Art Meets Archaeology: Revealing the Structure of an Ornate Passenger Ferry

Clues appear in unlikely places, and in this case they came from “China’s Mona Lisa.” The Peabody Museum ledger notes the model to be of Chinese origin. The remaining space for description or categorization is blank. With little written record to lean on, I turned to the model itself and a famous painting. I see a flat bottom and a U-shape keel. I notice an overhanging transom stern and a detached rudder that on the real vessel would have fit snugly. I consider the superstructure, how ornately carved panels close in the vessel. Each of these structural features in the model, and many others, narrow down the purpose and dating of the vessel it portrays.

Armed with this structural checklist, I came upon an ancient Chinese scroll depicting life along the river. The famous Song dynasty scroll, discussed here, shows several groups of vessels negotiating the turns of the river. The intricate details of these vessels reveal an unmistakable match to the model. By closely comparing the features of the model to the structural elements of the vessels in this painting, I argue that the model represents a riverboat purposed for the ferrying of passengers.

A ship’s construction style is significant because it often reveals the purpose of the ship and where it was used. The hull of the model offers the first indication that this vessel was sailed along the internal waterways of Northern China. The hull has a relatively flat bottom with frames rising in a gradual U-shape [Figure 1]. The wooden keel gradually rises then sharply angles upwards. The painted dots along the hull of the model represent fastenings, and archaeological analysis of ships during this period shows that iron nails were used to join planks (Catsambis, Ford, Hamilton, 2011: 549). The fasteners were driven diagonally into the planks to hold them
firmly together [Figure 2]. The roundness of the vessel’s hull indicates a shallow draft, meaning the ship could have traveled along rivers and channels without getting stuck in the mud.

Another indication that this vessel was used as a river barge rather than an ocean-going vessel is the bluntness of the bow. A vessel that needs to cut through choppy waves would have a relatively pointed stem, lending the vessel a hydrodynamic shape. This model, in contrast, has sides that begin to angle in but then become squared off. There is no visible stem post. This vessel would move slowly through the water, but the blunt bow would also allow for passengers and crew to stand there as they onboard or steer the ship. Moving from the bow to the stern, I noticed that the stern shares the blunt squared-off characteristic. While the bow is open and uncovered, likely to enable easier passage, the stern is covered. This type of stern is known as a transom stern [Figure 3]. A transom stern has a flat shape that extends to the waterline. This design offers a simple construction for builders and would have provided the ship a larger deck area with room for the rudder and its chain (Green, 1997: 9).

Reconstructing the ship upwards we now arrive at the decks. This model features a hanging deck, where the deck edges extend outwards from the gunwale. Close examination of the scroll also shows this feature. These decks would have offered a useful place for oarsmen to stand. Those oarsmen would have had two types of oars to work with. The model contained several shorter oars and one long oar. The shorter oars were likely used to pull the vessel forward from the port and starboard sides, while the long pole could act as a rudder [Figure 4]. In especially shallow parts of the river, the main rudder may have been lifted to avoid catching the bottom.

While the crew stood on these side decks to propel the vessel, there was also space in the shade thanks to a superstructure. The second deck is enclosed with ornate panels that could have
been opened to let in air or closed for privacy or shade. The beautiful painting and carving of the panels and the rest of the ship suggest that this river vessel was used for carrying people rather than cargo. While many river barges were used for transporting goods locally, similar designs could also be used as ferries and aristocratic houseboats (Priest, 1948: 284). Boats selling fish and other food items would have tagged along behind “traveling ships” (Ihara, Mayumi, 2001: 142). The term traveling ships suggests that the rivers were not only used for transporting goods but for carrying people moving along the river. Whether the vessel was a common ferry or an aristocratic houseboat is difficult to say, but there are no indications that regular cargo barges of the time would have had paintings or carvings. The decoration and enclosed superstructure both lend evidence for a passenger river vessel.

A famous piece of Chinese art offers a key clue in the reconstruction of this model as a travel ferry during the Song dynasty. The structural details of the vessel matched many of those found in the painting, backed up by archaeological record and analysis. The flat bottom and U-shaped hull clearly indicate a vessel built for shallow waters. Further, I argue that this was no ordinary cargo barge. The enclosed deck and ornate panels suggest that this river craft was more decorative and luxurious than most. While other river craft carried fish and food products from town to town along China’s rivers, this vessel likely carried travelers who were also interested in moving around Northern China. By reconstructing the ship through its structural components, piece-by-piece the vessel’s purpose comes to life.
Figure 1

Model of Chinese barge displayed in Peabody Museum. (Image by Adrianna Korte-Nahabedian)

Figure 2

Figure shows planking and fastening style found on an excavated Chinese wreck in this time period. (Image Catsambis, Ford, Hamilton, 2011: 549)
Section of “Along the River during the Qingming Festival” scroll. Right vessel shows squared transom stern and rectangular shaped rudder similar to the one found on the model. (Image from Green, 1997: 6)

Vessel on the right shows the superstructure, panels, and extended sides of the deck. Vessel on left shows crew using long oar for steering. (Image from Green, 1997: 8)

Bibliography


