

# THE TEST EXCAVATION OF THE NANHAI NO. 1 SHIPWRECK IN 2011: A DETAIL LEADING TO THE WHOLE

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In 2008 we reported on the pages of this journal about the retrieval of a remarkably well-preserved Song-era ship, the Nanhai 南海 (South China Sea) No. 1, through an innovative project which lifted it from the seabed in a caisson and transported it, still covered by water, to the Yanjiang Maritime Silk Road Museum 阳江海上丝绸之路博物馆 on Hailing Island 海陵岛, Guangdong Province 广东省. The ship was over 90 m long and contained a large cargo of ceramics. Its intact salvage opened a new chapter in the history of underwater archaeology in China, making possible then the kind of precise documentation through the methods of field archaeology which is impossible when a shipwreck remains on the ocean floor. The present article reports on the first results of the ongoing, detailed excavation.

*Kuiyiban er zhiquanbao* 窥一斑而知全豹, a Chinese idiom, means peering at one spot and knowing everything. This is an appropriate metaphor for the test excavation of Nanhai No. 1 in 2011. Though lasting only for 46 days (March 6<sup>th</sup> to May 10<sup>th</sup>), the technical accomplishments of this work showed that Chinese underwater archaeology already is at the forefront of maritime archaeology worldwide. Moreover, the rich and multiple relics retrieved from only six 1 × 1 m test pits offered a tantalizing taste of the fruitful harvest which can be expected as the excavation proceeds.

The project in 2011 was defined as “field excavation with a lowered water level,” that is, to apply the methods of field archaeology after lowering the water level in the caisson. Even though the caisson was isolated from the natural water environment and thus had no current, the mud covering the shipwreck seriously reduced underwater visibility and even interfered with basic work like photography and cartography. To use mud pumps, as is commonly done in underwater archaeology, was considered inadequate for collecting the relics and other information that remained buried.

Therefore, the decision was made to employ the advanced techniques of field archaeology and documentation of the excavation as the most scientific way to secure the relics from the shipwreck.

After first lowering the water level by two meters (that is, 0.5 m below the surface of the mud and remains of the ship), six 1 × 1 m square test pits were dug in the south and north sectors of the wreck. The total station (Sokkia Set530R3) was used as the major instrument of surveying and mapping to record data throughout the excavation. The data collected from the total station then was transmitted into the computer with AutoCAD to create a virtual, three-dimensional test pit [Fig. 1]. The actual excavations in the test pits employed in addition to necessary mechanical tools the regular instruments of archaeological field work, such as trowel, drill, soft brush, bamboo knife etc. [Fig. 2, next page]. The excavation carefully uncovered strata from top down in the mud; that is, it preserved the temporal sequence as the artifacts were collected, numbered and recorded. The surrounding mud was analyzed and filtered thoroughly. In the process, seeds and other organic specimens were found.

The test probes in 2011 also employed new excavation techniques and instruments. To facilitate the ar-

Fig. 1. Total station in the excavation site.





Fig. 2. Uncovering the porcelains from one of the test pits, protected by its aluminum walls.

archaeologists' work, long steel ladders and a platform surrounded with FRP glass were erected [Fig. 3]. The sides of the test pits were supported with an aluminum framework to protect the integrity of the excavation. Steel probes 2 m long were used to determine where porcelains or other solid objects were in the mud [Fig. 4]. Glass tubes were used to probe into the mud around the test pit, while a water pump specially designed for this excavation and sponges were used to draw away the additional water in the mud. The total station was used as the instrument for surveying and mapping along with digital still and video photography to record the whole process of excavation. Each stage of the excavation was photographed directly from above and the results used to draw plans by AutoCAD. The artifacts then were removed by hand.

The test excavation of the Nanhai No.1 shipwreck accomplished several important goals:

1) It provided a good model for future work. The project was planned taking into account that the shipwreck had already been placed in the caisson and transferred to the museum, thus being separated from the original environment. The newly tested excavation methods provide experience as to how best to salvage

Fig. 3. The steel ladder connecting the work site and the platform.



Fig. 4. An archaeologist using a steel probe.

and exhibit shipwrecks in the future.

2) It has raised the standard of underwater excavation in China. How to proceed in the salvage and excavation of a shipwreck raised in a caisson is still an open subject. Although underwater archaeology in China has substantial experience in original site work, there had been little guidance as to how to proceed once the shipwreck had been contained in the caisson. The test excavation, with its high quality and advanced scientific technology, indicates the progress of underwater archaeology in China.

3) It provides good training for new underwater archaeologists. The team members in this excavation come from the Guangdong Provincial Institute of Cultural Relics and Archaeology 广东省文物考古研究所 and the Yangjiang Maritime Silk Road Museum. These outstanding archaeologists and their team now can share their work experience and train new staff in excavation techniques.

### The artifacts

The six test pits were distributed in the south and north sections of the caisson and had no connection with one another. The test excavation unearthed 120 objects, including porcelain (108), bronze coins (9), stoneware (1), ironware (1), animal bone (1), and seeds (2).

