

Florida's Mystery Wreck

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During the summer of 2005 the Florida Bureau of Archaeological Research and the Florida Keys National Marine Sanctuary investigated an unusual shipwreck in 6 m (20 ft) of water off Marathon in the Florida Keys. Known locally as the 'Mystery Wreck' it remained relatively undisturbed for over two decades until State of Florida and Sanctuary archaeologists conducted a research project to learn more about this fascinating early shipwreck. This paper presents a summary of field investigations and a preliminary interpretation of the shipwreck.

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Key words: shipwreck, Florida, Iberian, ecosystem, ballast.

During the summer of 2005 the Florida Bureau of Archaeological Research and the Florida Keys National Marine Sanctuary (FKNMS) investigated an unusual shipwreck in 6 m (20 ft) of water on the edge of Hawk Channel off Marathon in the Florida Keys (Fig. 1).

In May 1972 the Florida Division of Archives, History, and Records Management (later the Division of Historical Resources) entered into a salvage contract with Brown, Knott, and Nipp Enterprises to explore and salvage the remains of an unidentified possible colonial-Spanish shipwreck. The ballast-mound was known by local divers but had never been investigated. The salvage company believed the wreck to be one of the remaining undiscovered wrecks of the Spanish Plate Fleet lost in a hurricane in 1733 (Walton, 1994; Weller, 2001). Wrecks of the 1733 fleet were being discovered during the 1960s and '70s and were producing small amounts of coins and other artefacts which fuelled the search for the remaining ships, two of which remain undiscovered.

The salvors, according to the terms of their contract, performed limited excavations around the edges of the ballast-mound using dredges, blowers, and hand-tools. A section of ballast near the middle of the mound was removed in a futile

search for non-existent 'treasure'. Artefacts recovered included ballast-stones, encrusted iron objects, 208 musket balls, 127 grape shot, 34 lead shot, three cannonballs, firebricks, several fragments of wood, a rudder gudgeon, a piece of melted copper, one piece of bone, lead sheathing, a broken *mano* (grinding stone), an anchor and anchor ring, bags of olive-jar body sherds and four olive-jar necks. These artefacts were conserved and are curated at the Division of Historical Resources in Tallahassee, Florida.

The lack of precious metals indicated that the Mystery Wreck was not one of the 1733 fleet and the salvors soon lost interest. Their contract lapsed and no further organized investigations were undertaken at the site. However, the shipwreck, known locally as the 'Mystery Wreck', was impacted over the years by occasional visitors who, in a half-hearted search for treasure, disturbed sections of the ballast pile. It was even featured in a video called 'Galleon Hunter' in which a local diver visited the 1733 sites and other shipwrecks, promoting their histories and diving adventures. But in terms of serious study it remained undisturbed for over two decades until State of Florida and Sanctuary archaeologists conducted a research project to learn more about this unusual early shipwreck.



Figure 1. Mystery Wreck location map. (courtesy of Jeff Moates)

In the summer of 2004 the underwater archaeological team of the Florida Bureau of Archaeological Research conducted fieldwork as part of a National Oceanic and Atmospheric Administration (NOAA) grant to research and record the 1733 Spanish Plate Fleet wrecks with the goal of producing public educational materials. During this research project local informant Dave McCampbell offered to show the team additional unrecorded shipwrecks; one of these was the Mystery Wreck. The site presented as a compact and consolidated ballast-mound composed of square-shaped cut igneous stones (probably granite) atop a patch reef on the edge of Hawk Channel in the Atlantic Ocean, 3.2 km (2 miles) south of the city of Marathon on Vaca Key. Salvage activities and the natural scouring action of currents and waves had produced cavities under the ballast that revealed massive ship timbers. An undercut at the seaward end of the ballast exposed stern timbers and as many as eight framing stations extending under the ballast. An odd crack or crevice bisected the otherwise-compact ballast-pile. The reef surrounding the shipwreck was in pristine condition including an array of hard and soft corals. The entire site was home to a thriving ecosystem of tropical sealife from the smallest of crustaceans to large predators such as sharks and barracudas. The intriguing site with its compact, nearly-undisturbed ballast-mound and visible construction features presented

an opportunity to research early maritime cultural resources in the Florida Keys. Although construction details suggested the Mystery Wreck was a colonial shipwreck, its square-cut ballast, completely unlike the smooth, egg-shaped river-rock ballast of the 1733 wrecks, indicated that this shipwreck was not related to the 1733 fleet disaster.

