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Shipbuilding in the Mughal Period: A Historical Study

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Abstract

The Mughal period was an important period in Indian history that saw not only advances in architecture and administrative organisation, but also marked developments in maritime activities and shipbuilding. The paper "A Historical Study of Shipbuilding in the Mughal Period" focusses on the shipping technology developed in this era, the make-up of merchant and military ships, and the role of major ports in India. Shipbuilding developed as an organised industry during the Mughal rule. The ships built by Indian craftsmen at ports like Gujarat, Surat, Thatta, Bhopal and Bombay not only strengthened Indian maritime trade but were also a centre of attraction for foreign powers, particularly the Portuguese, the Dutch and the British. The Mughals also combined foreign methods with local technical knowledge in shipbuilding, making it possible to build larger and more durable ships. The use of ships was not limited to commercial purposes, but they were also used in military campaigns and royal visits. The Mughal rulers, particularly Shah Jahan and Aurangzeb, accorded royal importance to maritime security and shipbuilding. The socio-economic activities associated with shipbuilding also prospered during this period, strengthening India's international business reputation. Through this historical study, it is clear that shipbuilding in the Mughal period was not just a technical activity, but an essential part of India's maritime history from a strategic, economic and cultural point of view.

Keywords: Mughal period, shipbuilding, maritime trade, shipping technology, ports, water transport, military ships, merchant ships, artisans, maritime power.

Introduction

The maritime history of the Indian subcontinent has been extremely ancient and rich. From the Indus Valley Civilisation to the mediaeval Indian empires, trade, culture and politics have been spread through sea routes. When the Mughals entered the history of mediaeval India, they not only strengthened the land rule but also started giving importance to sea power. This aspect of the Mughal period (1526-1857) has often been neglected in historical discourse as to how mature and well-planned the technical and strategic activities such as shipbuilding were during this period. That is why this research, based on the theme 'Shipbuilding in the Mughal Period: A Historical Study,' is not only a retelling of a technical history, but also explores the broader maritime perspective that the Mughals adopted. Today, when India is again moving towards strengthening its maritime power and global trading position, it is necessary to look at that period of history from where the foundation of India's maritime consciousness was laid. The shipbuilding tradition of the Mughal period lies at the core of modern India's maritime



identity. This research topic is relevant because it brings to light the dimension of history that has so far been understood only on the basis of limited sources and superficial analyses.

The main objectives of the study are:

1. To make a detailed study of the shipbuilding trends and technological developments during the Mughal period.
2. Analyse how the Mughals organised maritime power with the help of local artisans and traditional methods.
3. To highlight the role of shipbuilding in the context of Indian ports and maritime trade.
4. To show the extent to which the maritime activities of the Mughal period were instrumental in establishing India on the world stage from a strategic, political and economic point of view.

When Babur established Mughal rule in India, India's maritime power was already in a developed stage. The south-western coastal areas such as Malabar, Coromandel and Gujarat had already come into contact with the Arabs, Portuguese and other European powers. Indian spices, textiles, ivory, sandalwood, and other precious items were exported to foreign markets from ports like Surat, Thatta, Bhavasal. It was clear from Akbar's reign that without the consolidation of maritime power, state trade could not be strengthened. So Akbar began to protect the ports of Gujarat and Bengal, royal workshops were established for shipbuilding. After this Jahangir and Shahjahan got grand ships built for sea travel. During the reign of Aurangzeb, the formation of a navy for maritime security also began, which proves that the Mughals understood and developed sea power not only for trade, but also from a military point of view.

The trend of writing Indian history has often been site-centric. Therefore, the Mughal maritime activities, especially the technical aspects such as shipbuilding, were not given the required importance. But the fact cannot be ignored that ships built by Indian craftsmen in the same period were more durable, capable of carrying loads and adapted to longer sea routes than European ships. Shipbuilding was not just a technology, it was an integral part of maritime culture. It represented trade, diplomacy, pilgrimage, military action and royal glory. A historical study of shipbuilding can, therefore, rediscover the rich technological tradition that placed India at the centre of global trade. Further, this study also shows the level of navigability possessed by the traditional artisans and craftsmen of India, and how they imbibed foreign techniques to give their boats and ships a unique look. This knowledge can be a source of inspiration for today's India, when it is moving towards re-establishing maritime power through schemes like 'Make in India' and 'Blue Economy'.

