

A Research of Shipbuilding Industry in Medieval Bengal



Abdul MotlebShaikh

Abstract—The present paper an attempt has been made the shipbuilding industry and its impact on maritime trade activities of Bengal. It was one of the major industries of Bengal and played an important role of maritime trade relations with Europe, Africa and Asia. Our attempt is mainly confined to the limits of the medieval Bengal. The methods of shipbuilding has mentioned in the contemporary sources of Persian, Arabic, Chinese, European and local sources. Though the maritime ships of Bengal were made Arabian and Chinese style but the war ships construction totally followed indigenous styles by the local technicians.

Keywords: Shipbuilding, Maritime trade, Medieval Bengal, Industry and Technicians

I. INTRODUCTION

India has a very long shoreline, covering from Sind to Bengal, and surrounding the southern Peninsula, and also a huge network of rivers, especially in Bengal. Thus, plentiful in rivers and linked with the Bay, was the major cause for shipbuilding industry in Bengal.ⁱ The indigenous shipping made Bengal self-sufficient in the matter of foreign affairs, defence and commerce.ⁱⁱ It was key industry of Bengal and played an important role of sea-born trade relations with Europe Asia and Africa. Our attempt is mainly confined to the limits of the medieval Bengal. The methods of shipbuilding has mentioned in the contemporary sources of Persian, Arabic, Chinese, European and local sources.

II. RAW MATERIALS

Bengal had sufficient area under forests which provided wood for the shipbuilding's. In this perspective AbulFazl says that 'widespread forests' in the Sarkar of Bazuha provided long and thick timbers of which masts were made.ⁱⁱⁱ The contemporary local source KavikankanaChandi supported AbulFazl and his viewed that, "Ships were constructed with the timbers of Jackfruit, Piyal, Sal and other trees which were available in Bengal during this period.' It further states, 'Some ships were hundred yards long and twenty yards wide.'" The front parts of the ships had the appearances of various animals carved on them and decorated with precious stones, ivory, silver and gold.^{iv}

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* Correspondence Author

Dr. Abdul MotlebShaikh*, Formerly Research Scholar,CAS, Department of History, AMU, Aligarh, Uttarpradesh, India.
(E-mail: abdulmotlebshaikh@gmail.com)

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III. TOOLS AND TECHNIQUES

The engineering arts of ship buildings, various kinds of ships and boats were made by artisans' class of Bengal. Therefore various methods were applied for the ship buildings. Here, we may discuss in brief: *galui* (prow), *danda*(spinal chord), *gura* (plank for sitting), *hansabata* (swanlike wooden screen extending between the prow and the roof), *koljhanp* (door-panel of the cabin)*jhanp* (door-panel made of bamboo mat), *soaribata* (straight path made of bamboo extending on either side of the roof), *charat* (angular space of wood adjacent to prow), *malumkath* (mast), *kandar* (helm), *baitha* (mal oar) *patoal* (large oar).^v These technical terms applied for the shipbuilding constructions. Later in the beginning of the 18th century the indigenous shipbuilding methods had lost due to the Europeans influence. The English East India Company built ships with European techniques and under the direction of the expert of European supervisors of their interest.^{vi} Various types of boats and ships were made such as river ships, maritime ships, warships, Haj pilgrimage ships, pleasure boat and so on.

IV. ANALYTICAL RESULTS& DISCUSSIONS

The engineering arts of ship buildings, various kinds of ships and boats were made by artisans' class of Bengal. Our attempt is mainly confined to the confines of the medieval Bengal. The methods of ship-building has mentioned in the contemporary sources of Persian, Arabic, Chinese, European and local sources. Various types of boats and ships were made such as river ships, maritime ships, warships, Haj pilgrimage ships, pleasure boat and so on. Ibn Battuta has mentioned the importance of these boats and remarked, "There are countless boats on its rivers, and each boats carries a drum, when boats meet, each of them beats a drum and they salute one another."^{vii} In river borne trade, Bengal actively involved Ganga valley, Sindh region and Assam was mainly exchanged the goods among these regions. About this kinds of ships, Thomas Bowrey mentioned as, "Great flat-bottomed vessels of an exceeding strength which are called Patellas and built very strong. Each of them would bring down 4,000, 5,000, or 6,000 Bengal mounds."^{viii} These boats were engaged goods exported and imported regions of Brahmaputra between Bengal and Assam also Ganges between Patna and Hugli- Balasor and Hugli- Dacca.^{ix} Besides trading activities in river route, these boards were also used for communications within these states.



The anonymous Portuguese traveller also viewed the ship building tradition and he found huge number of ships on the Ganges.^x Further, he remarks that back part and front part of these ships had similarities with the Portuguese ships and Latin Caravels. These ships were large in nature at the bottom and not used masts, which had a floors and a super structure. The unknown Portuguese observers subsequently and remarks that he had seen such type of ship was brought to Gaur by the governor of Sonargaon for the communication service of the Bengal Sultan.^{xi} Which was built with a round stern and had cabins embellished in gold, gifted galleries, mouldings like those of a galleon, two hundred paddles in motion, a prow with its stalk post looking like that of a caravel and parts of the body decorated in a variety of colours. Additionally, the Sultan had 130 ships which had gilt sewing. By the observations of the unknown Portuguese traveller, it can be assumed that most of these Bengali ships were rope-sewn representing what was generally regarded as the Arabian type.

