to Guardianship (1991 to 2001)

The closing years of the 20th century marked the dawn of a new era as the Indian Navy actively engaged in fostering a strong relationship with other nations, building combined combat capabilities and delivering humanitarian services. This section that follows covers an overview of the peacetime operations of the Indian Navy, which contributed to peace and stability at sea in the Indian Ocean Region as a committed net security provider. An operation to rescue a hijacked Japanese flagged merchant vessel MV Alondra Rainbow in 1999 marked the navy's first joint counter piracy operation with the coast guard, which was to soon see the Indian Navy become a major contributor to anti-piracy operations in the piracy infested waters of the Gulf of Aden, and countering piracy in the Arabian Sea.

Apprehension of pirated vessel MV Alondra Rainbow on 16 Nov 1999. This successful joint operation by the Indian Navy and Coast Guard heralded the emergence of India's maritime forces into active actions against piracy in the region.

Naval Operations in Assistance to Indian Ocean Littoral Nations

Operation 'Pawan'

With the political and security situation in Sri Lanka deteriorating due to ethnic conflict between the Tamils and the Sri Lankan government, Operation 'Pawan' was launched by Indian armed forces on 30 July 1987, with the induction of an IPKF (Indian Peace Keeping Force) at the request of the Sri Lankan government.

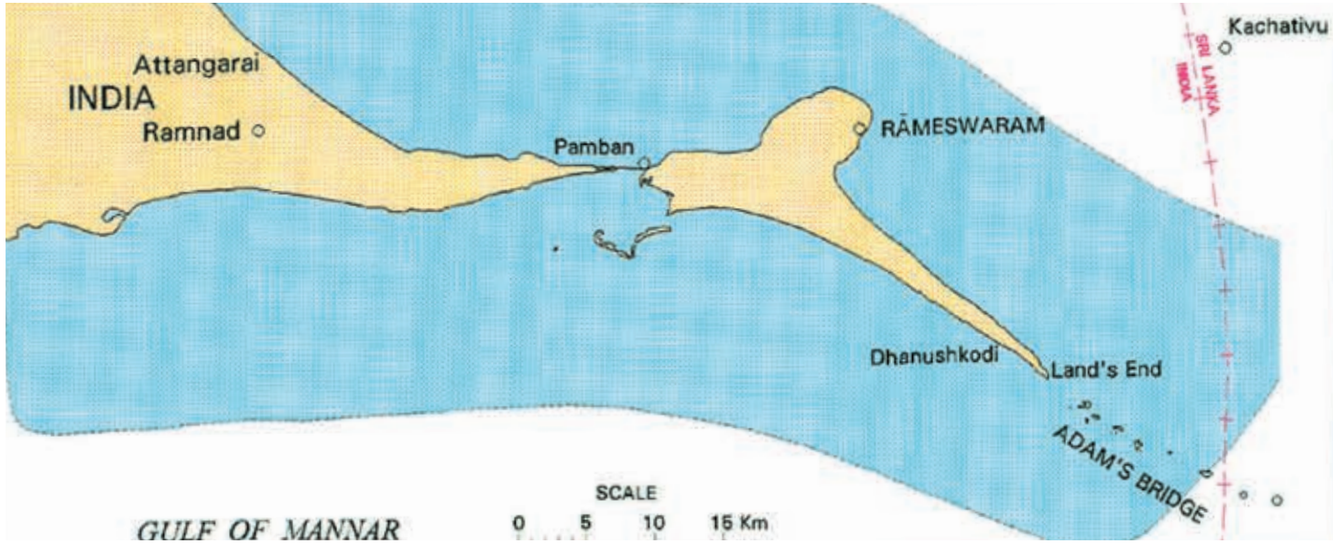
The Indian Navy carried out the following tasks:

- Joint naval patrols of Sri Lankan waters with Sri Lanka Navy to prevent movement of arms and militants.
- Joint operations with Indian Army to combat militant activity at sea and on land.
- Sealift operations for logistic support and maintenance of the IPKF.
- General operations in support of the accord like 'transfer of refugees'.

The newly raised Indian Marine Special Force (IMSF) made its debut in 1987 as the IPKF operations began and a fledgling force comprising just 40 commandos (now rechristened MARCOs) participated in 55 combat operations and destroyed LTTE boats, ammunition, warehouses and militant camps. This operation heralded the navy's special operations and sealift capability in support of land operations. The navy's significant role in Operation 'Pawan', which lasted for two years, was imposition of 'Cordon Militaire' (a military fortification), along a 310 mile belt to the north and east of Sri Lanka, till the southern limit at Little Basses Island, to effectively seal and prevent any militant movement and illegal arms trafficking. Operation 'Pawan' terminated on 24 March 1990, when the final contingent of the IPKF troops sailed out of Trincomalee onboard ships of the Eastern Fleet.