The research potential of the shipwreck, together with the Sanctuary's continuing efforts to record submerged cultural resources in Florida waters, provided an opportunity for the State and Sanctuary to work together. In 1998 a Programmatic Agreement between NOAA and the State of Florida for historical resource management in the Florida Keys National Marine Sanctuary was signed (National Oceanic and Atmospheric Administration *et al.*, 1998). The agreement provided a framework for joint management of submerged cultural resources within the Sanctuary. This formal partnership enabled a research project to be formed for the investigation of the Mystery Wreck. A grant from the NOAA National Marine Sanctuary Program's Maritime Heritage Program provided funding for a 10-day project in June 2005 to perform intensive investigations on the Mystery Wreck. Operations were based from the NOAA research vessel R/V *Odyssey* with dock space and support provided by the Marathon City Marina. The project was a collaborative effort involving professional scientists, volunteers, and the local



Figure 2. Crevice bisecting the ballast-mound. (courtesy of the Florida Bureau of Archaeological Research)

community. News media were invited to cover the project and diving reporters were given a tour of the wreck-site. Aerial photographs of the site and surrounding area were provided by the Florida Fish and Wildlife Conservation Commission. In addition to State of Florida and NOAA archaeologists, visiting scholars from the City of Key West, the Mel Fisher Maritime Heritage Society (MFMHS), and NOAA headquarters in Silver Spring, Maryland, helped to investigate the wreck.

A mooring was placed at the wreck-site for the research vessels, and diving operations were conducted from the boats. A baseline was established along the longitudinal axis of the wreck, which lies in a north-east/south-west direction with the vessel's bow to the north-east. Because vertical relief of the ballast mound exceeds 1.5 m, a secondary baseline was established along the starboard side of the vessel off the mound. This was used to record the undercut portions of the ballast and protruding framing stations and other ship features. The extent of the ballast-mound was recorded together with large coral features growing on top of it. Profile measurements

were obtained using a plumb-bob dropped from a surface buoy to record the unusually high vertical relief of the ballast and surrounding patch reef. Approximately 6 m forward from the aft end of the mound, the otherwise consolidated ballast is bisected by a deep transverse crack that extends the entire width of the mound (Fig. 2). The fissure, up to 70 cm wide, adds to the mystery of the wreck and provides shelter for small tropical fish and invertebrates.

The ship's length of keel is approximately 19 m; its beam is unknown. Ballast extends beyond the exposed ship-remains and measures 22 × 15 m. Exposed sections of the hull include stern timbers, portions of the bow assembly, and timbers along the midship area. Stern timbers comprise the eroded sternpost, three closely-spaced tail-frames, and the remains of both port and starboard garboard strakes. Remains of the bow include the forward end of the keel and two small, curved disarticulated bow frames. Timbers along the midships, exposed by past salvage activities, represent the vessel's keelson, two floors, a rider, a fragment of ceiling plank, and what appears to be a small section of the pump-box (Fig. 3). Wood samples from all accessible timbers were analysed by Dr Lee Newsom at Pennsylvania State University (Table 1).

An unusual site-formation feature was encountered at an area of what initially appeared to be frames exposed from the stern to midship on the starboard side (Fig. 4). Salvors, instead of digging straight down into the wreck through the ballast in a systematic manner, picked at the loose stones along the lower edge of the mound. Because the wreck rested on a coral reef rather than on sand, stones that had fallen along the bottom exterior of the hull could be accessed and removed. This created a surprising and interesting visual experience. The wreck appears to be resting on its keel with lower hull planking removed, allowing a diver to look into the bottom portion of the shipwreck and see intact frames exposed underneath the ballast mound and slightly protruding from the edge of the mound. Shining a light into the void between frames under the ballast shows sections of the keel, as well as groupers, large lobsters, and a huge green moray eel living in the space.

