

The Emanuel Point Ship: a 16th-century Vessel of Spanish Colonization

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The well-preserved remains of a mid-16th-century Iberian sailing vessel were discovered in 1992 during a state survey of sunken ships in Pensacola Bay, Florida. The ship apparently had grounded violently during a severe storm on a shallow sand bar off Emanuel Point in the central part of the bay (Smith, 1994, 1995). Two multi-year campaigns of excavation, conducted by a partnership between the Florida Bureau of Archaeological Research, the University of West Florida, and the Historic Pensacola Preservation Board, have gathered evidence to support the conclusion that the ship was one of the larger vessels in the fleet of Tristán de Luna, which brought the first European colonists to Florida in 1559 (Smith et al., 1995, 1998).

The expedition of Tristán de Luna has long been a forgotten chapter in the history of Spanish colonization. Under his command, a fleet of two ships embarked from Veracruz, Mexico in 1559 to establish a colony in Florida and secure the northern frontier of New Spain for the crown. Their destination was the large and sheltered port of Ochuse (modern Pensacola Bay), which had been recommended by previous navigators charting the northern Gulf of Mexico. Luna had instructions to create military and civilian settlements, both on the Gulf and on the Atlantic, to prevent encroachment by other European powers and to make the regions safe for Spanish navigation. He was to construct regular Spanish towns, and to appoint town councilmen, judges, and bailiffs. The first town at Ochuse was to have a fortress large enough to contain 100 settlers, and to include inns, storehouses, jails, and slaughterhouses (*Instructions of the Viceroy to Don Tristán*. In Priestley, 1928, 1, p. 18-33).

Aboard Luna's ships were 1000 settlers and servants, 500 cavalry and foot soldiers, and 240 horses. Aside from clergymen, Aztec mercenaries accompanied the expedition, as did Tlaxcalan farmers. Equipped with livestock and agricultural and construction tools, the colonists arrived at Pensacola on August 15, 1559 and began to disembark and unload the ships. However, on September 19, a hurricane struck the colony, causing a great loss of life and supplies. Anchored in the harbor, the fleet was vulnerable- only three of the smaller ships, one caravel and two barks, safely rode out the storm. Larger naos and galleons, some of which had not been completely unloaded, were swamped (*Luna to Philip*, September 24, 1559. In Priestly, 1928, 2, p. 245). The catastrophe doomed the Luna colony, which eventually was abandoned in 1561. Pensacola was forgotten by Spain until 1698, when a permanent *presidio* finally was established.

The shipwreck's remarkable degree of preservation, despite being located in only four meters of warm Florida water, is due to a compact and discreet stratigraphy (Fig. 1). The ship's lower hull and ballast stones have been protected from erosion and storms by a stratum of oyster, clam, and mussel shells bound in compacted silt. This layer is the result of gradual accumulation of generations of marine organisms that thrived and died on the artificial reef created by the remains of the ship. Below the shell cap is a complex layer of loose silt and shell which represents the original deposition of marine sediments that entered the hull as it wrecked and disintegrated. Artifacts and other remains associated with the demise and collapse of the ship are found in this layer, while those that accumulated in the bottom of the vessel during its sailing career are trapped in a dense but soft organic deposit between the ship's frames and in its bilge. This deposit has produced a surprising array of floral and faunal remains, as well as other organic debris. Below the ship's hull are sediments of clean, compacted sand that represent the original bar upon which the ship came to rest.