The most significant part of Op Pawan was the Cordon Militaire (a military fortification) established by the Indian and Sri Lanka Navies and Coast Guards, to isolate the Sri Lankan coast from the sea, from the west to the south-east through the north of Sri Lanka, to prevent any illegal movement of the militants across the maritime boundary of India and Sri Lanka. This map shows the broad disposition of forces while ensuring the cordon.

In 1988, an attempted coup by a group of Maldivians, supported by some Sri Lankan mercenaries, was thwarted by Indian armed forces who launched Operation 'Cactus' at the request of Maldive President Gayoom. Indian Army soldiers were airlifted by the IAF to Hulhule airport and they fanned out quickly to regain control of the capital Male. Indian naval ships Godavari and Betwa were homed by IN MR aircraft to close in on a merchant vessel MV Progress Light, which had been commandeered by the coup leaders to escape from Male, and rescue the hostages who were being taken to Sri Lanka. The image shows Progress Light ablaze when Betwa opened fire to stop the ship after repeated warnings had been ignored. When hit by gunfire, Progress Light stopped and Indian forces from the two ships rescued the hostages and captured the coup leaders before they entered Sri Lankan waters.



Operation 'Cactus'

A third coup d'état was attempted against President Maumoon Abdul Gayoom's government in Maldives by 300 - 500 armed Tamil / Sinhala-speaking mercenaries on 02 November 1988, and the mercenaries captured key locations in the capital Male. President Gayoom, in the early hours of 03 November 1988, sought India's help and Op 'Cactus' was launched by the Indian armed forces. Two naval ships Godavari and Betwa, were diverted to Male at maximum speed and naval reconnaissance aircraft established surveillance over the Maldives. The same night, Indian Air Force aircraft landed troops on Male airport on Hulhule Island and recaptured Male by the next morning. The mercenaries hijacked a merchant vessel, MV 'Progress Light' and after taking a few Maldivian VIPs as hostages, set sail for Sri Lanka. Backed with the tracking assistance from Indian naval maritime reconnaissance aircraft, Godavari, with a helicopter and a team of negotiators on board, and Betwa closed in on the hijacked ship by midday of 05 November.

The negotiations for the release of the hostages made no progress through the day. The Sri Lankan and Maldivian governments requested that MV Progress Light not be allowed to enter Colombo. In the morning of 06 November, 60 miles from Colombo, the naval ships increased pressure on the hijackers with small arms fire, air-dropped depth charges, delivered heavy calibre gun fire across the bows and, finally, when MV Progress Light refused to relent, fired a direct shot at her that stopped the ship dead in the water. Naval boarding parties swiftly rescued the hostages.

Injured hostages were airlifted by Godavari's helicopter to the Military Hospital at Trivandrum and the mercenaries were handed over to the authorities at Male. Peace was restored in Maldives.

Humanitarian Relief and Evacuation Operations

The efforts of the Indian Navy to protect and enhance India's maritime interests in the 1990s could be broadly categorised into four types of naval operations - humanitarian assistance, low intensity maritime operations (LIMO) against illegal and undesirable elements, anti-piracy and deterrent operations. The Indian Navy's capabilities and ability to conduct and sustain such operations at long distances from home ports, soon began to be acknowledged by the region and noticed globally.

Operation 'Restore Hope'

The Indian Navy's first ever overseas deployment in support of United Nations relief operations occurred between end 1992 and 1994. Termed Operation 'Restore Hope', it was aimed to assist and protect humanitarian activities of the UN in Somalia. This operation involved 2,000 Indian Army troops and a Task Group of three naval ships.

The Indian naval involvement in Operation 'Restore Hope' included operations in three segments called:

• Op 'Muffet' • Op 'Shield' • Op 'Bolster'

Operation 'Muffet'

When the government decided to support the UN humanitarian efforts in Somalia, a naval Task Force

MISSILE WARFARE

BRAHMOS is Indian Navy's potent short range ramjet supersonic cruise missile. It is a result of a joint development project between India and Russia to develop air, sea and submarine launched anti-ship and land attack missile. It is the world's fastest cruise missile in operation. The name BrahMos is a portmanteau formed from the names of two rivers, the Brahmaputra of India and the Moskva of Russia. It is fitted on a number of Indian naval ships and the Indian army fields it in a number of missile regiments. IAF Su-30s are being configured and future Indian submarines are also likely to be fitted with versions of this missile. A hypersonic version of the missile, BrahMos-II, with far greater speeds (up to Mach 7), is also presently under development.

under the command of Commodore Sampath Pillai, Commodore Indian Naval Forces (COMINF), comprising three Indian naval ships Deepak, Kuthar and Cheetah, was despatched to Somalia. The Indian Navy's role in this operation was to patrol off Mogadishu and transport UN stores as required. The charter of UN operations was changed on 04 May 1993 and humanitarian assistance from UNOSOM continued till June 1993. Op 'Muffet' was also terminated by the end of 1993.

Built in Mazagon Docks Limited, Mumbai, under Project 16, Godavari is a guided-missile frigate and the lead ship of her class. The Project 16 frigate programme was a follow-on from the modified Leander class project with upgraded capabilities in weapons, sensors and two hangars to embark two Sea King helicopters. The ship was de-commissioned on 23 Dec 2015.

