

The Dream and the Glory: Integral Salvage of the Nanhai No. 1 Shipwreck and Its Significance

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The morning of 22 December 2007 saw the integral raising from the seabed of the steel caisson containing the Nanhai No. 1 shipwreck [Fig. 1]. One week after that exciting moment, on 28 December, the huge caisson was brought into the newly established Marine Silk Road Museum on Hailing Island, Guangdong Province [Fig. 2]. The completion of the Integral Salvage Project of Nanhai No. 1 was the dream of Chinese underwater archaeologists come true!

Nanhai No. 1 (South China Sea No. 1) was a merchant ship of the Song Dynasty (Northern Song, 960-1127; Southern Song, 1127-1279 CE) which sank in the South Sea of China 800 years ago. It was discovered by accident when the Guangzhou Salvage Bureau and a British salvage company co-operated in searching for a shipwreck of the East India Company in August 1987. More than 200 objects, such as Song and Yuan porcelains, a gold belt [Fig. 3] and silver sycee (an ingot used for currency) [Fig. 4, facing page] came out of the sunken ship. Further analysis led to the conclusion that the ship was a merchant boat of the Song-Yuan period sailing on the marine Silk Road.

A series of underwater archaeological investigations began. In November 1989, the Underwater Archaeological Survey Team of the South China Sea's Shipwrecks, including specialists from the National Museum of Chinese History and the Japanese Institute of Underwater Archaeology, conducted the first study of the shipwreck. Some shards of porcelain were collected and the



Fig. 1. The caisson containing Nanhai No.1 being lifted out of the sea.



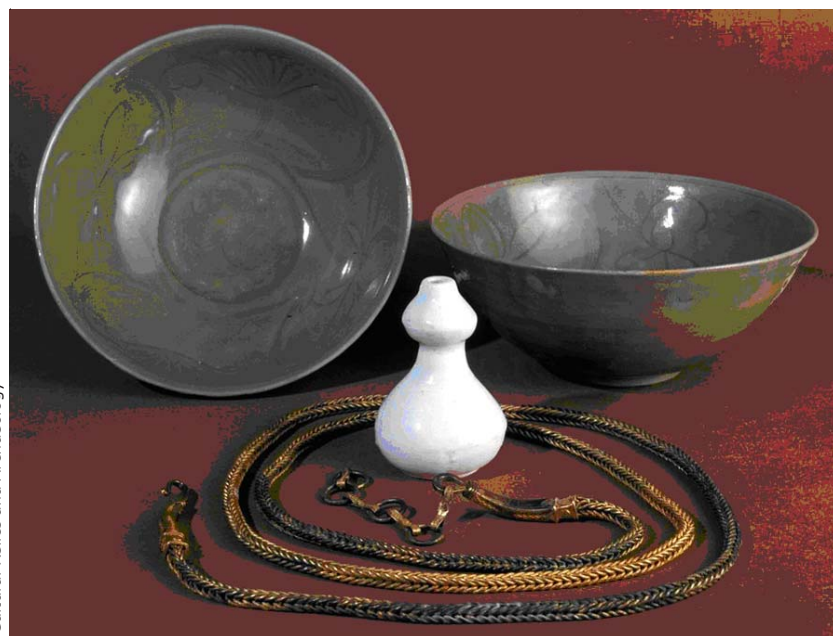
Fig. 2. The caisson being transported to the Marine Silk Road Museum.

position of the wreck roughly mapped. In April 2001, a collaborative investigation (involving the Underwater Archaeology Research Center of China and the Guangdong Institute of Archaeology and Relics) drew an exact map of the site. Subsequent study included the geophysical exploration, underwater investigation and the excavation of small-scale test pits in October 2001, March 2002, August, 2002, January 2003, and May 2004. Aside from the sunken wreck's hull, the freeboard and the cabin, the

researchers also found a number of fine artifacts: more than 4,000 pieces of unbroken ceramics, some lacquerware, stone implements, ironware, bronze, sycees, a large quantity of copper coins and so on.

The underwater archaeological investigations showed that Nanhai No.1, a very large ship with a sharp

Fig. 3. The porcelain bowl and pot; the gilded belt.



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Fig. 4. The sycees.

prow, was made of red cedar. It was 30.4 m long, 9.8 m wide and 8 m high (excluding the height of the mast), with a displacement of

The bundles of ceramics in the ship were mainly from the famous kilns of the Southern Song Dynasty: the Longquan Kiln of

600 tons and a cargo capacity of 800 tons. It dates most probably to the Song Dynasty. The hull of the sunken ship was oriented to the southwest, indicating the probable direction it was sailing.

Zhejiang, the Dehua Kiln and the Cizao Kiln of Fujian, and the Jingdezhen Kiln of Jiangxi. Specialists have identified some noted products like the misty blue wares of Jingdezhen [Figs. 7, 8], the whitewares of Dehua [Figs. 5, 6], the green-glazed wares of Cizao and the celadon wares of the

Fig. 7 (bottom). A qingbai-glaze bowl of the Jingdezhen Type.

Fig. 8 (top). A qingbai-glaze bowl of the Jingdezhen Type.



Fig. 5. A whiteware pot of the Fujian Type.

Fig. 6. A whiteware pot with a handle.