The Strategic and Economic Structure of the Mughal Period

The establishment of the Mughal Empire opened a new chapter of political stability and administrative centralisation in the Indian subcontinent. Although the power of the Mughals was mainly based on land based military campaigns, gradually they also understood the importance of the maritime domain and made it a means of their imperial expansion and economic prosperity. The inclusion of maritime strategy, development of trading ports and giving priority to the protection of waterways in the strategic policy of the Mughals is proof that their approach was not limited to the land. The initial expansion of the Mughal Empire was limited to the land borders. But from the time of Akbar in particular, attention began to be paid to the sea. Gaining authority over important coastal provinces like Gujarat and establishing control over maritime activities there was a strategic step towards making the empire more powerful economically and strategically. By establishing military authority in the regions of Gujarat, Bengal and Konkan, the Mughals not only extended their sphere of control but also dominated the navigational activities of these regions. During the time of Shah Jahan, the Mughals took shipbuilding under state patronage and arranged for royal ships to guard the ports. Aurangzeb

strengthened the naval system to challenge the maritime dominance of the Marathas in South India and started operating maritime armies. This makes it clear that sea power was seen as an envisaged dimension in the policy of imperial expansion, especially in areas where foreign companies such as the Portuguese, the Dutch and the British were seeking to establish control over Indian trade on the basis of their sea power. This policy of the Mughals proved to be helpful in protecting their maritime interests as well as in ensuring the revenue system.

Major centres of maritime trade in Mughal India were located at various coastal ports. Ports like Surat, Bassein, Kichcha, Thatta, Machilipatnam, Hooghly and Balasore were very important from the commercial point of view. From these ports spices, textiles, silk, indigo, medicines and other valuable commodities were exported to West Asia, Africa and Europe. Surat in particular was a port that became a major centre of international trade under Mughal rule. From there ships also sailed for the pilgrimage to Mecca, which also made it important from a religious point of view. The Mughal administration appointed port officers to oversee these ports, who were responsible for trade as well as security and tax collection. The warehouses, arsenals, and imperial shipbuilding centres built at the ports make it clear that the Mughals viewed these trading centres not only as economic units, but also as strategic sites. Control over trading ports meant enrichment of the treasury, surveillance of foreign companies, and strengthening of trade routes.

The security of sea routes was a very important requirement of the Mughal period. Protection from pirates, especially those operating in the Arabian Sea and the Bay of Bengal, was a major challenge. For this, the Mughals established coastal outposts in collaboration with local rulers and fortresses. Security measures included maritime patrols, the deployment of royal ships, and the establishment of tax collection points along the waterways. Akbar and Aurangzeb in particular made efforts so that the merchant ships could reach their destination at an uninterrupted speed. At ports like Surat, the Mughal administration developed a kind of naval system that monitored, protected and guided ships. Additionally, a strategic approach was also adopted in compromising and competing with foreign powers, thereby maintaining the power and dominance of the Mughals over the waterways. Many of the confrontations with the Portuguese are notable in this context, where the defence of maritime sovereignty was a major factor.

Shipbuilding centre under the Mughals

The maritime activities of the Indian subcontinent emerged in a mature and orderly fashion during the Mughal period. Although the original power of the Mughals was land-based, they recognised the potential of sea power and made several attempts to adapt shipbuilding to an organised structure. As a result, shipbuilding centres were established in various coastal towns, which proved to be of great strategic, economic and technological importance. The principal ones are Thekkurat, Khambhat, Bengal (especially Chittagong) and Machilipatnam. The development of these centres, the role of the local artisans involved, and the materials and techniques used in the construction process established India as a powerful maritime power. Surat was one of the most prominent shipbuilding and trading centres under the Mughals. The geographical location of this port, its proximity to the western sea routes, and the special administrative attention given to it since Akbar's reign, made it an international trading centre. During the time of Shah Jahan and Aurangzeb, there was a large-scale shipbuilding here, which was used to transport Hajj pilgrims, merchants and soldiers. Many ships used to depart from Surat towards Mecca every year, which made it important from religious point of view also. Khambhat (formerly Cambay) was another famous coastal town of Gujarat, where the Mughals encouraged the tradition of shipbuilding. From here there was contact with Arab and Persian traders and it served an important function of connecting India with West Asia.