Operation 'Shield'

Operation 'Shield' was carried out in December 1994 and involved assistance for the de-induction of the Indian Army Brigade from Kismayo. The Indian Navy deployed two frigates, Ganga and Godavari (with a Sea King helicopter each), and tanker Shakti for the operation. The operation commenced on 06 December 1994, and by 11 December 1994, the vessels had completed loading of the Brigade and sailed for Mogadishu.

Operation 'Bolster'

The Task Force from Kismayo arrived at Mogadishu on 12 December 1994, by when Indian and other UNOSOM troops had withdrawn to the Mogadishu airport. The Indian naval Task Force provided air surveillance and heli-borne small arms fire support while patrolling the coast till the last UN chartered flight left Mogadishu on 23 December 1994.

Operation 'Sahayata'

This operation was launched on 26 January 2001 to provide humanitarian relief in the earthquake hit areas of Gujarat. Over 250 tonnes of relief material comprising food grains, pre-cooked food, tents, blankets, petrol, etc., were provided by the naval ships. Six naval surgical teams were deployed in the remote villages, while two naval ships were converted into hospital ships and berthed at Kandla to provide medical assistance to the stricken people. About 500 patients were treated onsite and 41 serious ones transported to Mumbai by other naval ships.

Operation 'Denim'

On 18 May 2003, in response to the request for assistance by the government of Sri Lanka, relief operations named Op 'Denim' was launched. Patrol Vessel Sharda arrived at Galle on 20 May 2003 and naval teams assisted the local authorities with food and water distribution, casualty evacuation and medical assistance. Power and tele-communications in four flood affected districts of Ratanapura, Galle, Matara and Kaluthra were also restored. The operation was sustained for five days.

Offshore Patrol Vessel Sharda, based on a South Korean Tacoma design, was commissioned into the Indian Navy in October 1991. The Indian Navy found much use for these versatile, long-endurance vessels for a variety of operations including maritime patrol, Humanitarian Assistance and Disaster Relief and low intensity operations including anti-piracy.

The Indian Navy identified low-end threats from the sea to be of increasing concern and the need to induct relatively inexpensive, long endurance, lightly armed ships into the inventory. Thus evolved the design of the Naval Offshore Patrol Vessels, the image of one such Indian ship is seen. Sumitra, on her first deployment on anti-piracy mission in the Gulf of Aden, proved her worth when she got re-deployed for Op 'Rahat' covered later in the book.

NAVY - A BENIGN BENEFACTOR

Navies, during peacetime disaster situations in coastal areas, have a significant advantage in their ability to transport large amounts of stores and relief material into the affected areas, at minimum time and cost. After naval hydrographic survey and diving teams clear the affected port for operations and ships are permitted to enter, their mobility, reach and sustenance, with extremely large carrying capacities, turn into huge advantages for the agencies involved in providing relief and rehabilitation. Damaged roads and rail links that may prevent movement of stores over land can be mitigated by transporting vast quantities of repair and relief material by ships into ports; damage to electricity generation and distribution means can be addressed by embarking technical teams onboard warships, and drinking water shortages can be met by naval tankers if the water pipelines in the hinterland are still functional; else bottled water in large quantities can be shipped. Emergency medical supplies, equipment and medical teams can be brought into the disaster theatre and sustained in the affected area over prolonged periods, supported by naval ships. Ordnance disposal, diving assistance, search and rescue, community kitchens and field hospitals can all be brought into the affected area and sustained by ships in port. The attributes of sealift, mobility, reach and sustenance, therefore, become sizeable assets to relief agencies battling disastrous consequences of any natural calamities.

Post Tsunami Relief Operations - Operation 'Madad'/ 'Sea Waves'/ 'Rainbow'/ 'Castor'/ 'Gambhir'

The Indian Ocean earthquake of 2004 was one of the worst natural disasters of modern times. On 26 December 2004, the earthquake, which occurred off the north-west coast of the Indonesian island of Sumatra, generated a tsunami, wreaking havoc along 11 countries of the Indian Ocean.

Particularly hard-hit were the countries of Bangladesh, Myanmar, India, Indonesia, Kenya, Malaysia, Maldives, Sri Lanka, Somalia, Tanzania and Thailand. While Indonesia and Sri Lanka were hardest hit, Thailand and the Indian coasts of Tamil Nadu, Andhra Pradesh, Andaman and Nicobar islands, and Lakshadweep group of islands were also severely affected. About 2,30,000 people were killed, tens of thousands more were injured, and approximately 1.7 million were rendered homeless and displaced.

The Indian Navy launched five concurrent operations with 32 ships, seven aircraft and 20 helicopters to assist the stricken people of the IOR littorals even as it assisted the affected areas of India.

On the day the tsunami hit the IOR countries, the Indian Navy deployed 19 ships, four aircraft and eleven helicopters, which signalled the readiness and commitment of the Indian Navy to be the stabilising force in the region.

