

# Shipwrecks in the off shore waters of the Indian peninsula – a review

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**Marine archaeological investigations in the Indian waters have made steady progress during the last four decades, spearheaded by the marine archaeology centre of the CSIR-NIO, Dona Paula, Goa. Wooden and steel hulled shipwrecks have been investigated off Sunchi Reef, St. George's Reef and Ameer Shoals in Goa waters. Sunchi Reef shipwreck is datable to the 17th century CE and was part of the Indo-Portuguese trade and commerce network. The St George's Reef shipwreck is dated to the 19th century CE. The name stamped on the firebricks of the Ameer shoals shipwreck suggests that it could be of British origin, dating around the 1880s or later. Further, steam engine shipwrecks have been explored and documented in the Minicoy waters. An 18th century CE wooden hulled shipwreck has been explored off Poompuhar, Tamil Nadu. The discovery of Poompuhar shipwreck suggests that the wreck represents a local cargo ship carrying lead ingots from manufacturers in Europe. Similarly, explorations have brought to light, a shipwreck off Konark coast of Odisha, details are awaited.**

**Keywords:** Goa, Lakshadweep, Odisha, Poompuhar, shipwrecks.

## Introduction

SOUTH ASIA has more than 8100 km long coastline, from the Makaran coast to the south-west of Pakistan to Bengal and Bangladesh borders in eastern India. This entire coastal board has played a significant role in promoting the maritime activity of Indian seafarers. Numerous port towns located all along the coast facilitated maritime trade between and among maritime civilizations since the third millennium BCE. A series of port towns of the Harappan Civilisation is known from the Kachchh and Saurashtra of Gujarat and Makaran coast of Baluchistan. Mesopotamian records mention maritime trading posts at Dilmun (Bahrain), Magan (Oman) and Meluha (Indus Valley) transporting merchandise via the Persian Gulf to Mesopotamia<sup>1</sup>. During the Early Historic period, a series of ports along the western seaboard connected India with Egypt and Rome via the Red Sea<sup>2,3</sup>. Evidence of early

easterly maritime trade dates back to the 8th to 6th centuries BCE (ref. 4). While hard archaeological evidence has been documented from the time of the Harappan civilization, there are clear signs of maritime trade between the coasts of Indian Peninsula and rest of the maritime world since the dawn of Common Era and with increasing intensity during the medieval and modern periods of Indian history. Since the focus of this article is on shipwrecks, details of maritime expansions during the medieval times is not given here.

Submerged ports and shipwrecks are known from the northern Indian Ocean, including Lakshadweep and Andaman waters. Archival sources, folklore, early literary texts (including Buddhist, Jain, Sanskrit and Sangam anthologies) and terrestrial archaeological sites have provided the required stimulus for launching underwater heritage explorations, its conservation and preservation for posterity. Undoubtedly, India has been a major maritime country throughout its history. By virtue of its geographical location, the coast of the Indian Peninsula was an important port of call for the seafarers from the Mediterranean, Persian Gulf, China and Southeast Asia. Since the circulation of monsoon winds governed the movement of cargo ships, they were compelled to negotiate abrupt and calamitous conditions caused by cyclonic storms, heavy gales, rough seas, submerged reefs, sand ridges, etc. The archival records mention some of these as causes of shipwrecks and have recorded such events in detail. Such leads are a definite clue to the existence of older shipwrecks lying on the seabed.

The underwater exploration entails recovery of the lost ships and material remains from the wreckage that shed light on the maritime history of the region. Progressive exploration techniques and methods of study have been employed in Indian maritime archaeology and have paved the way for the development of full-fledged hydroarchaeology of the Indian Ocean region<sup>5-10</sup>. Shipwreck and hydroarchaeology in India have developed in accord with the developments in the west.