The Chittagong region of Bengal was of particular importance. Located in the Ganges-Brahmaputra delta region, the port was used for the construction of large ships and the transportation of trade goods. The demand for Bengal's silk textiles, indigo and sandalwood, extended to Europe, making Chittagong an extremely prosperous centre of shipbuilding and trade. Machilipatnam in South India



was also a very active port under the Mughals. The port was not only a centre of trading activities with the Dutch, the Portuguese and the British, but also a major destination for locally built ships. From here spices, clothes and other items were exported through sea.

The basic foundation of Mughal shipbuilding was the traditional knowledge of local artisans, craftsmen and craftspeople. These artisans had kept the tradition of building wooden ships alive for generations. Local artisans from Surat, Bengal and Machilipatnam were particularly renowned for their ability to fabricate large ships, understanding of hydrodynamics, and water-resistant designs. Most of the shipbuilding work was done by caste-based professional groups, such as the Mallahs, carpenters, blacksmiths, sail weavers and rope-making jute workers. These artisans modified their traditional methods by imbibing various foreign techniques, making Mughal shipbuilding more efficient and competitive. The Mughal regime took many artisans under state patronage, gave them financial assistance and set up royal workshops (karkhanas) to organise their craft work. Not only this, some Muslim rulers sent artisans with ships for visits to Mecca and other Arab countries, so that they could learn foreign techniques and develop it in the Indian context.

The quality and variety of materials used in Mughal shipbuilding made India self-reliant in this field. Durable and waterproof woods such as teak, shisham, sal and arjun were often used. Teak was especially sourced from the forests of western India and was also highly popular among European shipbuilders. Elements such as iron nails, copper sheets, straw and glue were also used in shipbuilding. To make a waterproof layer, a powder mixed with alum and oil was used. Strong cotton and jute fabrics were used for sails. Technically, the Indian craftsmen made the lower surface of the ships bulky, which reduced the effect of high waves. The design was suited to India's maritime environment. In addition, local technology used to prepare each part of the ship separately and attach it at the end, which also facilitated the repair work. European tourists and traders, especially the English and the Dutch, admired the strength and seaworthiness of Indian ships. At times, they incorporated finished ships from Surat or Bengal into their trading fleets, proving that India under the Mughals was the centre of a rich and sophisticated shipbuilding tradition.

Techniques and types of shipbuilding

Shipbuilding developed as a sophisticated and commercial process in the Mughal period, driven by a combination of traditional Indian craft knowledge and contemporary foreign techniques. It was not only an economic or strategic necessity, but also an excellent example of technical efficiency, workmanship and scientific understanding. In the process of shipbuilding, the quality of wood, methods of measurement, waterproofing techniques, and their design based on the nature of the ships (commercial vs. combat), were all planned and systematically implemented. The selection of wood was an extremely important process in the construction of ships during the Mughal period. For construction, wood was often chosen that was water-repellent, strong, light, and long-lasting. Teak (jamma) played a major role in this process. Teak from Gujarat and Malabar regions was most widely used due to its durable nature, density and water resistance. Apart from this, wood of Sal, Arjun, Sheesham and Mango were also used as per requirement. Traditional methods of shipbuilding such as 'hastaman', 'angul', and 'yojan' were used by local artisans for generations. However, later, when the influence of foreign sailors and engineers increased, European measurements such as 'feet' and 'inches' also began to appear in Mughal workshops. The ship's length, width, depth, and hull structure were all decided from a scientific point of view. In the method of construction 'edge joining', 'adhesive technique', and 'nail hammering' were majorly used.