Saptadinga was one of the important maritime ships used for inland and coastal trade.^{xiii} This ship was made by wood and its appearance was light and looking beautiful. Besides *Saptadinga*, the Chinese and Arabian types maritime ship building was in practice, specially under the patronage of Husain Shah and Nuusrat Shah in Bengal during 15th and 16th centuries.^{xiii} The Chinese ship known as Junk, generally made of deodar timber, had a single floor provided with 50 or 60 cabins. It was 250ft long and 110ft broad.^{xiv} The same method was also applied by the Sultans of Bengal. The structure of the ships such as over the flat bottom of the ship, the two sides were so much elevated that the whole frame took the shape of a rectangle. In the main body of the ship was built with a long narrow flat piece of wood and similar material of the type also used for making floors joined with iron nails. It was made watertight by stopping up any gaps in the main body of the ships. Furthermore, outside and inside the ships were a dividing wall or barrier were made of strong planks with several watertight compartments. The floor of the ships some rooms were built for residential purposes^{xv} Additionally, the floor-house towards the back part of the key mast was occupied by a compass-room, a prayer-room, several cabins, go downs and a kitchen.^{xvi}

The key mast was 90 fit high and on either side of the central line of the floor of the masts were fixed at an angle to the standing. The square headed balance lug-sail was of matting tightened with bamboo battens. For mooring the ship 6 anchors (anchors is a heavy metal object, usually shaped like a cross with curved arms, on a strong rope or a chain, which is dropped from a boat into a water to prevent the boat from moving away) were used. Moreover, the ship had a steering-oar and four masts for controlling the directions of the ship.

The ships authority also maintains the administrative representatives such as pay-master, superintendent of the compass, the helmsman, the inspector of masts and pillars. Additionally, the main working bodies are engaged to proper function they are as the chief lineman looking after ropes and his assistant, the head anchor-man and a second anchor-man, about 30 team followers, and an incense-keeper.^{xvii} On the basis of a reasonable calculation Simon

Digby states that a great oceangoing junk could carry “the maximum load of Cargo” of 720 tonnes or 1, 162 tonnes.^{xviii}

Arabian types of ships also being build till the 16th century in Bengal for Oceanic trade. The Arabian types of ships were made of planks sewn by rope of cocoa-nut fibres. Therefore, Salty water could not deteriorate binding materials of ships. These types of ship could able to carried adequate number of Cargo because these ships had neither keels nor decks. Separate rooms were also made for the sailors and some for the Cargo. The first phase of the 16th century records shows that these kinds of ships had capacity of carried 375 to 800 tons goods and sailors respectively.^{xix} The fragile or delicate nature of these boats has been mentioned by many travellers including Marco polo.^{xx} However, the flexibility of the Arabian type of ships caused by the planks sewn together by coconut chords proved very helpful as these very often resisted oceanic storms. Being lighter in weight in comparison with the junks, these ships offered room for the considerable load carrying capacity. The adjustability with the monsoon winds of Asia was an added feature of the boats. Duarte Barbosa has given a fine description about the model of the Bengali maritime ships. He remarks, “They (Bengalis) all were great merchants, and own large ships of the same build as those of Mekka, and others of the Chinese build which they call *jangos*, which are very large and carry a very considerable Cargo. With these ships they navigate to Cholemender, Malabar, Combay, Peigu, Tarnasari, Sumatra, Ceylon, and Malacca and they trade in all kinds of goods, from many places to others.”^{xxxi}

As a result with the expansion of trade along the sea-routes, a tradition of ship-building and shipping grew over the centuries in Bengal. Bengal’s maritime relationship with Ceylon, west Indian coast, Gujarat and the Maldives Islands and the ships from Bengal carrying commodities to South-East Asia, as mentioned in medieval Portuguese sources, seem to indicate the tradition of growing ship-building in this country. The ships used on the occasions of sending envoys and presents to China by some of the Sultans in response to the Cheng Ho Mission which visited this country in the early part of the 15th century, seem to have been built in Bengal. The Chinese type of ships called ‘*junk*’ and the Arabian ‘*dhows*’ were in use for several centuries.

V. CONCLUSION

Under the patronage of Bengal Sultans the artisans’ class built various kinds of ships which were used in for communication, trade and maritime warfare. The ships were also used in transporting the troops up and down the rivers and for attacking seashore, riverside or island-based fortresses during the military expeditions.^{xxii} The deltaic land of Bengal with many tributaries of the Ganges and heavy rainfall during rainy season cavalry was not effective for save the kingdom from outsiders. Therefore, strengthen the naval power was only alternative option for the Bengal sultans.



Ghiyasuddin Iwaz for the first time used war ships against the military expedition of the Ilutmish.^{xxiii} Subsequently during the times of Mughals the practice of war ships used against Assam mentioned detail by Mirza Nathan in his book *Baharistan-i- Ghaibi*.^{xxiv} Mention may be made various war ships were made the Mughal Subadar in Bengal such as *kosa, jalba, gurab, parinda, bajra, patila, salb, palil, bharbalam, khatgiri, mahalgiri and palwara*.^{xxv}

The artisan class known as *Nawara* made the ships under the patronage of the Mughals. Sometimes the services of European specialists were also utilised for the war ship constructions.^{xxvi} Though the maritime ships of Bengal were made Arabian and Chinese style but the war ships construction totally followed indigenous styles by the local technicians. The above description shows that ships of every kind (i.e. big and small) for both civil and military use, were made in good number and shipbuilding was a flourishing occupation during the medieval Bengal..

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