Sandhayak, a survey ship of the Indian Navy, was built by Garden Reach Shipbuilders and Engineers, Kolkata, and commissioned in March 1981. The ship is equipped to undertake hydrographic surveys of shallow coastal waters as well as deep oceans, to collect geo-physical data and prepare navigational charts. The navy has also deployed her as hospital ship in disaster stuck areas and to IOR nations for carrying out hydrographic surveys and preparation of charts when requested for. Survey ships have been among the primary instruments used by the Indian Navy to 'Build Bridges of Friendship' across the region. More advanced types of survey ships are to be inducted into the Indian Navy in the next few years.

Operation 'Sukoon'

Operation 'Sukoon' was the largest ever post-independence evacuation operation, launched to withdraw Indian nationals from war-torn Beirut, Lebanon. In the aftermath of massive air strikes and ground assault by Israeli forces on Lebanon in July 2006, thousands of foreign nationals were caught in the war zone. On being tasked, the Indian Navy diverted three warships, viz. Mumbai, Brahmaputra and Betwa, and a fleet tanker Shakti to carry out the evacuation.

The Indian warships together evacuated 2,280 persons of Indian, Sri Lankan, Bangladeshi, Nepalese and Lebanese nationality to Larnaca in Cyprus from where they were airlifted home. The swift deployment of warships to a theatre of war 4,000 nautical miles (7,200 km) away from home ports underscored the Indian Navy's flexibility, mobility and reach for conduct of trans-oceanic operations.

Operation 'Sukoon' was launched by the Indian Navy to evacuate Indian nationals from Lebanon during the 2006 Israel-Hezbollah war. The Task Force comprising four Indian warships Mumbai, Betwa, Shakti and Brahmaputra, evacuated 2,280 Indians, Sri Lankans, Bangladeshis, Nepalese and Lebanese to Cyprus, who were then flown to India on chartered Air India flights. The image shows an officer of destroyer INS Mumbai assisting an evacuee.

Operation 'Blossom'

When the situation in Libya turned unstable in the wake of mass protests against the regime in February 2011, with about 8,000 Indian citizens stranded in Libya, the Indian Navy deployed its lone LPD Jalashwa, destroyer Mysore and tanker Aditya on 26 February 2011 from Mumbai for evacuation operation named 'Blossom'.

The Task Force arrived off Tripoli and Jalashwa embarked 150 people waiting to be rescued, while Mysore established patrol outside the harbour. Both ships disembarked the evacuees at Valetta (Malta) on 11 March 2011, who then returned to India by air. The Indian Navy is to induct more LPDs to meet such peacetime contingencies.

In 2011, when Libya was teetering at the edge of severe civil unrest, owing to mass protests against the regime, destroyer Mysore and Landing Platform Dock Jalashwa, were deployed for Operation 'Blossom', to evacuate Indians from Libya to Valletta, Malta, for their return journey to India. This image is of LPD Jalashwa, acquired from the US Navy. The experience of operating the LPD, with its tremendous versatility and potential, has enthused the navy to plan for induction of more LPDs into the force in the next few years. The largest ship after the aircraft carriers, LPD's capability and combat potential, whether in war or for peacetime requirements, is a game changer.

L41

Navy launched Operation 'Lehar' to aid civilian authorities in resurrecting damaged infrastructure, including power and telephone lines, amongst other measures in Visakhapatnam, in the wake of super cyclone 'Hudhud'. The image highlights one such use of naval aviation, viz. shifting heavy stores in difficult terrain.

Operation 'Lehar'

Indian Navy launched a massive search, rescue and relief Operation 'Lehar' in October 2014 in the wake of super cyclone 'Hudhud' that battered the coastal state of Andhra Pradesh. Naval aircraft from Naval Air Station Rajali carried out aerial assessment of the damage and Headquarters Eastern Naval Command coordinated the massive relief operation carried out by the elements of the three armed forces, despite the navy itself suffering massive damage to its infrastructure at Visakhapatnam and its own personnel and families being traumatised by the scale of destruction.

Indian Navy deployed stealth frigate Tarkash and destroyer Mumbai to assist NOPV Sumitra in the evacuation of stranded Indians and other foreign nationals from Aden to Djibouti and named the operation 'Rahat'. The image shows an officer of Mumbai assisting an evacuee in Aden. The Indian Navy was the first to arrive off Aden to evacuate stranded persons and responded positively to the requests from many other nations to also aid their nationals.

Operation 'Rahat'

When the Indian government directed evacuation of about 4,000 Indian nationals working in Yemen on 30 March 2015, the Indian Navy launched Operation 'Rahat'. The raging civil war expanded upon military intervention by Gulf Cooperation Council (GCC) armed forces, with relentless aerial bombardments and artillery firing by both sides further devastating the country. The navy diverted NOPV Sumitra, then on anti-piracy tasking in the Gulf of Aden, to be the first responder till destroyer Mumbai and frigate Tarkash arrived from Mumbai, escorting two passenger liners withdrawn from the Lakshadweep ferry tasking. The three warships evacuated the stricken Indian and other nationals from Yemeni ports to Djibouti, from where they were airlifted home by Indian Air Force and Air India aircraft.