Closer inspection of the 'frames' revealed they were not made of wood, but seemed to be composed of a concrete-like substance (Fig. 5). Corey Malcom, of the MFMHS, was aware of a sort of cement called *granel* consisting of lime,

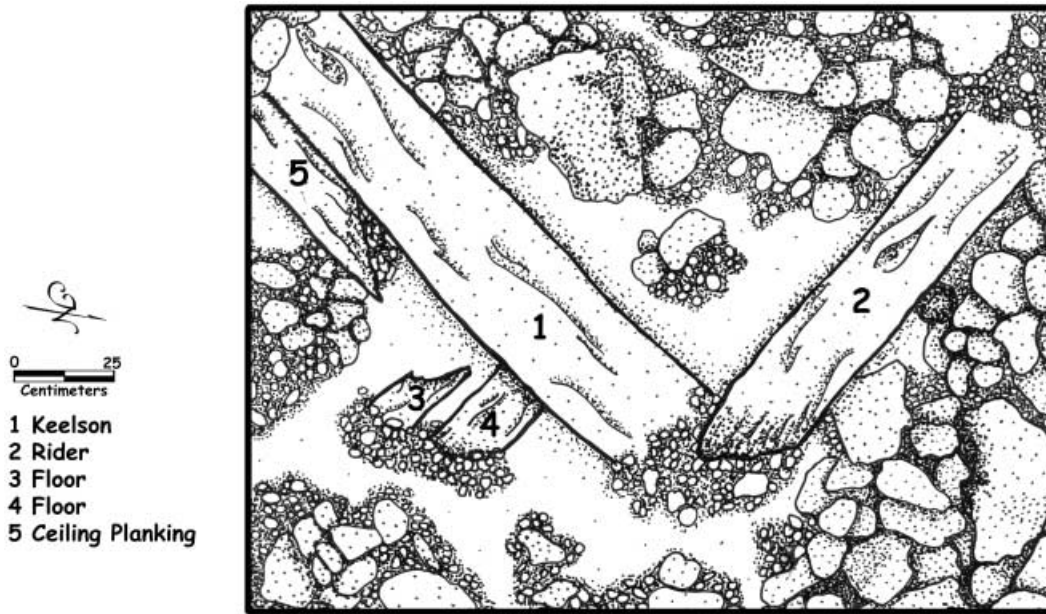


Figure 3. Drawing of midship timbers. (courtesy of Irina Franklin)

Table 1. Scantlings and wood species

Timber	Length	Moulded	Sided	Wood Species
Keel	~19 m	Stern: 0.25 m	Stern: 0.20–0.33 m Bow: 0.31 m	<i>Quercus</i> sp. (white oak)
Keelson		0.15 m	0.25 m	<i>Quercus</i> sp.
Sternpost		0.4 m	0.15–0.2 m	<i>Quercus</i> sp.
Rider			0.16 m	<i>Quercus</i> sp.
Tail-frame 1			0.18 m	
Tail-frame 2			0.19 m	
Tail-frame 3			0.19 m	
Tail-frame 4		0.33 m	0.2 m	
Floors		Stern: 0.33 m Bow: 0.5 m	Stern: 0.18–0.2 m Bow: 0.16–0.25 m	#19: <i>Quercus</i> sp. <i>Picea</i> sp. (spruce) probably <i>Picea</i> sp. <i>Pinus</i> sp. (pine) including <i>P. halepensis</i> ('Aleppo pine') and <i>P. canariensis</i> (Canary Islands pine) <i>Guaiacum</i> sp. (lignum vitae)
Garboards				
Ceiling				
Hull planking				
Logwood	1.6 m			

sand, and small pebbles that sometimes was poured between the frames of 17th-century Iberian ships. This mixture was specified by contract to be used in the building of *Nuestra Señora de Atocha*, wrecked in 1622 (Alonso Ferrera, contract of 1616 (Archivo General de Indias (AGI) Contratación 4895) for four 550-ton galleons, including *Atocha*). The *granel* acted as permanent ballast, as well as protecting the floors and lower frames from damage due to shifting cargo. The same or a similar substance

seems to have been used in the construction of the Mystery Wreck. What first was thought to be wooden frames actually is poured permanent ballast that filled the spaces between frames, providing a sort of negative image of the lower hull timbers. The poured ballast extended to approximately the turn of the bilge on the starboard side and allowed the recording of frame spacing (0.25 m at bow and stern; 0.45 m midships). The sternmost existing poured ballast feature appears to have an arched bottom which



Figure 4. Ballast-mound with exposed ship structure. (courtesy of Jeff Anderson)



Figure 5. Permanent ballast frame 'negatives.' (courtesy of the Florida Bureau of Archaeological Research)