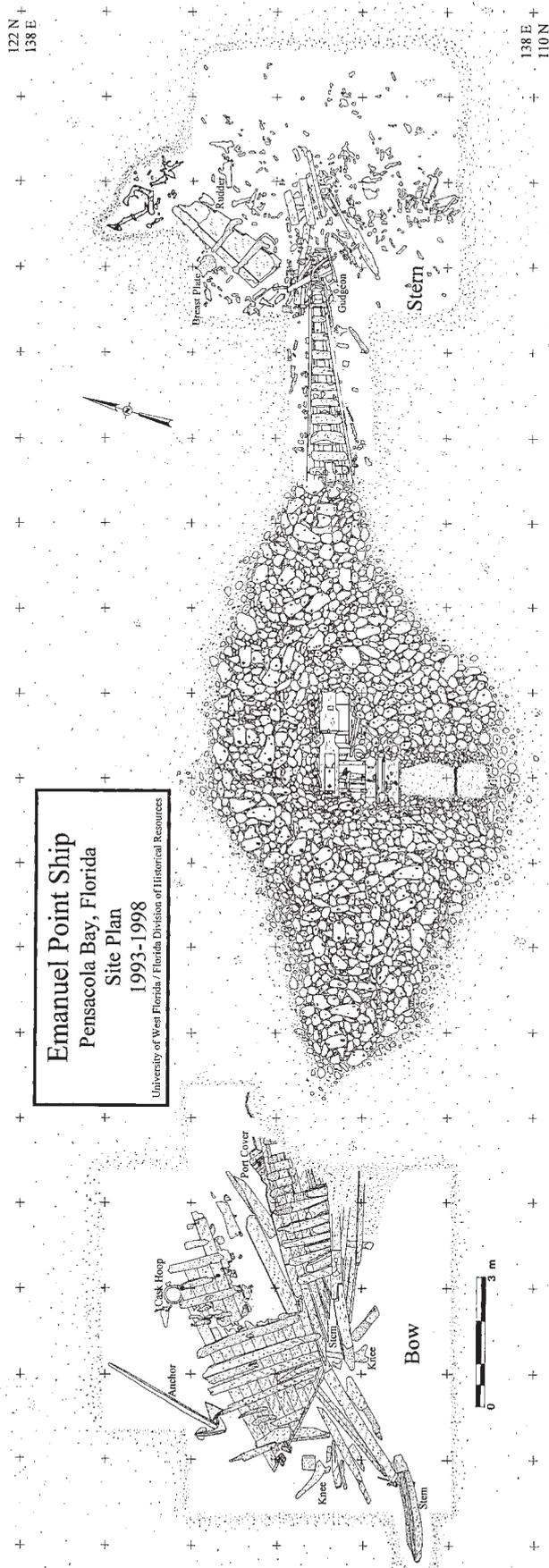


FIG. 1 — Site plan.

Although only 40% of the shipwreck site has been investigated to date, over 5,000 artifacts and field specimens have been recovered from the hull. These items represent the broad spectrum of cultural materials that not only accompanied the ship on its last voyage, but those that had accumulated in the bilge from the time the vessel was built. For example, amongst carpenters' scraps associated with the pump box was found a small silhouette of a ship, carved from fir. The architectural hallmarks of a mid-16th-century galleon — a heavy beakhead, prominent fore and stern castles, and a stern gallery — have been faithfully reproduced in miniature. When compared with a contemporary votive model of a 1540 galleon, the nautical characteristics of the carving appear strikingly accurate.

Also well preserved in the bilge were found remnants of tools, fragments of clothing, portions of a previous cargo of mercury that had escaped its containers, and a copper coin minted in Spain between 1471 and 1474, that may have come aboard with the recycled ballast of earlier ships (Scott-Ireton, 1995). Evidence of inevitable stowaways also had accumulated in the bilge. A population of black rats (*Rattus rattus*) that once inhabited the hold is well represented. Examples of all but the tiniest portions of the rodents' osteology were recovered; they reveal a life stressed by cannibalism, tooth decay, and rickets caused by serious vitamin deficiencies. In addition, evidence of the European house mouse (*Mus domesticus*) also was found, although the two populations of rodents probably did not occupy the same niche aboard the ship.

The degree of organic preservation present in the ship's bilge sediments is best reflected by deposits of insect remains, notably the hide beetle (*Dermestes maculatus*), that may have accompanied a previous cargo of New World cowhides, and the now-ubiquitous American cockroach (*Periplaneta americana*), which is thought to have originated in Africa. Similarly, botanical remains survived in the wreck, most notably seeds and nuts of both American and European varieties. These include persimmon (*Diospyros Virginiana*), sapote (or zapote), (*Pouteria* sp.), papaya (cf. *Carica papaya*), olive (*Olea europaea*), plum prune (*Prunus domestica*), cherry (*Prunus cerasus*), almond (*Prunus amygdalus*), hazelnut (*Coryleus* sp.), hickory (*Carya* sp.) and oak (*Quercus* sp.) (Bratten, 1995).