Realizing the importance of underwater heritage, the late S. R. Rao pioneered exploration of Dwarka along the Gujarat coast during the late 1970s. He had the firm conviction that Indian Ocean region has the potential for recovery of invaluable material remains from the sunken ships that will contribute not only to adding time depth to

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## SPECIAL SECTION: SHIPWRECKS

the maritime history of India but also shed light on maritime technology of the seafarers from Indian and other maritime countries, including east-west cultural expansions. He was subsequently successful in establishing the marine archaeology centre at the CSIR-National Institute of Oceanography (NIO), Goa in 1981, which became an integral part of NIO in 1990 (ref. 11). Potential areas for underwater explorations were identified by consulting the literature, marine records and documents from archives and libraries in India and abroad (Figure 1). Archival records of shipwrecks do not go back prior to the advent of Europeans in India.

In the following a brief description of underwater investigations conducted at Sunchi Reef, St George's Reef, Ameer Shoals, Sail Rock, Grande Island off Goa; Minicoy Island; Suheli Par off Lakshadweep Islands; Poompuhar in Tamil Nadu; and Konark on the Odisha coast. In India, shipwreck investigations were initiated for the first time in 1989 off Sunchi Reef in Goa waters. Consequently, shipwreck explorations were carried out off St George's Reef, Ameer Shoals of Goa as well as in Poompuhar, Konark and Lakshadweep waters and findings of all the sites have been documented.

### Shipwrecks in Goa waters

Archival records have revealed a series of wreckages off the coast of Goa that occurred probably owing to a

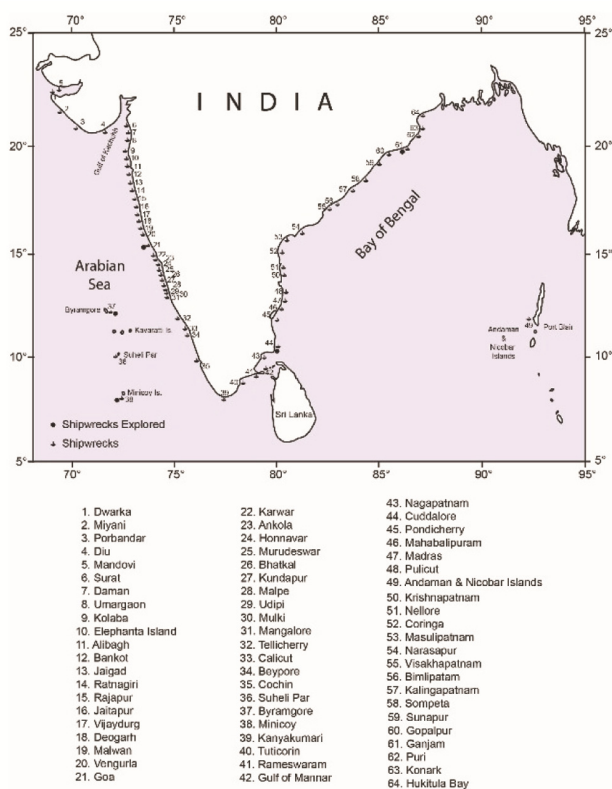


Figure 1. Map showing the shipwrecks in Indian waters (CSIR-NIO).

collision with reefs, sand bars and storm over the sea<sup>12-14</sup>. The Portuguese records of 1497–1612 CE mention that 806 ships sailed from Lisbon to India. Out of these 20 ships ran aground, 66 were shipwrecked, the enemy captured four, six were burnt, 285 remained in India, and the rest returned to Portugal<sup>15</sup>. According to Alves *et al.*<sup>16</sup>, Portuguese ships, for instance, *S. Cristovam* wrecked in a storm on 17 August 1594. Another ship named *nau Santo Andre* on its way to Goa was capsized off Goa coast in May 1608. The *Nossa Sra Dos* and *Remedios* were hit by a severe storm and sank on 28 January 1616. Twelve Portuguese ships, enroute to Calcutta from Goa, sank near Aguada Bay due to an unseasonable storm in 1648 (ref. 17).