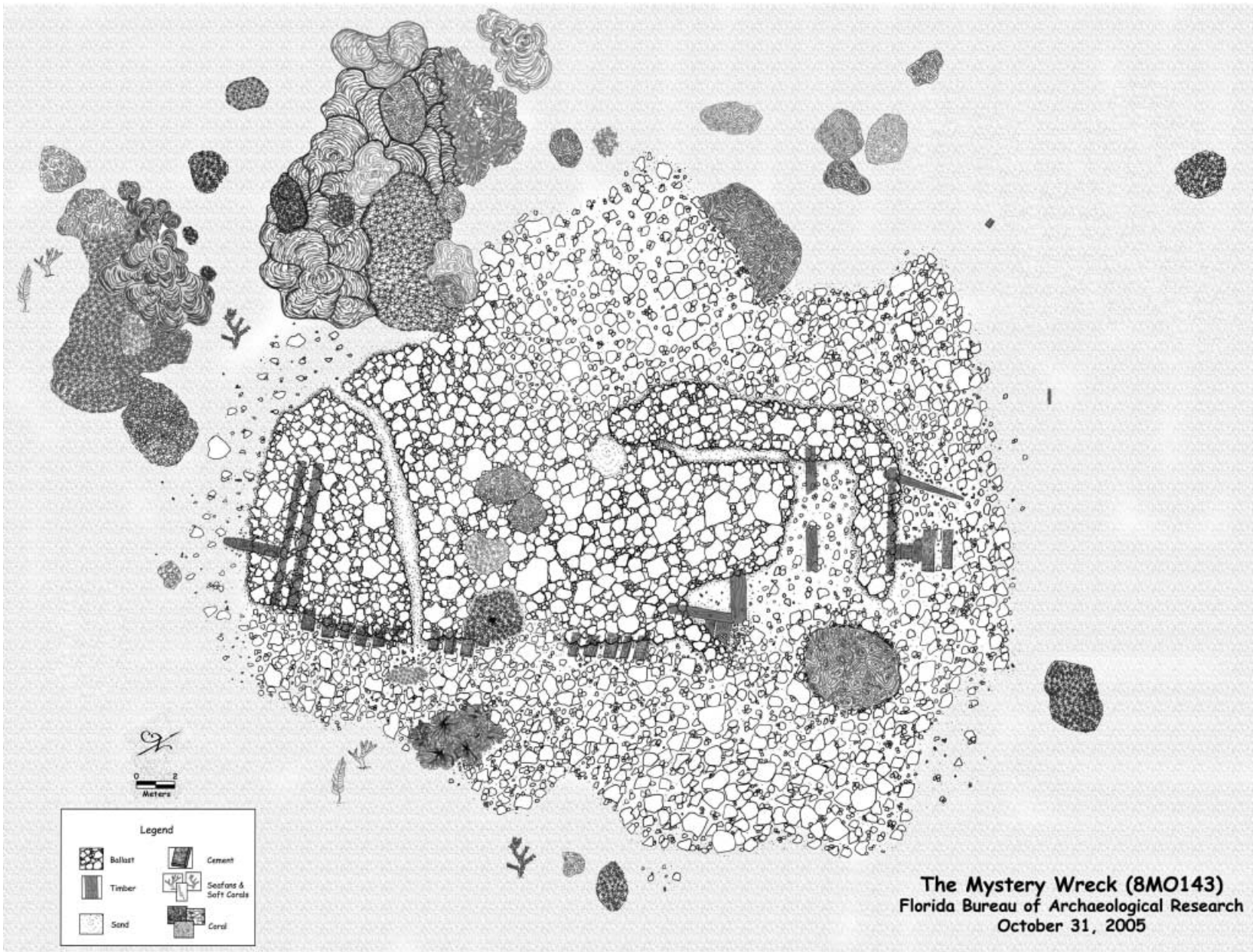


Figure 6. Mystery Wreck site plan. (courtesy of the Florida Bureau of Archaeological Research)

would have allowed water to flow to the ship's pump. Additional ballast features, however, were not accessible to verify arching of the bottom face.