Other evidence for shipboard provisions includes large numbers of butchered bones, representing domestic pig, cow, goat or sheep, and chicken. The predominance of beef ribs, found in association with broken containers in the bow, is representative of a common fare, rather than one made up of choicer cuts of meat. Wooden casks and earthenware jars held most of the comestible stores. Many of the porous jars had been coated on the interior with resin to prevent seepage of liquid contents. Lead- and tin-glazed tableware, found in greater frequency at the bow of the ship, consist mainly of monochrome varieties, revealing a common, rather than high-class cuisine. An intact example of polychrome Majolica ware, however, was recovered from beneath the crown of the ship's anchor, where it had miraculously survived. Other remarkable ceramics include fragments of molded and painted red Aztec pottery, some with human features. These rare forms have few parallels in the archaeological record, both from land and underwater.

In the galley at the forward portion of the ship was found a large copper cauldron with a heavy bale and reinforced rim; nearby, remnants of two smaller cauldrons were recovered (Bratten, 1998). In association with these was a heavy copper pitcher, designed with a flaring body to stand upright without capsizing in pitching seas. Analysis of the corroded metal revealed that the container had been lined with tin. A similar tin-lined copper saucepan also was found, as well as the remains of a copper skillet and funnel. Deeper in the sediments of the bow were found disarticulated pieces of another large copper container, made up of four side panels riveted together with vertical and horizontal reinforcing bands, a rounded bottom, and two horse-shoe-shaped handles. Analysis of a heavy residue in the bottom of the cauldron revealed tar and

associated melted byproducts. This collection of cuprous wares represents a common galley assemblage on a 16th-century ship. García de Palacio's list of essential shipboard implements specifically includes these items — "a cauldron for tar; two cauldrons for the hearth; ... a funnel of copper... .. copper pans; [and] tinplate dishes" (Palacio, 1944, p. 138).

Wrecked in the shallow waters of an enclosed bay near shore, the ship undoubtedly was salvaged after the storm. Increasingly desperate settlers probably recovered accessible cargo, equipment, and ship's components. However, they left one of the ship's anchors; embedded fluke down in the sandbar near the bow, it may have been broken in attempts to free it. Its associated ring and upper shank have not been found. More valuable were the ship's complement of artillery and small arms, which are absent from the site. Clues to weaponry turned up in the stern with the discovery of ammunition-stone shot for heavy *pedreros*, cast-iron shot for banded *bombardetas*, and composite lead and iron shot for smaller *versos*. Next to the ship's rudder was found a fragile iron breastplate, badly corroded after long immersion. Examined by experts with the assistance of computer-assisted tomography (CAT), the armor was determined to be of munition quality, of probable Northern Italian manufacture circa 1510, size extra-large (Smith, 1998). In the bow were found molded lead shot for *harquebuz* shoulder arms, and copper bolt heads for crossbows. In addition, two obsidian blades which, like the Aztec ceramics, may reflect the participation of Native Americans in the Luna expedition—were recovered from the shipwreck.

The largest artifact on the site is, of course, the lower hull of the ship. Initial test excavations in the center of the ballast mound revealed articulated structure in a pattern that has become familiar to archaeologists working on early European shipwrecks on both sides of the Atlantic: an expanded keelson, with mortise and chock to house the foot of the mainmast; pump wells to house the shafts of the ship's bilge pumps; and perpendicular buttresses to laterally support this critical area of the hull (Smith, 1994). Removable bilge boards are let into the spaces between the buttresses to protect this area from ballast and trash that might clog the bilge. Beyond the buttresses on the port side is a footwale, which strengthened the hull framing where futtocks joined floors. An exploratory trench conducted outboard and perpendicular to the footwale revealed that ceiling strakes and outer planking were missing at this portion of the hull. Investigation beneath the structure at this point encountered the remnants of two first futtocks that had been sheared from their adjoining floors—signs of catastrophic damage to the ship upon impact with the sand bar.

