

## INDIAN SEAFARING TRADITION – A HISTORICAL PERSPECTIVE

Do Thou, Whose countenance is turned to all sides, send off our adversaries as if in a ship, to the opposite shore: do Thou convey us in a ship across the sea for our welfare."

- **Rig Veda.** 1., 97, 7 and 8.

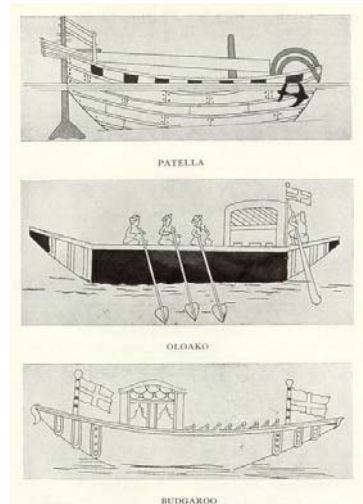


‘Sailors dropping anchor’, an ‘Angorwat’ original stone carving

***Vedic culture was a maritime culture; the Vedic people lived by the sea for some time before the hymns of the Rig Veda were composed.***

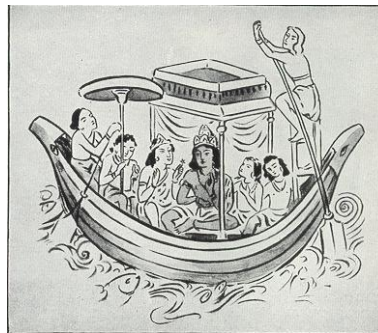
**India's** maritime history predates the birth of western civilization. The world's first tidal dock is believed to have been built at Lothal around 2300 B.C. during the Harappan Civilizations, near the present day Mangrol harbour on the Gujarat coast. The Rig Veda, written around 2000 B.C., credits Varuna with knowledge of the **ocean routes** commonly used by ships and describes naval expeditions which used hundred-oared ships to subdue other kingdoms. There is a reference to Plava, the side wings of a vessel which give stability under storm conditions, perhaps the precursor of *modern stabilizers*. Similarly, the Atharva Veda mentions boats which were spacious, well constructed and comfortable. In Indian mythology, Varuna was the exalted deity to whom lesser mortals turned for forgiveness of their sins. It is only later that Indra became known as the King of the Gods, and Varuna was relegated to become the *God of Seas and Rivers*. The ocean, recognized as the repository of numerous treasures, was churned by the Devas and Danavas, the sons of Kashyapa by queens Aditi and Diti, in order to obtain Amrit, the nectar of immortality. Even today the invocation at the launching ceremony of a warship is addressed to Aditi.

The influence of the sea on Indian kingdoms continued to grow with the passage of time. North-west India came under the influence of *Alexander the Great*, who built a harbour at Patala where the Indus branches into two just before entering the Arabian Sea. His army returned to Mesopotamia in ships built in Sind. Records show that in the period after his conquest, Chandragupta Maurya established an Admiralty Division under a *Superintendent of Ships* as part of his war office, with a charter including responsibility for navigation on the



seas, oceans, lakes and rivers. History records that Indian ships traded with countries as far as Java and Sumatra, and available evidence indicates that they were also trading with other countries in the Pacific and Indian Oceans. Even before Alexander there were references to India in Greek works, and India had a flourishing trade with Rome. The Roman writer Pliny speaks of Indian traders carrying away large quantities of gold from Rome, in payment for much-sought exports such as precious stones, skins, clothes, spices, sandalwood, perfumes, herbs and indigo.