### Sunchi reef

The Sunchi reef shipwreck site is located in the shallow waters (3–6 m depth) (Figure 2), associated with the late-ite bedrock and the area is known for rough and turbulent submarine conditions. Underwater survey in the area yielded a variety of artefacts including cast iron guns, an iron shot, a handgun barrel, stoneware sherds (Martaban

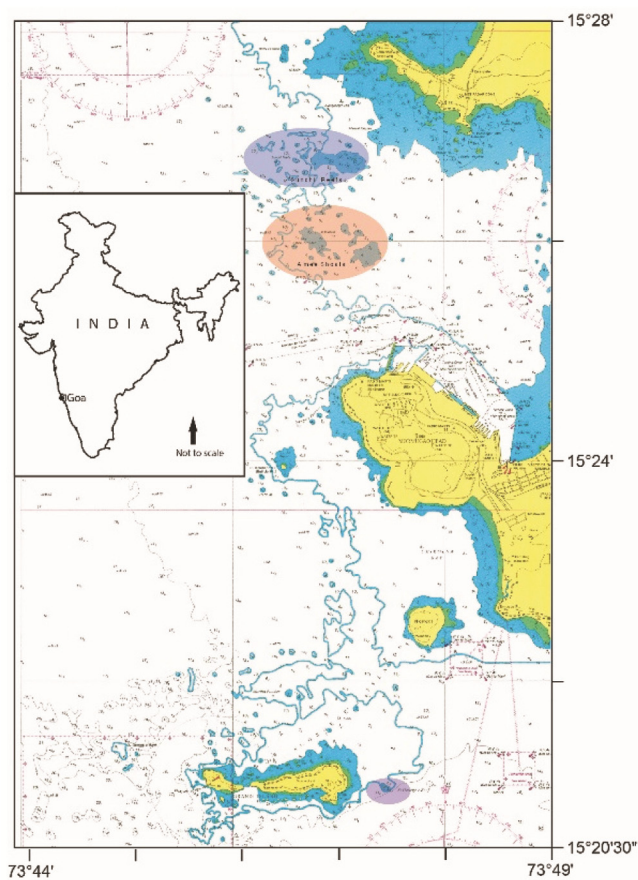


Figure 2. Location of shipwreck exploration sites off Goa waters (Sunchi Reef, St George's Reef, Ameer Shoals and Sail Rock) (CSIR-NIO).

pottery), glass bottle bases, elephant tusks, hippopotamus teeth, metal handle, sherds of Chinese ceramic ware and dressed granite stone blocks<sup>18</sup>. Subsequent surveys also yielded elephant tusks and hippo teeth<sup>19</sup>. The tusks are inscribed in Roman characters, but the meaning of the same is not clear. They could be acronyms of the company or the individual businessman. These have been successfully conserved at CSIR-NIO. The Sunchi Reef wreck is the oldest wreck so far surveyed in the Indian waters. As mentioned above, the shipwreck lies in a high energy zone not favourable for preservation and therefore artefacts are the only finds from the site. The ship was perhaps a wooden hulled of likely Portuguese origin. The Thermoluminescence dating of pottery ( $360 \pm 40$  years BP) and radiocarbon dating of ivory (740–560 years BP) suggest that the wreck could be dated to the early 17th century CE.

### St George's reef

The shipwreck site is located at a depth of 15 m in the vicinity of St George's Reef on the eastern side of Grande Island (Figure 2). The wreckage contained the remains of wooden hull and sunken cargo. The latter includes building materials such as chimney bricks, roof, ridge and floor tiles, Corinthian type of column capital, drum, drainage pipe and hand wash basin found scattered over a wide area on the seabed<sup>20</sup>. Bricks, floor and roof tiles are inscribed 'Basel Mission Tile Works 1865'. Bricks are made of white clay, moulded, and the obverse is inscribed, while the reverse is plain. The timber of the ship has been radiocarbon dated to 115 years BP and belongs to the 19th century cargo ship that took off from the Goa coast. The anatomical analysis indicates that the timber belongs to the *Lagerstromia microcarpa* syn *Lagerstromia lanceolata* species, 'benteak' (Figure 3) is its trade name<sup>21</sup>. The *Basel Mission Company* is a well-known manufacturer in the Dakshina Kannada region of Karnataka.