The stern architecture of the ship was explored, exposing the after end of the keelson, 11 tail frames, 4 lower hull strakes, and the sternpost and stern knee (Spirek, 1995). In addition, the rudder was encountered nearby, along with its fittings. The height of the surviving stern structure is approximately 1.4 m, from the bottom of the keel to the eroded tops of the frames. The whole structure lists to port some 4 to 7 degrees, which corresponds to the port list measured amidships. Tail frames were cut from compass timbers, and show evidence of tabs fashioned as attachment points on either side athwart the keel. Planking in the stern is fastened only with iron; no treenails were observed in this portion of the ship. The sternpost has a rake of 60 degrees of arc (or, 30 degrees aft of vertical). The rudder is fashioned from two planks of wood, edge-joined with large drift pins driven in from the aft edge of the after piece to join the main piece. The rudder appears to have hung slightly below the keel; no evidence for a skeg was observed.

Recent investigation of the forward portion of the ship revealed not only its well-preserved lower bow, but also a significant section of the upper starboard structure, which appears to have collapsed under the weight of a surviving anchor (Cozzi, 1998a). In the lower bow were found seven floors and the lower portion of eight starboard first futtocks in various states of preser-

vation, seven starboard hull planks, three port hull planks, five starboard ceiling (including a footwale), and two port ceiling—one of which is a footwale. Additional hull remains surround the lower bow on both sides. Above the lower bow are frames and planks that broke away from the rest of the hull near the turn of the bilge, collapsing on the bay floor where they became buried and consequently preserved. This collapsed starboard side consists of an articulated section and a scatter of miscellaneous frames and planks. The intact portion consists of 10 hull planks, which are continuous from the center of the hull outward.

Remains of 26 framing members are present; an absence of fasteners joining frame components suggests that they were inserted while the hull was being planked. Starboard hull strakes are articulated and survive forward to their hooding ends, preserving the curvature of the stem, which lies in pieces nearby.

The uppermost ceiling strake was notched to accept filling pieces between frames. Planks are fastened to frames with iron and wood fasteners in a variety of combinations. The most common pattern is one treenail flanked by two square iron nails. In several instances, two treenails, and in one case, three treenails occur at a plank-on-frame intersection.

The upper limbs of two hanging knees, from opposite sides of the bow, were found. Both have equal sided thicknesses and molded heights, and both are broken at the hole where a large bolt fastened them to the hull. At the breech of each knee is a notch that once fit over a clamp; lower faces of the notches are beveled in opposing directions, revealing their positions on opposite sides of the bow. The after face of the starboard knee's throat is recessed to accommodate an adjacent deck beam, suggesting that knees were placed alongside the beams, rather than beneath them.

In addition, two port covers of different sizes were found beneath the lower part of the starboard bow, where they must have fallen before it collapsed. Each is constructed from two layers of planking arranged perpendicular to one another and fastened with square iron nails. Each cover contains five planks, and each was attached to the ship's hull with a pair of iron strap hinges.

In an attempt to determine hull curvature of the lower bow, a digital carpenter's level in an underwater housing—known as a goniometer (Cozzi, 1998b) was employed to record the lower ends of four first futtocks and adjacent planking. This exercise revealed that the vessel had an extremely fine entry. The hollow in the bow begins at the vertical stem/keel scarf and continues aft to the limit of excavation.

The Emanuel Point Ship is a large vessel in comparison with most other 16th-century Iberian shipwrecks reported in the professional literature. The hull appears to have been well constructed, with substantial timbers and fastenings.

There is evidence that economy at the shipyard was a concern. Preliminary analysis of wood samples from the hull indicates the presence of both European and American oaks. At the time of its last voyage as a “moving van” for settlers and their supplies, the ship must have been a veteran of the Atlantic trade. Extensive use of lead to cover planking seams and patch leaks, as well as apparent repairs at both bow and stern indicate that the vessel was quite old at the time of sinking. This is supported by analysis of several thousand artifacts and field specimens recovered from in and around the hull. Although its official name and prior history have yet to be determined, the Emanuel Point Ship, as the earliest shipwreck to have been found in Florida's waters, is providing new perspectives on the shipbuilding and seafaring traditions that helped to establish the Iberian seaborne empires.

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