

Medieval Ships of East Asia Illustrated in Goryeo Dogyeong

Jin Ho-shin (National Research Institute of Maritime Cultural Heritage)

ABSTRACT

The paper focuses on the ships in the Middle Ages of East Asia. *Seonhwa Bongsu Goryeo Dogyeong*¹ illustrates the early period of Goryeo, a time that lacks of historical records. The book contains information of official ships that envoys took and private ships in Song dynasty. It details their shape, weight, length, passenger capacity, and ship accessories. Illustrations include a patrol vessel, official vessel, Songbang², Makseon³, Chaeseon⁴, etc., according to the regions and usages of Korean shipping. The study is carried out by analyzing features of official and private ships represented in *Goryeo Dogyeong*, comparing them to features of Chinese ships and their accessories recovered from underwater, and figuring out their scantling lists. Also, usages and measurements of ships in the Goryeo period represented in the historical records, such as Songbang and Makseon, were compared with shipwrecks discovered underwater.

The research on ships in the Middle Ages of East Asia is expected to flourish information of vessels in the early Goryeo period (918–1392 CE) as well as vessels in Song dynasty (960–1279 CE). Similarities and differences are in the vessels of the Middle Ages discovered from underwater of East Asia. The research is focused on analyzing types and features of vessels used at that period, according to the countries and regions, based on *Goryeo Dogyeong*.

Keywords: Gwanseon, Songbang, *Goryeo Dogyeong*, Sunseon

INTRODUCTION

This paper is about ships of East Asia in the twelfth century. *Seonhwa Bongsu Goryeo Dogyeong* contains abundant data on ships of the time when historical data on early Goryeo period is scarce. Therefore, the ships of the Song Dynasty in *Goryeo Dogyeong* correspond to Shenzhou ships and Kezhous ships that the envoys took and it contains lots of information on Chinese ships in the twelfth century. In addition, the Goryeo ships that appeared at the reception ceremony for the delegation on June 6, 1123 CE, when Seogeung and a party of envoys from Song arrived at Gunsan Island, were Sunseon, Gwanseon, Songbang, and Makseon. It would have basically taken the form of a Hanseon⁵.

So far, researches on sunken ships such as Wando shipwreck, Dalido shipwreck, Anjwa shipwreck, Taeon shipwreck and Mado shipwreck excavated from the seas of Korean Peninsula were conducted mainly in terms of the information on Korean ships during Goryeo period; but it seems that various kinds of ships existed given the Korean ships mobilized for the welcoming ceremony at Gunsando in *Goryeo Dogyeong*. Therefore, this paper examines various kinds of ships utilized on the Korean Peninsula in the early Goryeo period (918–1392 CE) through the records of *Goryeo Dogyeong* in addition to Kezhous ships that the envoys took from Song Dynasty in 1123 CE.

¹ Full name of *Goryeo Dogyeong*

² Big vessel made up of bamboos

³ Vessel closed by curtains

⁴ Vessel used for the performance

⁵ Korean ship

SHIPS OF GORYEO ILLUSTRATED IN GORYEO DOGYEONG

Sunseon (*Seonhwa Bongsa Goryeo Dogyeong*, volume 33)

Sunseon is a flat-bottomed ship, which has very simple structure as it is said that a mast was erected in the middle, there was no boathouse on the deck, and only oars and rudder. Ten Sunseon were at the gateway to the northern island of Seonyodo from Namhaemun gate between southern island of Seonyodo and Munyeodo. It seems that Sunseon was a ship that local officials near Gunsando used to welcome envoys and for regular tours of the jurisdiction. Judging from the fact that there is only one mast on the deck and no pavilion, it is presumed to be a Goryeo ship used as a ship for sailing with the size of Chonmaseon or small flat-bottomed ship. It seems that the ships were mobilized from the nearby area for welcoming and escorting envoys.

Gwanseon (*Seonhwa Bongsa Goryeo Dogyeong*, volume 33)

Gwanseon has a pavilion covered with a roof on the deck and there were doors and windows below them. There were handrails around the deck and the place prepared by connecting the crossbar (yoke) to the plate to stretch it to the outside and deck is wider than lower plate. The hull did not have plate⁶ and it is considered that the bent log was fixed like a wedge by straightening it (to the left and right plates).

On the bow is a wheel for winding the anchor line and a large mast was on the deck. One-fifth of the uppermost sail was laid out (punched) without stitching and it is for the preparation of the sailing against the wind. When envoys enter the territory of Goryeo, more than ten ships called Jeopban, Seoneon, Gwangu, and Gongju come from the east. The size is the same, but the tent was installed only on Jeopbanseon.

Ships in the records of the Goryeo Dynasty included the Nuseon and the Gwaseon as Gunseon and the Chomaseon and the Pyeongjeoseon as Jowoonseon. There are no detailed records about the size, structure, and decoration of the ship including the mast. However, the following records provide some relevant detail:

1. There is a record of ‘增治舟舸百餘艘，大船十數，各方十六步，上起樓櫓，可以馳馬’ in the *Goryeosa*. In *History of Ships* by Kim Jae-geun, the size of Nuseon was measured about 30 meters in length.