**Figure 3.** Remains of timber from the wrecked vessel on St. George's Reef (scale in 5 cm units) (CSIR-NIO).

### Amee shoals

In the area of Amee shoals, a steam engine shipwreck (Figure 2) was systematically investigated. The findings include three boilers, a flywheel, hawser and hatch door and water tank of a steam engine lying at a depth of 6 to 9 m (ref. 22). Bricks placed inside the boilers bear legends 'FURNA....' and 'B 84'. The site has been subject to periodic plundering. It is assumed that it was a steel hulled ship with the wooden superstructure. It was a single-ended scotch boiler, steel hulled and triple expansion steam driven vessel. The boilers were the last phase of development of fire tube boilers. The size of the three scotch boilers suggests that the ship was 100 m long. The drum boilers were not in use before 1880s. Therefore, the wreck could be dated to post 1880 CE. The Amee shoal ship was either approaching or disembarking from Marmagao port and ran into the shoals and got wrecked.

### Shipwreck in Lakshadweep waters

Several ships have been wrecked in Lakshadweep waters before the WWII. It is inferred that shallow water reefs and the absence of lighthouses might have caused shipwrecks.

### Minicoy island

Archival records mention that between 1862 and 1910 CE, there were five shipwrecks in the shallow waters off Minicoy (Figure 4) including the SS *Colombo* in 1862, SS *Thrumscoe* in 1899, *Duffryn Manor* in 1909, SS *Dela-goa* in 1910 and the sailing ship *Tolna* in 1900. The latter was scuttled off Minicoy while on around the world cruise. Between 1994 and 2001 underwater explorations were launched on the eastern side of Minicoy islands. Three shipwrecks were discovered<sup>23–26</sup>. Remains of the shipwreck included hull frames and beams, flywheel, propeller and propeller shaft. In addition, octagonal shaped porthole, J bolt with wing nut of porthole, square and round flanges, doorframe hinge, door latch and anchor chain were also found. The other shipwreck was found about 200 m away at a depth of 4–15 m. The maximum length of the ship could be 100 m. The aft portion of the ship has fallen into deeper water. The propeller shaft is broken into two parts. Two boilers were seen near the site. The boilers, flywheel and engine parts are well preserved, but for the coral growth on these remains. These data confirm the recorded shipwrecks mentioned above and belong to the 19–20th centuries CE.

### Byramgore and Suheli Par Reef

In 1990 CSIR-NIO and the Indian Navy jointly explored shipwrecks off Byramgore Reef by deploying INS