SEARCH AND RESCUE

Search and Rescue (SAR) is a 24x7 requirement of maritime forces, at sea or in harbour. Loss of a man overboard during operations at sea, particularly in bad weather, is a distinct possibility. Search, location and rescue of a citizen washed away during a swim on a beach or a fisherman from a stricken fishing boat, are all eventualities that maritime forces train for, and are regularly called upon to respond to. Consequently, navies and coast guards are ever alert to respond to such requirements with alacrity and have organisational structures to react as required. The twin-engine helicopter, Sea King, as seen in the image, has been a versatile platform for SAR and is embarked on most major warships of the Indian Navy.

Maritime Security for National Prosperity and Stability in the Global Commons

Anti-Piracy Operations

The Gulf of Aden, located between Yemen on the southern part of the Arabian Peninsula and Somalia in the Horn of Africa, is a critical waterway for India's energy security, trade and commerce. Therefore, the continued and sustained safety of maritime trade through this route is of primary concern to the Indian Navy. Further, in order to protect Indian ships and a growing community of Indian mariners sailing on Indian and foreign flagged ships, the Indian Navy commenced anti-piracy escort missions in the Gulf of Aden from October 2008.

Merchant ships, Indian and foreign flagged, are escorted along the entire length of the 490 nautical miles long and 20 nautical miles wide Internationally Recommended Transit Corridor (IRTC) that has been promulgated for use by all merchant vessels. Over 3,200 ships from over 50 different countries have been escorted through the IRTC during the entire period till December 2015. Indian Navy is an active participant in the 'Shared Awareness and De-confliction (SHADE)' mechanism in Bahrain for exchange of information related to piracy between the various international navies involved in the escort mission and the global shipping industry, and the web-based 'Mercury' net for exchange of tactical information between escorting warships.

The Mumbai terrorist carnage highlighted the vulnerability of Indian coasts. An exhaustive coastal security mechanism with requisite structures has been implemented. The image shows a boat being boarded and searched.

Anti-Piracy operations in the Gulf of Aden is an important task of the Indian Navy to ensure India's energy and economic security. Unescorted merchant vessels have been captured by pirates and released only on payment of huge ransom amounts by owners. This image shows a merchant vessel Asphalt Venture, on being released by the pirates, being towed to safe waters under Indian naval escort.

Coastal Security

As a consequence of the horrific terrorist attack on the city of Mumbai, India established a structured coastal security mechanism under the overall control of the Indian Navy.

A National Command Control Communication Intelligence (NC^3I) Network to integrate over 50 nodes of the Indian Navy and Coast Guard to develop a Common Operational Picture (COP) was operationalised on 23 November 2014.

The network integrates inputs from a chain of static sensors, over 70 stations of the National Automatic Identification System (NAIS) chain, the Long Range Identification and Tracking (LRIT) information and other relevant information obtained from open sources.

A special coastal force to protect maritime and naval infrastructure on the coast, christened Sagar Prahari Bal (SPB), has also been established and provided with Fast Interceptor Crafts (FICs) and Immediate Support Vessels (ISVs).

Maritime Regional Co-operation

The Indian Navy has been actively involved in enhancing capability and capacity of the maritime forces of friendly countries in the IOR. India has been providing vessels, hardware, aircraft and helicopters, training of personnel and maintenance support teams to develop operational and technical skills of the maritime security personnel, through a consultative process. All these material, technical and human resource development assistance to other maritime forces of the region has reinforced India's ties with these littoral nations. Indian Navy also engages proactively with friendly maritime forces in the IOR and beyond, through port visits, bilateral interactions, training initiatives, operational exercises and technical support arrangements, to expand the existing cooperative frame work - all of which enhance mutual understanding and contribute to peace, security and stability in the region.

Indian Navy recognised the need to develop institutional mechanisms to address common maritime concerns and challenges among the Indian Ocean littorals in keeping with India's growing maritime interests. The 'Indian Ocean Naval Symposium' (IONS), is one such mechanism that, while being a purely voluntary initiative, intends to increase maritime cooperation among the navies of the littoral states of the IOR by providing an open and inclusive forum for discussions on regionally relevant maritime issues. It was inaugurated in New Delhi on 14 February 2008. The Indian Navy was the founding chairman of IONS during the period 2008 to 2010, followed by UAE, South Africa and Australia. The image shows the delegates from Indian Ocean navies to one of the IONS seminars, hosted by the Indian Navy at Mumbai, to discuss issues of common interest and concerns.