The porcelains are from kilns in Dehua 德化, Cizao 磁灶, and Mingqing 闽清 in Fujian Province, Jingdezhen 景德镇 in Jiangxi Province, and Longquan 龙泉 in Zhejiang Province. Most of them are white-glazed Dehua wares [Fig. 5, next page], including a relief-decorated jar with four handles, a relief-decorated two-handled jar, a pitcher with a melon pattern, a vase with a flared neck, a porcelain box, a plate with a flower pattern, a bowl with an inward-curving rim and flower pattern, and a bowl with a flower pattern. The wares from the Yiyao Kilns 义窑, Mingqing, include a green and white bowl with an incised pattern and sunflower



Fig. 5. Porcelains from the Dehua kilns:

- 5-1. White glazed pitcher with a handle and melon pattern.
- 5-2. White-glazed porcelain box.
- 5-3. White-glazed vase with a flared neck.
- 5-4. White-glazed jar with two handles.
- 5-5. White glazed jar with four handles.
- 5-6. White-glazed plate with pattern and inward-curving rim.

rim, a green-glazed bowl with a flower pattern (Figs. 6-3, 6-4), while the Cizao wares are a brown-glazed flask ("pilgrim bottle") and a green-glazed bottle with a calabash shape [Fig. 6-6]. The Jingdezhen porcelains



Fig. 6. Porcelains from Jingdezhen, Longquan, Mingqing and Cizao kilns.

- 6-1. Jingdezhen green and white plate with sunflower rim.
- 6-2. Jingdezhen green and white bowl with sunflower rim.
- 6-3. Qingyi green-glazed bowl with sunflower rim.
- 6-4. Qingyi bowl with flower pattern.
- 6-5. Longquan bowl with flower pattern.
- 6-6. Cizao green-glazed bottle with a calabash shape

are a green and white plate with a sunflower rim and a green and white bowl with a sunflower rim [Figs. 6-1, 6-2]; Longqian wares include a green-glazed bowl with flower pattern, etc. [Fig. 6-5]. The stone object is too fragmentary to identify its function, while the iron object is a nail with square cross section. So far it is impossible to determine the origins of the animal bone. The plant remains included olive and lichi pits.

These relics suggest the following conclusions:

1) Since porcelains are 90 percent of the 120 artifacts, Nanhai No. 1 most probably was a merchant ship transporting mainly porcelains. The six test pits are all located in the lower part of the shipwreck. However, it is surprising to see the richness of the unearthed relics. In the estimate by the excavators, the cargo of porcelain in this ship will number only somewhat less than 100,000 pieces.

2) Different sections in the ship may contain different cargoes. Test pit TN23E8 near the stern of the ship has mostly green-glazed bowls from northern Fujian province, while TN4E7 and TN7E9 have more white-glazed porcelain from the Dehua kilns. TN4E7 and adjacent areas show a cargo of ironware.

3) Since the porcelains in this ship are mostly from kilns in Fujian Province, with but a few from Jiangxi Province and Zhejiang Province, it seems likely that the ship embarked from the coastal area of Fujian.

4) The bronze coins from this excavation [Fig. 7, next page] are *Huangsong tongbao* 皇宋通宝, *Zhenghe tongbao* 政和通宝, *Yuanfeng tongbao* 元丰通宝, and *Xiangfu yuanbao* 祥符元宝, which were all cast in the Northern Song period. However, since these coins accompany the *Shaoxing yuanbao* 绍兴元宝 (Southern Song period) coins unearthed in the initial excavation, the shipwreck most likely dates from Southern Song period.

The excavation also uncovered hull planks and parts of the keel and wood from the cabin, all indicating that both the bow and stern of the ship had been preserved. At the end of 2014, the author had the opportunity

Fig. 7. Bronze coins.

7-1. Zhenghe tongbao

7-2. Yuangfeng tongbao

7-3. Xiangfu yuanbao

7-4. Huangsong tongbao.



to visit the excavation site in the Yangjiang Maritime Silk Road Museum guided by Pu Gong 卜工, emeritus director of the Guangdong Provincial Institute of Cultural Relics and Archaeology and advisor for the 2011 test excavation. Sun Jiang 孙键, the leader of the team, showed us the beautiful relics just uncovered from the water, including fine flasks decorated with the characters 福 and 寿 from the Dehua kilns, a gold necklace of great interest for its western-style elements, as well as some lacquerware plates with yellow, red and black colors.

We can confidently predict that as the excavation proceeds, the shipwreck will provide much more new evidence to help us appreciate the past prosperity of the maritime silk road.

## About the author

Between 1994 and 2004, Professor **Xu Yongjie** 许永杰 was Deputy Director of the Heilongjiang Provincial Institute of Cultural Relics and Archaeology. Since 1994 he has taught Chinese Archaeology in the Department of Anthropology of Sun Yat-sen University in Guangzhou. He is also Visiting Professor at the Research Center for Frontier Archaeology in Jilin University and Visiting Researcher at the Research Center of Ancient Civilization in the Chinese Academy of Social Sciences. He has directed a number of major excavations and has published more than 70 articles and several important books. He can be contacted at <Yongjie1957@aliyun.com>.

## Reference note

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– translated by Lin Ying 林英