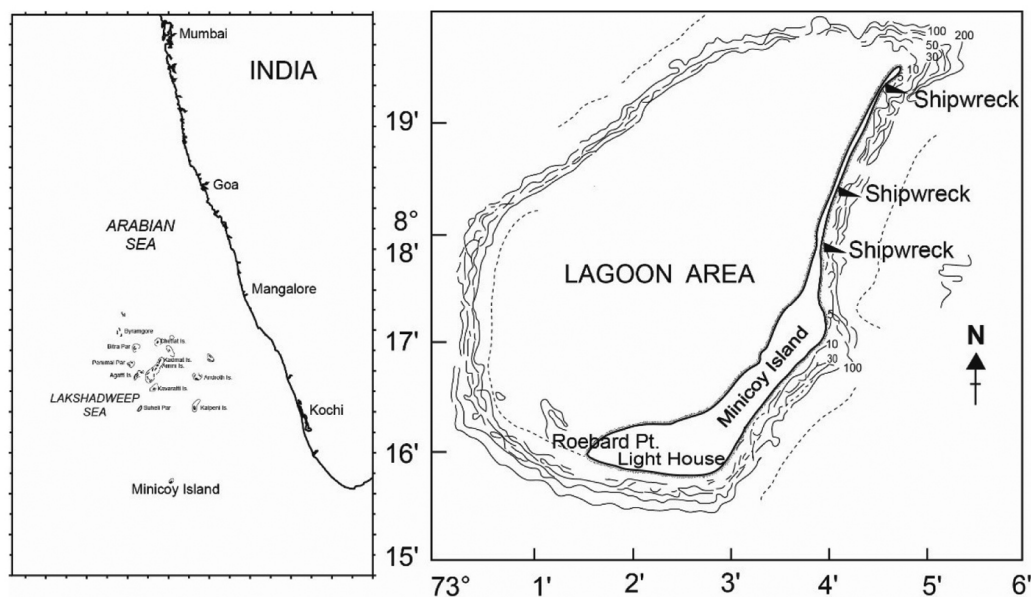


Figure 4. The location of the shipwreck off Minicoy Island (CSIR-NIO).

*Sandhayak*, a well-equipped survey ship. The exploration brought to light potsherd and metal fragments probably belonging to the ill-fated ship<sup>27</sup>.

According to Saigal<sup>28</sup>, a Greek ship loaded with the consignment of WWII sailed from Burma and on its way was capsized in the reef area and sunk to seabed. On the surface of the Suheli Par Reef, the hull remains of the shipwreck were found, along with remains of armoured vehicles, trucks, cars and cannon lying deeper in water.

### Bangaram

In view of the record that a 16th century CE ship from Germany sank off the Bangaram island, a joint expedition by a team belonging to the Research Institute of Germany, Marine Archaeology Club of the Indian Navy and Pondicherry University carried out explorations off Bangaram island in April 1992. A shipwreck was located around Mercator. This expedition successfully discovered the shipwreck at 60 m water depth. The remains were found scattered over an area of 5000 sq. m, along the northern reef of the island<sup>29</sup>. In 2002 the Underwater Archaeology Wing of the ASI and Indian Navy jointly carried out underwater explorations off Bangaram island. A shipwreck was located, from where four iron cannons each 2 m long, an iron anchor, a copper vessel, copper sheet used on the hull, storage jars, bowls, dishes and Chinese porcelain of the Ming Dynasty were recovered<sup>30,31</sup>. The major part of the ship lies in 24–36 m water depth. The bronze bell of the ship that was found earlier bears an inscription ‘Princes Royal 1792’. Whether the same shipwreck was explored by both the groups or different shipwrecks<sup>29–31</sup> is yet to be known.

### Shipwreck in Poompuhar waters

A wooden hulled shipwreck was discovered at 19 m water depth, 3.5 km off Poompuhar, Tamil Nadu<sup>32,33</sup>. Airlift operations confirmed that it was a wooden-hulled ship. The exploration of the shipwreck brought to light a large number of lead ingots. Further, a 2.1 m long iron cannon, gun-powder boxes (?), a copper rudder gudgeon and two circles about 1 m diameter were noticed, which could probably be the hatches of the cargo hold. In the process of airlifting, below 1 m subsurface of the seabed wooden planks of the ship were recovered. The vessel off Poompuhar may be a local *Toni* type cargo ship involved in trading lead ingots of different manufacturers<sup>34</sup>. Lead ingots bearing the stamp 1791 and 1792, were manufactured by W: Blakett Company indicating the possibility that shipwreck occurred later than the date mentioned on the ingots. W: Blakett lead ingots have been reported from different parts of the world. This finding confirms the trade contact between the W: Blakett company and other parts of the world, including India.