Trade of this volume could not have been conducted over the centuries without appropriate navigational skills. Two Indian astronomers of repute, Aryabhata and Varahamihira, having accurately mapped the positions of celestial bodies, developed a method of computing a ship's position from the stars. A crude magnetic compass was being used around the fourth or 5th Century A.D. Called Matsya fish that floated in a vessel of oil and pointed North. Between the 5th and 10th centuries A.D., the kingdoms of southern and eastern India had established their rule over Malaya, Sumatra and Western Java. The Matsya then served as an important link between the Indian peninsula and China. The daily revenue



THE ROYAL PLEASURE-BOAT  
From the Ajanta Painting

the period 844-848 AD was estimated at 200 maunds (eight tons) of gold. **Passenger ships plied regularly between the Ganges, Ceylon and Malaya in the middle of the first millennium A.D. Indian settlers from Gujarat and Kalinga colonized Java, for instance, while others set out for Burma or Cambodia.**

Testimony to the flourishing condition of the *ship-building industry* in India is available in the description of the return journey of Alexander from India via the sea route. According to estimates of Ptolemy nearly 2000 vessels which between them accommodated 8000 troops, several thousand horses, and vast quantities of supplies. This vivid description speaks not only of the ready resources and expertise of the Indian craftsmen but also of the tonnage of the seaworthy ships estimated at about 75 tons (or 3000 amphorea) by Pliny

In the period 984-1042 A.D., the Chola kings despatched great naval expeditions which occupied parts of Burma, Malaya and Sumatra, while suppressing piracy by the Sumatran warlords. In 1292 A.D., Marco Polo described Indian ships as "...built of fir timber, having a sheath of boards laid over the planking in every part, caulked with oakum and fastened with iron nails. The bottoms were smeared with a preparation of quicklime and hemp, pounded together and mixed with oil from a certain tree which is a better material than pith." A 14th Century description of an Indian ship credits it with a carrying capacity of over 100 people, giving a fair idea of both the shipbuilding skills and the maritime ability of seamen who could successfully man such a large vessel. **Buddhist Jataka** stories wrote about large Indian ships carrying seven hundred people

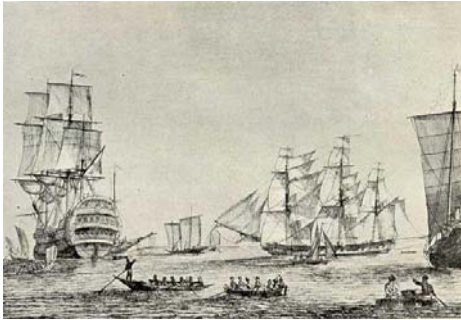
Another account of the early 15th Century describes Indian ships as being built in compartments so that even if one part was damaged, the rest remained intact, enabling the ship to complete her voyage - a forerunner of the modern day sub-division of ships into watertight compartments; a concept then totally alien to the Europeans.

**Yuktikalpataru gives a detailed classification of ships: (DNV – LRS – ABS take note!)**

**They were two kinds: ordinary (Samanya) ships comprising those used in inland waters and special (visesa) meant for sea journeys. The largest of these called Manthara measured 120 cubits in length, 60 in breadth and 60 cubits in height. During the days of the composition of Yuktikalpataru, it appears that ship-building was highly advanced. Bhoja has advised the builders of the sea-faring ships not to join the planks with iron, as, in the case, the magnetic iron in sea water could expose the ship to danger. To avoid this risk, he suggests planks of the bottoms should be held together with the help of substances other than iron.**

The decline of *Indian maritime power* commenced in the 13th Century, and Indian sea power had almost disappeared when the Portuguese arrived in India. The latter imposed a system of license for trade, and set upon all Asian vessels not holding permits from them. A naval engagement in Bombay Harbour in 1529 resulted in Thana, Bandora and Karanja agreeing to pay tribute to the Portuguese, and a grand naval review was held by them in 1531. They took complete control of the harbour in 1534 and finally ceded it to the British in 1662, under a treaty of marriage between Charles II and Infanta Catherine of Braganza. The piracy by the Portuguese was challenged by the Zamorin of Calicut when Vasco da Gama, after obtaining permission to trade, refused to pay the customs levy. Two major engagements were fought during this period. The first, the Battle of Cochin in 1503, clearly revealed the weakness of the Indian navies and indicated to the Europeans an opportunity for building a naval empire. The second engagement off Diu in 1509 gave the Portuguese mastery over Indian seas, and laid the foundation of European control over Indian waters for the next 400 years.