The ships of the Mughal period can be divided into two major categories - merchant and war. The design of merchant ships prioritised load-carrying capacity, internal storage arrangements, and the ability to travel long distances. The structure of such ships was wider, deeper and stronger so that they could carry more cargo (especially spices, textiles, indigo, sandalwood, etc.) to foreign countries. These sometimes had upper decks up to two or three levels, where different types of goods were kept. In contrast, battleships were relatively light, fast-moving, and armed. In these, special places were made

for the cannons and the structure of the ship was such that it could maintain more speed and balance during the war. In the Mughal period, such warships were used especially against pirates or to control the activities of foreign powers (such as the Portuguese).

Water resistance was one of the most important features of the shipbuilding technique of the Mughals. The outer surface of the ship was painted with a mixture of coltar, neem oil, chalk powder and plant glue, which protected the ship from water and insect impact. In some areas, a waterproof coating was also made from a mixture of fish oil and coconut. The teak wood itself was water resistant, giving the ship greater protection. The navigational instruments used on ships included traditional tips such as the 'compass' for direction, the 'knot rope' for distance measurement, the 'water clock' for time measurement, and the 'lead line' for depth measurement. Some experienced Mallahs were also able to determine direction by 'star counting'. This knowledge was usually inherited and special training was imparted in the Mallah families. Mughal artisans manufactured these instruments locally and often modified them to suit local conditions. For example, the navigational system prevalent in the Arabian Sea was not followed in the Bay of Bengal as the ocean currents and seasonal winds were different. Thus, localisation of technology was a special feature of the shipbuilding process of the Mughals.

The Mughal Maritime Policy and Foreign Trade

India's maritime policy and foreign trade orientation during the Mughal period made the sub-continent a central point in the global trading system. Despite being a land-centric empire, the Mughals deeply recognised the power of the sea and the commercial possibilities it offered. As a result of this identification, they established trade relations with Persia, Arabia, Southeast Asia, and Europe, balanced competition with foreign merchants, and developed an organised policy of administrative control over coastal ports. From the earliest part of the Mughal period, India's maritime trade with Persia and Arabia was strong. Indian trade with Persia was centred on textiles, spices, medicines and diamonds and jewels. Persian merchants regularly visited ports like Surat, Khambhat and Thatta and brought horses, dates, precious carpets and perfumes to India in return. Similarly, the pilgrimage and religious connection between India and Mecca-Medina through the Arab trade network was also accomplished through the sea route.

Indian trade with Southeast Asia, especially with regions such as Malacca, Sumatra, Java and Burma, was very prosperous. India used to get teak, spices, gems and cane from here. In return, India exported silk textiles, sugar, copper items and cotton fabrics. Ports like Bengal and Machilipatnam played an important role in this region. Trade relations with European countries - especially Portugal, Holland, France and England - were complicated. On the one hand, they were big consumers of Indian goods and on the other hand, they were interested in controlling India's maritime trade. This contradiction forced the Mughals to adopt an inclusive but careful strategy in conducting foreign trade.

Portuguese traders entered India in the 16th century and soon began to dominate the sea routes with their naval power. Their bases were established in the coastal areas like Goa and Damão from where they used to intercept ships in the Arabian Sea. The Mughals were deeply offended by this behaviour, especially due to the incidents of stopping the ships going on Hajj pilgrimage. Akbar and Jahangir not only objected to this behaviour of the Portuguese but also tried to control them diplomatically. When the British East India Company and the Dutch East India Company arrived in the 17th century, competition in maritime trade increased. The Mughals used this competition to increase their commercial power. During the reigns of Jahangir and Shah Jahan, the British were allowed to trade in Surat, but this was clearly based on the terms of the Mughals. The British had to pay toll at the port and their ships were also searched.

The Mughals organised the coastal ports into administrative units and appointed special officers there for tax collection, security and trade management. At ports like Surat, Chittagong, Machilipatnam, Thatta and Bassein, officers called 'Shahbandars' were appointed whose job was to collect tolls, grant permits to traders and resolve local disputes. There were two types of maritime taxes - the 'freight' tax on goods and the 'toll' for the operation of the ship. These taxes were determined on the basis of



the weight of the ship, the nature of the cargo and the distance. In addition, foreign merchants were charged special fees, which were determined by the local administration according to their needs. Security occupied the highest place in the port policy of the Mughals. Armed guards, water police and detectives were stationed at each port. This system not only ensured trade security but also maintained surveillance on the activities of foreign companies.