India initiated its 'Look East' policy with the aim of developing closer relations with the south-east Asian nations in 1992. This soon led to the launch of a biennial naval interaction with Bay of Bengal littoral navies, called 'MILAN' in 1995 at Port Blair. The increasing relevance of this exercise has now expanded the participation to include countries from south-east Asia, the Asia-Pacific and Indian Ocean Region. The image shows the commencement of the city parade march with flag bearers of all participating nations. The expanding numbers of participants indicates the increasing relevance of this forum towards enhancing stability and security in the Bay of Bengal.

The India-Russia naval exercise named 'INDRA' is being conducted since 2003, alternately in each country's waters. The image shows the two navies engaged in 'INDRA' exercises in 2015 in the Bay of Bengal.

Exercises with Friendly Navies

Joint exercises with friendly nations provide the opportunity to learn from others, aid confidence building in the other navies and lead to greater mutual understanding. These enhance ability of all participants to operate with the others without advance preparations or planning conferences, should the involved navies require to operate together in any emergent situations like disaster relief or search and rescue at sea - all of which enhances maritime security mechanisms.

Indian Navy has been conducting and participating in bilateral and multilateral exercises with regional and extra-regional navies, and with greater frequency in the recent past, in keeping with the rising economic profile of the country and consequential increasing need for maintaining security and stability in the IOR. The scope and content of most exercises have been scaled up to meet the emerging maritime challenges in the unconventional realm, like natural disasters, piracy and maritime terrorism. The Indian Navy carries out exercises on a regular basis with navies of several friendly foreign countries like Australia, Brazil, France, Indonesia, Japan, Oman, Russia, Singapore, South Africa, Sri Lanka, UK and USA.

India-US naval exercise 'MALABAR' is a complex, high-end operational exercise that has grown in scope and complexity over the years. 'MALABAR' exercise commenced in 1992 and went on till 1998, when it was suspended in the wake of India's nuclear tests. It was again revived in 2002 and has been held every year thereafter, in Indian and Pacific Oceans, with advanced platforms participating from both sides. This is a view of IN and USN aircraft carrier battle groups participating in a 'MALABAR' exercise.

Singapore India Maritime Bilateral Exercise (SIMBEX) commenced in 1993. It was originally conceived to assist Republic of Singapore Navy (RSN) in gaining expertise and experience in Anti-Submarine Warfare (ASW), but soon developed into a much more robust and expanded series of annual exercises, hosted by both sides in either waters every alternate year. 'SIMBEX' has grown in tactical and operational complexity to include exercises such as Air Defence, Air and Surface firing, Maritime Security, and Search and Rescue Operations, while continuing to expand the scale and scope of ASW exercises.

The annual 'KONKAN' series of bilateral exercises between Indian and British Royal navies, in Indian and Atlantic Oceans has been conducted since 2004. It includes a harbour phase and a sea phase. This image shows IN and RN ships involved in manoeuvres during the exercise.

The India-Brazil-South Africa Maritime Exercise (IBSAMAR) is a biennial event, hosted and conducted thus far by the SAN off South Africa. The exercise has expanded in scope and complexity since its commencement in 2008, and reflects the congruence of interests between the three nations.

Indian and French navies have been undertaking war games at sea in the annual bilateral exercise 'VARUNA' in the Indian Ocean and the Mediterranean Sea, alternately, since 2001. Though these exercises have been a regular event since 1983, the name 'VARUNA' was coined only in 2001. These exercises have grown in complexity over the years with participation of aircraft carriers, nuclear and conventional submarines and shore-based strike and reconnaissance aircraft, amongst others. Procedures have evolved and compatible communication nodes developed to facilitate enhancing complexity of exercises and participating platforms.

Indian Navy and Japanese Maritime Self Defence Force (JMSDF) began an annual series of naval bilateral exercises 'JIMEX' in 2012 when ships of India's Eastern Fleet arrived in Tokyo to commemorate 60 years of diplomatic relations between Japan and India. The decision to institutionalise an annual bilateral exercise between the Indian Navy and JMSDF in waters of either country alternately, relates to the strategic relations between the two countries. The exercises also provide the opportunity for both navies to develop interoperability to meet common concerns, challenges and opportunities in the region. This image shows an exercise in progress between IN and JMSDF ships in JIMEX 2015.

Indian and Australian navies commenced annual bilateral exercises called 'AUSINDEX' from 2015. This image is of AUSINDEX in the Indian Ocean.

Indian and Sri Lanka navies commenced bilateral exercises since 1993, now termed 'SLINEX'. This image is of a SLINEX exercise in progress in the Indian Ocean.

Indian Navy and Royal Navy of Oman have been carrying out bilateral exercises 'NASEEM AL BAHR' since 1993. This image is of an Indo-Oman naval exercise in the Indian Ocean.

The Indian Navy also participates in multilateral exercises to enhance operational gains and exposure. In 2014, these included 'KOMODO', a multilateral Humanitarian Assistance and Disaster Relief exercise, held at Batam, Indonesia, and the world's largest multilateral naval exercise, RIMPAC, off Hawaii. The Indian Navy was represented by a ship and a two-member delegation as exercise staff. This is an image of RIMPAC with all participating navies.