Longquan Kiln [Figs. 9, 10]. The copper coins discovered in the ship — for example, *Zhi Ping Yuan Bao* 治平元寶, *Yuan You Tong Bao* 元祐通寶 and *Huang Song Tong Bao* 皇宋通寶 — mostly belonged to the Northern Song Dynasty [Fig. 11]. Surprisingly, *Kai Yuan Tong Bao* 開元通寶 of the Tang Dynasty (618-907) appeared in the ship. The *Jian Yan Tong Bao* 建炎通寶 (1127-1130) and *Shao Xing Tong Bao* 紹興通寶 (1131-1162) of the Southern Song Dynasty belonged to the latest coins in the findings and thus provide a *terminus a quo* for the date of the ship. Furthermore, several very delicate artifacts came out, including a gold belt with a garland pattern



Fig. 9. A petaled dish of the Longquan Type.

knitted using eight golden threads, a large gold bracelet with a dragon pattern, a black lacquer box with red billowing cloud inlay, a sunflower-shaped bronze mirror,



Fig. 10. The celadon alms bowl of the Longquan Type.



Fig. 11. Copper coins of the Song Dynasty.

and a large flared celadon bowl [Fig. 10]. In addition, a few exotic-looking objects are eye-catching, such as the gold belt and a cobra's skeleton, indicating the breadth of cultural and economic interaction along the maritime silk road. The present estimate, still very rough, suggests that there were 60,000 to 80,000 objects in the cargo. The preservation of the cargo notwithstanding, no human remains have been discovered so far in the ship.

Taking into account all the data, including the wreck's position and orientation of the hull, as well as the type, quantity and details of the cargo, it was concluded that Nanhai No. 1 was a large Chinese wooden ship of the Southern Song Dynasty used for overseas trade. It sank for reasons unknown when sailing out of port to the open sea.

The hull of the Nanhai No.1 is still

very well preserved. Since the cargos on the ship were kept primarily in the hold near the hull, the porcelain and other relics are largely intact and thus constitute a national treasure. However, the hydrographic circumstances of the ship's location are very complex. In order to preserve completely the all the data from the ship, the Guangdong Province Cultural Department organized in 2002 a program named Integral Salvage and Protection Plan of the Nanhai No.1. The experts from the Guangdong Province Cultural Department, the Underwater Archaeology Center of the National Museum and the Guangzhou Salvage Bureau discussed and revised the program six times between 2002 to 2006 and presented the final plan to the State Administration of Cultural Heritage. In April 2007, the Integral Salvage Project of Nanhai No.1 officially started. In the process of salvage work, the Guangzhou Salvage Bureau applied some pioneering technologies, such as the semi-submersible barge and girder perforation under the seabed, thus guaranteeing a successful outcome.

The technique of "integral salvage" involves securing the sunken ship, the cargo and surrounding silt in a special steel caisson without disturbing their original context. The process lifts the scattered and brittle relics at one time and integrally so that they can be moved to their carefully prepared "crystal palace" — the Marine Silk Road Museum. Once there, the underwater archaeological excavation can proceed scientifically in the new environment. This approach is different from traditional operations such as coffering salvage or item-by-item salvage.¹ The salvage of Nanhai No.1 applied the integrated methods of search, excavation and protection for what is probably the first time in the history of underwater archaeology. Although relics

brought up from the ocean may be mysterious and impressive, their interest often enhanced by media coverage, some archaeologists still look down on underwater archaeology, because its methods have obvious flaws compared to those of land archaeology. Underwater archaeology usually undertakes salvage item by item, and thus lacks an accurate description and records regarding the original context of the submarine objects. When judged by the standard of land archaeology, this method may seem blind, capricious and fortuitous. The integral salvage method applied for the Nanhai No.1, however, turns the underwater operation into one similar to the excavation work on land, and obtains the same kind of accurate recording of data which is possible for underground excavation. The sinking of test cores and methods of underwater excavation which were widely used in the past are equivalent to the selective sinking of test pits in very limited land excavation. In contrast, the Nanhai No.1 Integral Salvage Project has recovered the relics in their entirety, just as in the comprehensive excavation of a site on land.

The year 1987 was fruitful for Chinese underwater archaeologists, for it witnessed the founding of the National Underwater Archaeology Center in the Chinese Historical Museum as well as the discovery of Nanhai No. 1. The process of excavating Nanhai No.1 — from the initial discovery, investigation and sinking of test pits to the integral salvage — is a record of the growth of Chinese underwater archaeology during the subsequent twenty years. The success of the Nanhai No.1 Integral Salvage Project thus has become a landmark for Chinese archaeology.

The raising of the caisson and the transfer of the ship to the “crystal palace” are yet early stages in the work — no more than

one-third of the entire project. Careful excavation and preservation are still to come and are even more important for long term success. Many difficult and pressing questions must be answered: What changes will take place after sunken wreck has left the original environment? Will the fragile ship framework fall apart after the box containing the vessel is opened? How do we dehydrate and desalt the wooden hull and simultaneously minimize oxidation? How do we deal with the probable fissures present in the porcelains which may be caused by saline crystallization on the glazed surface? Also, how do we deal with the tension between the requirements of careful and extended excavation, on the one hand, and on the other the urgent demands of the local government to develop tourism?

Only when we are able to solve these problems can the archaeologists obtain the full range of information which the Nanhai No.1 contains and provide satisfactory explanations of its mysteries, both to address the academic concerns of scholars and the general curiosity of the public. Perhaps we will then be able to answer such questions as: Where was the Southern Song merchant ship built? From whence did the ship sail and where was it headed? Was the ship owner a Chinese or a foreign merchant? How many cargos were loaded on the ship and what kind? How were the cabins and cargos arranged? Why did the ship sink? Was the crew able to escape? Were there any navigating instruments on board? What was the actual route of the marine Silk Road? What was the role of the Southern Song Dynasty in the marine Silk Road?...

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Note

1. Coffering salvage entails encircling the sunken wreck and pumping out the sea water, thus changing underwater archaeology to land archaeology. In item-by-item salvage, the archaeologists dove directly to the ship, excavated the relics piece-by-piece, then disassembled the ship's hull, in order to bring it ashore and re-assemble it.