Indian maritime interests witnessed a remarkable resurgence in the late 17th Century, when the Sidis of Janjira allied with the Moghuls to become a major power on the West Coast. This led to the Maratha King Shivaji creating his own fleet, commanded by able Admirals like Sidhoji Gujar and later Kanhoji Angre. This Maratha fleet along with the legend of Kanhoji held sway over the entire Konkan Coast, keeping the English, Dutch and Portuguese at bay. The death of Angre in 1729, left a vacuum in leadership, and this resulted in the decline of the Maratha sea power. Despite the eclipse of Indian kingdoms with the advent of western domination, Indian shipbuilders continued to hold their own well into the 19th century. Ships displacing 800 to 1000 tons were built of teak at Daman and were superior to their British counterparts both in design and durability. This so agitated British shipbuilders on the River Thames that they protested against the use of Indian-built ships to carry trade from England. Consequently active measures were adopted to cripple the Indian industry. Nevertheless, many Indian ships were inducted into the Royal Navy, such as HMS *Hindustan* in 1795, HMS *Cornwallis* (a frigate) in 1800, HMS *Camel* in 1806 and HMS *Ceylon* in 1808. HMS *Asia* carried the flag of Admiral Codrington at the Battle of Navarino in 1827 - the last major sea battle to be fought entirely under sail.



### **Maratha Bust**

HMS *Trincomalee* built at Bombay dockyard, was launched on 19 October 1817, carrying 46 guns and displacing 1065 tons. **Today it is the world's oldest wooden sail ship still afloat in Portsmouth.**



*HMS Trincomalee in her hey days*



*Maratha Busthead on HMS Trincomalee – now a museum in UK*

## **DID YOU KNOW ?**

Two Indian-built ships witnessed history in the making: the Treaty of Nanking, ceding Hong Kong to the British, was signed on board HMS *Cornwallis* in 1842, whilst the national anthem of the United States of America, '*The Star Spangled Banner*,' was composed by Francis Key on board HMS *Minden* when the ship was on a visit to Baltimore. Numerous other ships were also constructed, the most famous being *HMS Trincomalee* built in Bombay Dock in 1817. The Bombay Dock itself was completed in July 1735 and is in use even today.

### **There were Sanskrit terms for many parts of a ship.**

The ship's anchor was known as Nava-***Bandhan-Kilaha*** which literally means 'A Nail to tie up a ship'

The sail was called ***Vata Vastra*** a which means 'wind-cloth'.

The hull was termed ***StulaBhaga*** i.e. an 'expanded area'.

The rudder was called ***Keni-Pata,Pata*** means blade; the rudder was also known as Karna which literally means a 'ear' and was so called because it used to be a hollow curved blade, as is found today in exhaust fans.

The ship's keel was called ***Nava-Tala*** which means 'bottom of a ship'.

The mast was known as ***Kupadanda***, in which danda means a pole.

Even a sextant was used for navigation and was called ***Vruttashanga-Bhaga***.

But what is more surprising is that even a contrived mariner's compass was used by Indian navigators nearly 1500 to 2000 years ago. This claim is not being made in an overzealous nationalistic spirit. This has in fact been the suggestion of an European expert, Mr. J.L. Reid, who was a member of the Institute of Naval Architects and Shipbuilders in England at around the beginning of the present century. This is what Mr.Reid has said in the Bombay Gazetteer, vol. xiii., Part ii., Appendix A.

***Maccha Yantra*** - precursor to the modern Mariners compass:

"The early Hindu astrologers are said to have used the magnet, in fixing the North and East, in laying foundations, and other religious ceremonies. The Hindu compass was an iron fish that floated in a vessel of oil and pointed to the North. The fact of this older Hindu compass seems placed beyond doubt by the Sanskrit word *Maccha Yantra*, or fish machine, which Molesworth gives as a name for the mariner's compass".

It is significant to note that these are the words of a foreign Naval Architect and Shipbuilding Expert. It is thus quite possible that the *Maccha Yantra* (fish machine) was transmitted to the west by the Arabs to give us the **mariner's compass of today**.