CORPAT or 'Coordinated Patrol' in Andaman Sea is conducted by littoral navies to prevent or deter activities at sea, like terrorism, poaching, smuggling, trafficking, etc. Indian Navy has CORPAT arrangements with Indonesia, Thailand and Myanmar. This is an image of an opening cermony of one such CORPAT.

Transforming the Indian Navy: Colonial Navy to Networked Three Dimensional Navy to Net Security Provider in the Indian Ocean Region

From a small force that served the British colonial interests to a powerful maritime force that zealously protects the nation's maritime interests, wherever they may lie, to now being a 'Net Security Provider' in the IOR, the Indian Navy's transformation has been phenomenal and exceptional. In the last five decades, India's growing military maritime ability and capability has contributed to peace and stability in the Indian Ocean. The Indian Navy has remained steadfast and focussed on the development of niche capabilities in the three areas of 'float, move, fight' on its platforms, through any model, including indigenous development, technology transfer, joint development or licensed development, with public and private sector participation. The navy is today fully networked with all platforms, ships, submarines and aircraft, operating on a common plot through digital, secured and redundant communication links to enable battle field transparency and effective control of combat power.

The Indian Navy successfully projects influence in India's maritime areas of interest, to further the nation's political, economic and security objectives. With the Indian Navy ever willing to advance, protect and secure the nation's interests, a bright, successful future in the maritime realm awaits India, as she trims her sails and gathers headway, relentlessly. This photo-essay book is a modest attempt to link our maritime past with the progress to the present, and in light of the same to relate the future of the nation, to a distinct maritime orientation, with the Indian Navy as the lead national maritime agency. It is increasingly clear that sustenance of the country's economic growth is directly dependent on, and closely intertwined to, an environment of unhindered freedom of navigation in the global common. The Indian Navy is the primary reflection of the changing orientation of India and her people from landward focus to a distinct and certain maritime outlook. This would provide the impetus and be an engine of growth and prosperity in driving a resurgent nation. Hence, this small attempt by the Indian Navy to generate interest in India's rich maritime heritage of the past and in drawing attention towards India as a maritime nation with rich heritage.

Prime Minister, Shri Narendra Modi, commissioned INS Kolkata, the lead ship of the Project-15A (Kolkata-class) indigenous destroyer, on 16 August 2014. The Kolkata-class is a follow-on project of the very successful Project-15 Delhi-class destroyers and are fitted with more potent weapon-sensor and combat management suite than the Delhi-class. The Kolkata-class ships also have greater indigenous content than the Delhi-class destroyers and will comprise of two more ships after Kolkata, named Kochi and Chennai. The Mazagon Docks shipyard have, meanwhile, already commenced work on the next follow-on Project-15B destroyers and launched the lead ship, Vishakapatnam, on 20 April 2015.