2. In the record of *Goryeosa*, ‘定十二倉，漕船之數，石頭·通陽·河陽·永豐·鎮城·芙蓉·長興·海龍·海陵·安興，各船六艘，並哨馬船，一船載一千石。德興二十艘，興元二十一艘，並平底船，一船載二百石.’ is mentioned, which means 160,000 kg can be loaded on one Chomaseon and 32,000 kg can be on one Pyeongjeoseon.

3. In the Japanese historical record of *Shoyuki* (1019 CE), the tenth year of King Hyeonjong that a Japanese woman captured by pirates was rescued by Goryeo naval forces and returned to Japan: ‘Goryeo ships had four oars on left and right sides respectively and there were seven to eight oars on one side and various tools and weapons were stored in the middle of the ship. It was said that there were five to six boatmen and 20 soldiers on the ship. In addition, it was recorded that a horn made of iron was attached to the front of the battle ship. Some information was described incorrectly from the perspective of a woman who does not have professional knowledge on ship and some characters are hard to interpret, limiting correct understanding of the information but what is clear is that it refers to Gwaseon of Goryeo.

‘上爲茅蓋，下施戶牖’ in *Goryeo Dogyeong* mentions Gwanseon refers to post of Panokseon in Joseon period, which refers to Nuseon in the Goryeo historical record. As mentioned in the first reference above,

⁶ Bulkhead, in the case of Chinese ships, attached outer plates by making a number of watertight compartments

the full length is about 30 meters. However, it is considered to be Nuseon with simple post structure on the deck as there was no description on the structure of upper deck of Panokseon in Joseon period.

In *Goryeo Dogyeong*, it is said that ‘six ships carrying soldiers escort envoy ships’ so Gwanseon recorded by Seogeung is Gwaseon of Goreyo.

Songbang (*Seonhwa Bongsu Goryeo Dogyeong*, volume 33)

Songbang is a ship of Gunsando. It has straight bow and stern and there are five cabins covered with a belt and there were small rooms on the front and back sides. A table and shade were placed. At the center was silk mat situated, which is the most splendid. Only high-ranking officials could be on that place.

In the record of history of Korean ships, there was no information on Songbang and it is shown only in *Goryeo Dogyeong*. While Seogeung used ‘船’ to describe Suncheon, Gwanseon and Markseon, he used ‘舩’ which is very unfamiliar for Songbang. Given the type of record in *Goryeo Dogyeong*, given the fact that ‘船’ was used to consider functions and operation of the ship, ‘松’ and ‘舩’ should be considered separately.

First of all, ‘舩’ is called a double-hulled ship in the Chinese dictionary and it is described as ‘舩就是一種將兩船併爲一體的單體船’ in the ancient shipbuilding section of the Fujian Provincial Agency for Cultural Affairs. It is interpreted to be a single ship that combines two ships. And in the painting of Nakshinbudo drawn by Gao Ji in the Song Dynasty, a picture of a painting in the Eastern Jin Dynasty, and it is a ‘double-body ship’.

Then, it is a question of what meaning the ‘松’ character has. The connection between the pine tree ‘松’ and the pear is not immediately connected. If so, Seogeung called Songbang ‘a ship from Gunsando’ and it is reasonable to assume that this word was made for a one-time event to suit the purpose of the event.

Therefore, Songbang can be considered as a ship specially designed for welcoming ceremony in Gunsando for high-ranking officials from Song Dynasty. Likely a double body ship, where two flat-bottomed ships are connected with broad deck for the convenience of the highest-ranking officials. In addition, Chaebang shown in the drawings of Gunsando are a kind of Songbang, which is more specially decorated. There is a painting called Feast for Pyeongyang Governor in Joseon period and it shows the feast for Pyeongyang governor together with citizens on the background of Daedonggang River and Pyeongyangseong. At that time many ships and people on the ship were drawn in the order of the social ranking and ranking of government officials. On the back of the largest ship a main character is located at the center, there is a ship where three ships are connected and three people rowing. This ship can be recorded with the Chinese character ‘舩’.

Makseon (*Seonhwa Bongsu Goryeo Dogyeong*, volume 33)

Makseons are placed on all three islands, and middle and lower ranking envoys are carried on them. The roof was made of blue cloth at the top, and poles were used as pillars at the bottom, and the four corners were each tied with colored strings. It is a ship decorated with a design with four pillars erected on the deck of the ship and covered with a blue cloth roof. The three islands refer to Gunsando, Mado, and Jayeondo, which were anchored during the course from the time Seogeung and his party entered the Goryeo Sea to the Yeseonggang River.