The accompanying site-plan indicates the complex cultural and natural features of the Mystery Wreck site (Fig. 6). The central undisturbed ballast of compact stones is denoted by dark shading. Scattered ballast on the outboard edges is less compact, the result of natural site-formation processes as well as past salvage activities. Reef structure including hard and soft corals is indicated around the ballast-mound. Few corals have colonized the central mound, but a dense and vibrant forest of colourful corals and sea-fans surrounds the wreck-site. The ship is embedded in living reef, not all of which could be depicted in this perspective. Extreme bow and stern timbers are exposed at the forward and aft ends of the ballast-mound. 'Frames' protruding from the ballast are negatives formed by the poured permanent ballast. More ship structure, indicated by dotted lines, is visible than could be shown in plan view. This structure extends at least 4 m into the void under the ballast. The fissure can be seen bisecting the stern section. A mountain star coral cored to determine its age is visible on the ballast near the starboard midship edge.

In addition to the recording of the cultural features of the site, the natural features were recorded by NOAA. The patch reef surrounding the Mystery Wreck is seldom visited by sport divers because of unpredictable visibility (caused by its location on the edge of the murky water of Hawk Channel). As a result, the site has not suffered from excessive human impact, unlike many other reef areas in the Keys. Together with the lack of human impact, the nutrient-rich water of Hawk Channel provides an ideal habitat for coral formation. Several species were recorded, including giant brain coral (*Colpophyllia natans*), several species of mountain star coral (*Montastrea* sp.), and staghorn coral (*Acropora cervicornis*). Some of the brain corals exceeded 4 m in diameter, and the largest mountain star coral stood over 2 m off the bottom. One mountain star coral, 1.5 m in diameter, growing atop the ballast, was cored to determine its age, which exceeded 100 years. A plethora of purple sea-fans (*Gorgonia ventalina*) and other soft corals are attached to ballast-stones and extend into the reef structure around the wreck. This habitat provides shelter and feeding grounds for marine animals including grey angelfish, nurse sharks, sea turtles, damselfish, barracudas, groupers,



Figure 7. Tropical sea-life inhabiting the Mystery Wreck. (courtesy of the Florida Bureau of Archaeological Research)

snappers, lobsters, molluscs and crustaceans of many varieties (Fig. 7).

Few artefacts were encountered during the investigation—the result of indiscriminate collecting by the initial salvors and scavenging by random sport divers. A piece of kaolin pipe-stem (internal diameter $\frac{1}{8}$ in) and a small sherd of undecorated white tin-glazed coarse earthenware, identified as majolica, were recovered near the pump-box. The largest artefact recovered was a piece of logwood wedged under the forwardmost bow frame. Made of *lignum vitae*, measuring 1.6 m (just over 5 ft) long and with one carved end, it initially was thought possibly to be a gunner's wedge or similar tool, used to try to heave the ship off the reef where it had grounded. Further analysis indicates it probably was among the cargo and became trapped under the hull as the ship disintegrated. Small bits of olive jar of indeterminate age were scattered around the shipwreck, but not collected.

Based on analysis of artefacts recovered by the salvors, in addition to construction features and material collected during the project, the Mystery Wreck appears to have been a small vessel built in the Iberian tradition, approximately 19 m long and at least 7 m in beam. It possibly was an *aviso* or dispatch vessel travelling in company with other ships. Some time during the first half of the 17th century, the ship was sailing along the remote islands of the Keys in sight of land when it left the deep water of Hawk Channel and ran hard aground on an isolated patch reef. The vessel was damaged and stuck fast by the bow, and the crew was unable to get it off the reef, so

it was stripped and abandoned. As it slowly deteriorated, the ballast concreted together in a solid mass. When the keel finally collapsed and no longer supported the ballast, the concreted mass broke in two, producing the fissure that bisects the mound. Wooden timbers not covered by sediments were consumed by marine organisms and destroyed by waves and currents, leaving behind ghost impressions in permanent ballast

poured into the lower hull. The surrounding reef community engulfed the wreck and marine life colonized the ballast, helping to protect the remains from natural erosional forces. Today, the Mystery Wreck is part of the maritime heritage resources of the Florida Keys National Marine Sanctuary and the State of Florida and presents an opportunity for future research and interpretation of our colonial maritime history.

Acknowledgements

The authors wish to thank the staff of the Florida Bureau of Archaeological Research, the Florida Keys National Marine Sanctuary, and NOAA's Maritime Heritage Program for making this project possible. Visiting and local archaeologists, biologists, photographers, reporters, and volunteers, too numerous to list but individually appreciated, contributed to the success of the Mystery Wreck Project. Special appreciation is extended to Roger Smith for his knowledge and expertise, and to Jeff Moates for assistance with graphics.

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