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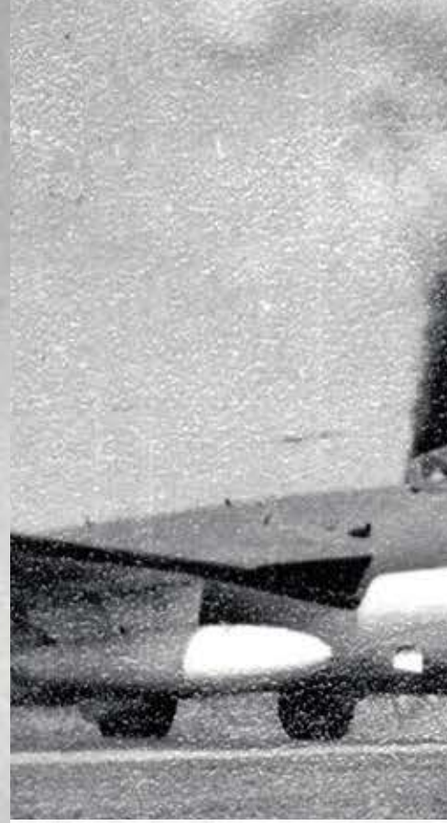
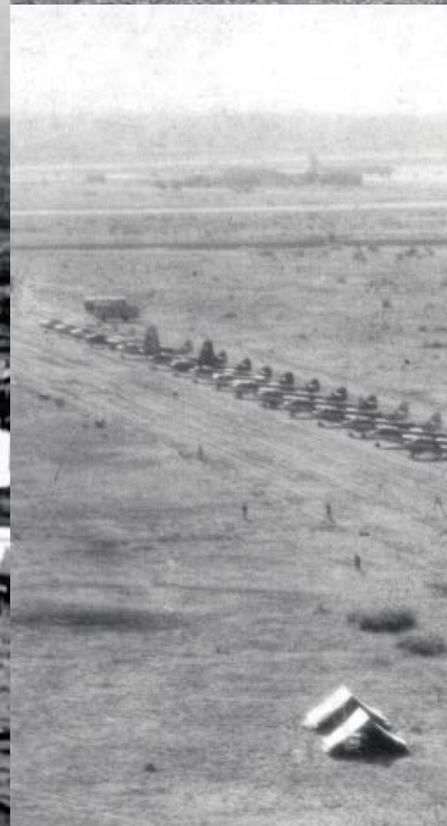
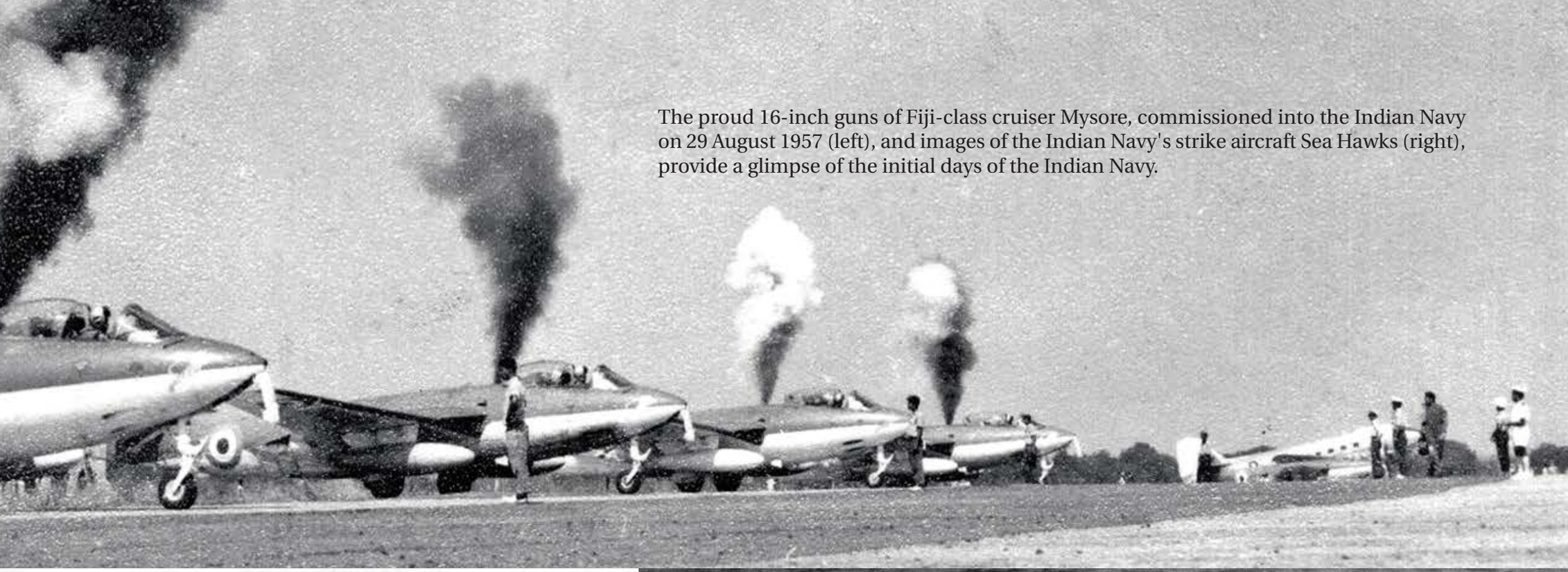
India's first Prime Minister Shri Jawaharlal Nehru with the crew of cruiser Mysore on 28 Mar 1958.





The proud 16-inch guns of Fiji-class cruiser Mysore, commissioned into the Indian Navy on 29 August 1957 (left), and images of the Indian Navy's strike aircraft Sea Hawks (right), provide a glimpse of the initial days of the Indian Navy.



R K DHOWAN

The Indian Navy demonstrated its operational capabilities to the Hon'ble Raksha Mantri (Defence Minister) Shri Manohar Parrikar onboard the aircraft carrier Vikramaditya on 14-15 February 2015 (left), and to Hon'ble Prime Minister, the three Service Chiefs and the Defence Secretary at a Combined Commanders' Conference on 15 December 2015 (right).

Officers and sailors of the latest powerful acquisition, destroyer Kochi, salute the Hon'ble Prime Minister on Vikramaditya as it steams past (left), and the destroyer leaves Kochi city, whose name the ship carries (right).

The Hon'ble Prime Minister formally inducted the aircraft carrier Vikramaditya into the Indian Navy on 14 June 2015, during his 'Day at Sea' with the Western Fleet.

The powerful Delhi-class destroyer prowling the blue waters of the Indian Ocean (left), and the representative of India's military maritime power, aircraft carrier Vikramaditya (right), deployed in support of India's maritime interests.

The front cover shows an artist's impression of the convergence of a Matsya Yantra and a modern magnetic compass. The Matsya Yantra, used by ancient Indian mariners to navigate across oceans, was an oil-filled stone container in which a magnetized, fish-shaped metallic strip was floated, to point to the North. It was a precursor to the modern magnetic compass. The cover thus showcases India's distinguished maritime legacy and the maritime heritage of modern India.

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