CHINESE SHIP ILLUSTRATED IN GORYEO DOGYEONG

Specifications and structure of Kezhou

Transportation with the Korean Peninsula was blocked by Liao and Jin during the Northern Song Dynasty (960–1279 CE), so the transportation to Goryeo mainly used the sea route. In the fifth year of Seonhwa (1123 CE), senior envoy No Yun-jeok and assistant envoy Bu Muk-gyeong rented and remodeled Gaekseon to carry the government officials and attendants among the double boats built as civilian ships in Fujian Province. Seogeung said, ‘Shenhou Ships and Kezhou Ships were similar in terms of shape’, and recorded Kezhou as Gaekju. Gaekju is said to be ‘其長十餘丈, 深三丈, 闊二丈五尺’, and if you look at the specifications, it is about 31 m in length, about 9.3 m in height and 7.7 m in width. The depth of the ship is recorded at 9.3 m, which is a big difference compared to other double ships of the same time.

1. Nanhai ship 1 of Song Dynasty was 30 m in length, 3.5 m in depth and 9.8 m in width
2. Shipwreck excavated from Cheonju in Song Dynasty (960–1279 CE) was 34 m in length, 4 m in depth and 11 m in width
3. Sinan shipwreck from Yuan Dynasty (1279-1368 CE) was 34 m in length, 3.7 m in depth and 11 m in width
4. Hai fanchuan (the escort ship for Ryukyu Kingdom) from Qing Dynasty (1644–1911 CE) was 30 m in length, 3.5 m in depth and 7.4 m in width.

Kezhou of Seogeung, Nanhai shipwreck no. 1, Sinan shipwreck and Cheonju are double ships from the same time with similar length and width but Gaekju has twice higher depth than other ships. That is considered that Seogeung referred to the eight areas of stern.

Seogeung used the word ‘division’ while explaining the internal structure of Kezhou. The word division is used for dividing plane structure and lateral structure. Therefore, it is necessary to look at the spatial division first. First of all, plane structure is divided as follows. From the bow are pointed area, square area, mast place, area for tools for ships, area for food and area for water as well as crew room and room for living goods, firing and weapons and wheelhouse. Side structure is divided at the lowest bottom, stones, coins and windows were placed to put load for utilizing the space as ships’s blast. The second floor was for crew activity space and the third floor had cooking room and place for storing mast, sail and other items. The fourth floor was place for high-ranking officials such as senior envoy and assistant envoy. According to the division mentioned in *Goryeo Dogyeong*, fire pit and water pot were placed in the outer window on plane side and the first floor on the lateral perspective. The rooms for soldiers are located on the second floor. There are four rooms on the second floor. It has double deck structure on the third and fourth floor.

Accessory of Kezhou

At the center of the side pillars of the bow is a wheel and a rattan rope on top of it and its length is 500 cheok⁷. At the bottom is an anchor stone and both sides of the anchor stone had wooden anchor support. If there is a big wave, Yujeong was added and the method of use is similar to that of Daejeong. It is placed on the both sides of the anchor. While sailing, it is withheld by wheeling. At the stern of Kezhou are small and large two wooden structures and they are changed depending on the depth of sea route. Upon sailing in open ocean, two oars are lowered to the sea and this is called the third control. In addition, large bamboo baskets were placed at the sides of the ship to block waves and water flowing into the

⁷ Measuring unit for length (1 cheok is similar to 30.3 cm)

ship. Each ship has 10 oars. The main mast is about 10 jang⁸ in height and bow mast is about 8 jang in length. When the wind is not strong, 50 pieces are spread and when there is a side wind Yibong sail is used. The wind strength is controlled by adjusting the sail from left and right. When there is a mild wind, Pobeom added to the top of the main mast is used. However, if there is a reverse wind from the front side, the ship cannot move forward. After placing post, the wind direction is identified with bird's feather, which is called Oryang.

CONCLUSIONS

As explained above, there were various shapes and kinds of ships in East Asia in the twelfth century based on *Goryeo Dogyeong*. Senzhou is Gwanseon made into big and splendid ship by Song Dynasty (960-1279 CE) for diplomatic purpose and Kezhou was improvement of private vessel used in Zhesiang and Fujian regions and used for envoy ships. The way of making Shenzhou and Kezhou seemed to continue in the tradition of making Jeonghwaboseon in Ming Dynasty (1368-1644 CE) and Bongju when envoy from Ming Dynasty went to other countries. The escort ship used when envoys from Song Dynasty arrived included Gwaseon, Nuseon, Chomaseon and Pyeongjeosun which succeeded the traditional Goryeo ship pattern. Seogeung expressed the shape of Nuseon and Gwaseon, utilized in Gunsando as Gwanseon and expressed Chomaseon and Pyeongjeoseon as Sunseon. What is noteworthy is Songbang and Chaebang. As explained earlier, Songbang is a special purpose ship for escort by connecting two ships for spacious area. All Goryeo ships shown in *Goryeo Dogyeong* were Korean ships that succeeded the tradition of Goryeo Ship and its style continued to Panokseon and Jowoonseon in Joseon period (1392-1897 CE).

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⁸ Measuring unit for length (1 jang is similar to 3.03m)