### Shipwreck explorations along Odisha coast

The India Meteorological Department (IMD) data shows that many ships were capsized and destroyed by cyclonic storms in the Odisha coast between the period 1832 and 1900 CE (ref. 35). Archival records provide evidence of East India Company shipwrecks. The British ship *Fattee Salem* was caught up in the violent wind and is said to have sunk off the Ganjam coast in 1761 CE. As many as 300 lives were lost, including the cargo<sup>36</sup>. In July 1820 CE H. M. Late ship Carron sank to the seabed 4 miles north

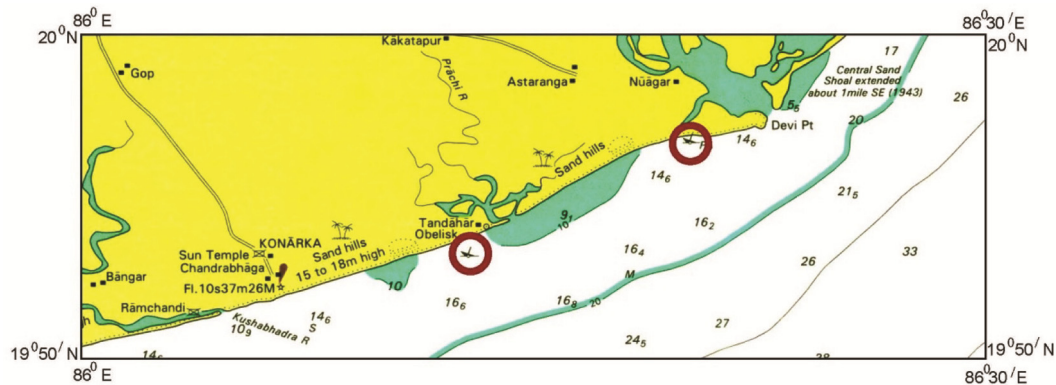


Figure 5. The location of the shipwreck off Konark coast, Odisha (CSIR-NIO).

of Konark. *Sir John Lawrence* carrying more than 175 passengers sank off the Odisha coast in 1887 CE due to a cyclone.

Recently a shipwreck has been explored on the northern side of Konark coast (Figure 5). During explorations, boilers, cabin, winch and anchor chain of the ship were noticed. These shipwreck remains are buried in the seabed because of the movement of sediment in shallow water depth under high energy conditions. The frames of the shipwreck are highly eroded. In terms of their size, the boilers of Konark shipwreck are comparable to those of Ameer shoals, Goa. The archival records suggest that H. M. *Carron* sank 4 miles north of Konark in July 1820 (ref. 37).

## Conclusion

The archival records mention many shipwrecks in Indian waters; but only a few of them have been discovered, one of the reasons being lack of information on the precise location of shipwreck sites. Turbidity of shallow seas precludes visibility of submarine features. The frequency of underwater explorations and the number of shipwrecks that have been discovered in the Indian Ocean waters call for further intensification similar to those conducted by other countries. Lack of precise information on the location of shipwreck sites, visibility conditions in the sea are some of the constraints encountered by marine archaeologists in India. It is felt that collaborative programmes with overseas maritime institutes will surely facilitate application of technologically advanced methods of underwater exploration. Interaction between local fishermen and divers, and outreach programmes will enhance efficiency and productivity of shipwreck archaeology.

All the documented shipwrecks belong to the 17–20th centuries. This period is the transition phase between wood to iron and sail to steam. The hitherto discovered shipwrecks, namely the Konark, Vizag and Poompohar, deserve further studies for reconstructing their detailed history. There are a few shipwrecks of historical impor-

tance, e.g. the *Dart Mouth*, the East India company ship which was carrying treasure, and is said to have sunk off Masulipatnam in 1719 and another ship, *Governor Keating*, carrying Kings Stores, that sank in a storm in 1812 near Nellore, Andhra Pradesh. Similarly, some Indian built ships are lying in foreign waters, namely the *P&O Liner Indus*, which carried the Buddhist sculptures of Bharhut stupa (see Rasika Muthucumarana, p. 1664, in this issue) known to have sunk in 1882 to the seabed of Sri Lankan waters. The *Brig Hebe* and *Julius Caesar* of the East India Company were wrecked off Colombo in 1852 and off the Maldives Island in 1844 respectively, and *Bedford* was wrecked off Mauritius in 1703. The exploration of some of the above shipwrecks would help reconstruct the maritime contacts of India with other maritime countries.

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