The State of the Shipbuilding Industry at the End of the Mughal Period

The last phase of the Mughal Empire was a period of political instability, administrative disintegration and economic stagnation. After the death of Aurangzeb (1707 A.D.), the decline of central authority began in India and it had a direct impact on maritime activities. While shipbuilding had earlier developed as an organised and prosperous industry under the patronage of the Mughals, the tradition gradually began to decline. The state of the shipbuilding industry during this period can be understood in three important perspectives - the decline after Aurangzeb, the limited patronage by the Nawabs and regional powers, and the challenge of European shipbuilding technology. During the reign of Aurangzeb, maritime policy was given importance from the military point of view. To compete with the Marathas and the European powers, especially in South India, he gave state patronage to shipbuilding activities in the coastal areas. But after his death, when the War of Succession broke out and central authority weakened, the focus of the administration shifted to the defence of land borders and the suppression of internal rebellions. Urgent military needs took precedence over technological and long-term investments such as shipbuilding. In addition, the position of the royal treasury continued to decline, depriving industries that provided long-term profits of state patronage. The structural weaknesses of the Mughal court also affected the administration of the ports. Security and commercial controls were relaxed in Surat, Machilipatnam, Chittagong etc., which slowed down the pace of shipbuilding at these centres.

With the decline of Mughal power, regional powers began to emerge in India. Emerging states like Bengal, Awadh, Hyderabad, Mysore and Maratha power made policies to protect their territorial interests, but most of them did not give priority to sea power. The Nawabs of Bengal certainly promoted some shipbuilding activities in Chittagong and Midnapore, but that too was largely confined to local trade or limited military purposes. Shipbuilding was an industry that required constant technological innovation, heavy capital investment and long-term policy. The nawabs and petty kings did not have the capacity to meet these requirements, and even the little capacity they had could not withstand the political instability and economic policies of the British. After the British conquest of Bengal (1757) and gradually establishing control over the coastal areas, the independent maritime activities of the Indian rulers almost came to an end.

The 18th century saw significant changes in shipbuilding technology in Europe. The structure of iron, the early practicality of the steam engine, the structure of the ship from a scientific point of view and the new tools of navigation made European ships extremely capable. Indian traditional methods, which were still wood-based, began to lag behind these techniques. The British and the Dutch began to set up their own shipyards in India, where they built ships of their own design using Indian artisans. This led to the exploitation of traditional Indian craftsmen on the one hand, while on the other hand their traditional centres and methods became irrelevant. Older shipbuilding centres such as Surat and Machilipatnam gradually came under British control and ships were now only produced for the East India Company.

Conclusion

The history of shipbuilding in the Mughal period is a testimony to a technological, economic and strategic development that did not find the desired significance in the course of Indian history. While similar to land-based administration and architecture, the maritime policies of the Mughals, the port system established by them, and the structured tradition of shipbuilding presented India as

an influential site in the mediaeval world trade system. This research brings this neglected aspect to the centre and reinterprets the historical perspective in which India was not just a consumer but also a creative maritime power. The gradual development of shipbuilding from the early phase of the Mughal period to the reign of Aurangzeb was the result of a well-planned strategy. After Akbar's acquisition of the maritime provinces of Gujarat and Bengal, the shipbuilding centres there received state patronage. A highly advanced tradition of shipbuilding developed with the help of local artisans in Surat, Khamhat, Machilipatnam, Chittagong etc. Shipbuilding was not just a technical process, it was a means of trade, pilgrimage, military transport and expansion of political power. Instructions on shipbuilding issued by the royal court, special workshops for ships, and a policy of port control show that the Mughals systematically promoted the region. Subjects like maritime history and shipbuilding have not been given enough importance in Indian historiography. There is also a lack of curriculum in schools and universities in this direction. It has become necessary to re-evaluate this tradition of shipbuilding scientifically, socially and economically and bring it to the centre of public memory and research.

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