

Historia marítima y de la navegación en el Caribe e Iberoamérica II
Especialización en Patrimonio Cultural Sumergido
Cohorte 2019

Shipwrecks of the Explorers

Filipe Castro
Bogotá, April 2019



Part 2

Shipwrecks of the Explorers

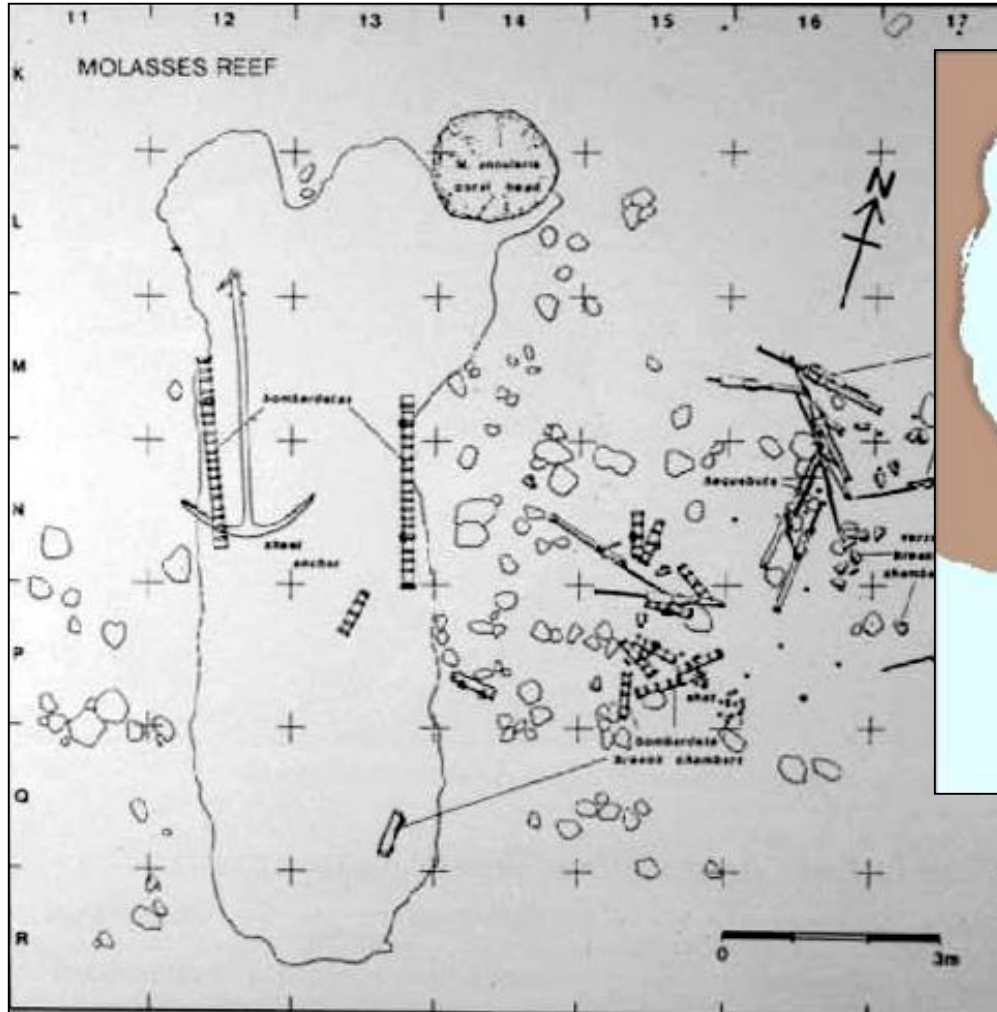


Table I

Early Iberian shipwrecks wrecks found in the New World

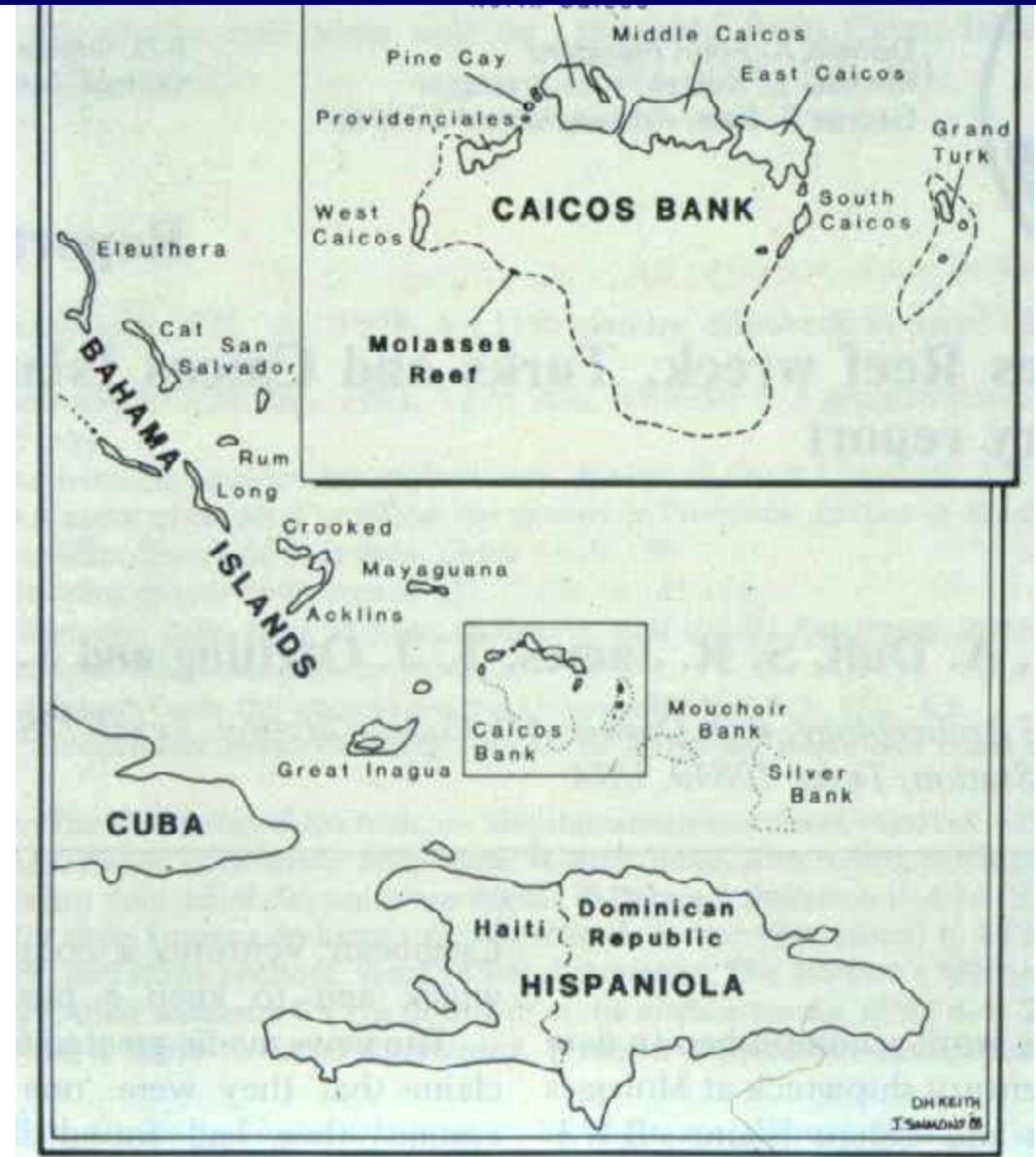
Shipwreck	Date	Location	Timber remains	Data
Molasses Reef Shipwreck	Early 16th c.	Bahamas	Small portion	Salvaged / Excavated (1)
Highborn Cay Shipwreck	Early 16th c.	Bahamas	Part of the bottom	Salvaged / P. Excavated (1)
Bahia Mujeres Shipwreck	Early 16th c.	Mexico	None	Surveyed (1)
Playa Damas Shipwreck	Early 16th c.	Panama	Part of the bottom	Surveyed / Salvaged (2)
San Esteban	1554	Texas	Stern heel	Salvaged / Excavated (1)
Espiritu Santo	1554	Texas	Unknown	Salvaged (1)
Santa Maria de Yciar	1554	Texas	Unknown	Destroyed by dredges (1)
La Condesa	1555	Portugal	Unknown	Looted? (3)
Emanuel Point Shipwreck	1559	Florida	Extensive	Partially Excavated (1)
Pensacola Shipwreck	1559?	Florida	Part of the bottom	Currently being excavated (27)
Saint John's Bahamas Shipwreck	Mid. 16th c.	Bahamas	Part of upper works	Excavated (1)
Mystery Wreck of MAREX	Mid. 16th c.	Bahamas	Unknown	Salvaged (1)
Cayo Nuevo Shipwreck	Mid. 16th c.	Mexico	None	Surveyed (1)
Francisco Padre	Mid. 16th c.?	Cuba	Unknown	Salvaged? (4)
La Galera	Mid. 16th c.?	Cuba	Unknown	Surveyed? (5)
San Juan / Red Bay Shipwreck	1565	Canada	Extensive	Excavated (1)

The Molasses Reef Wreck

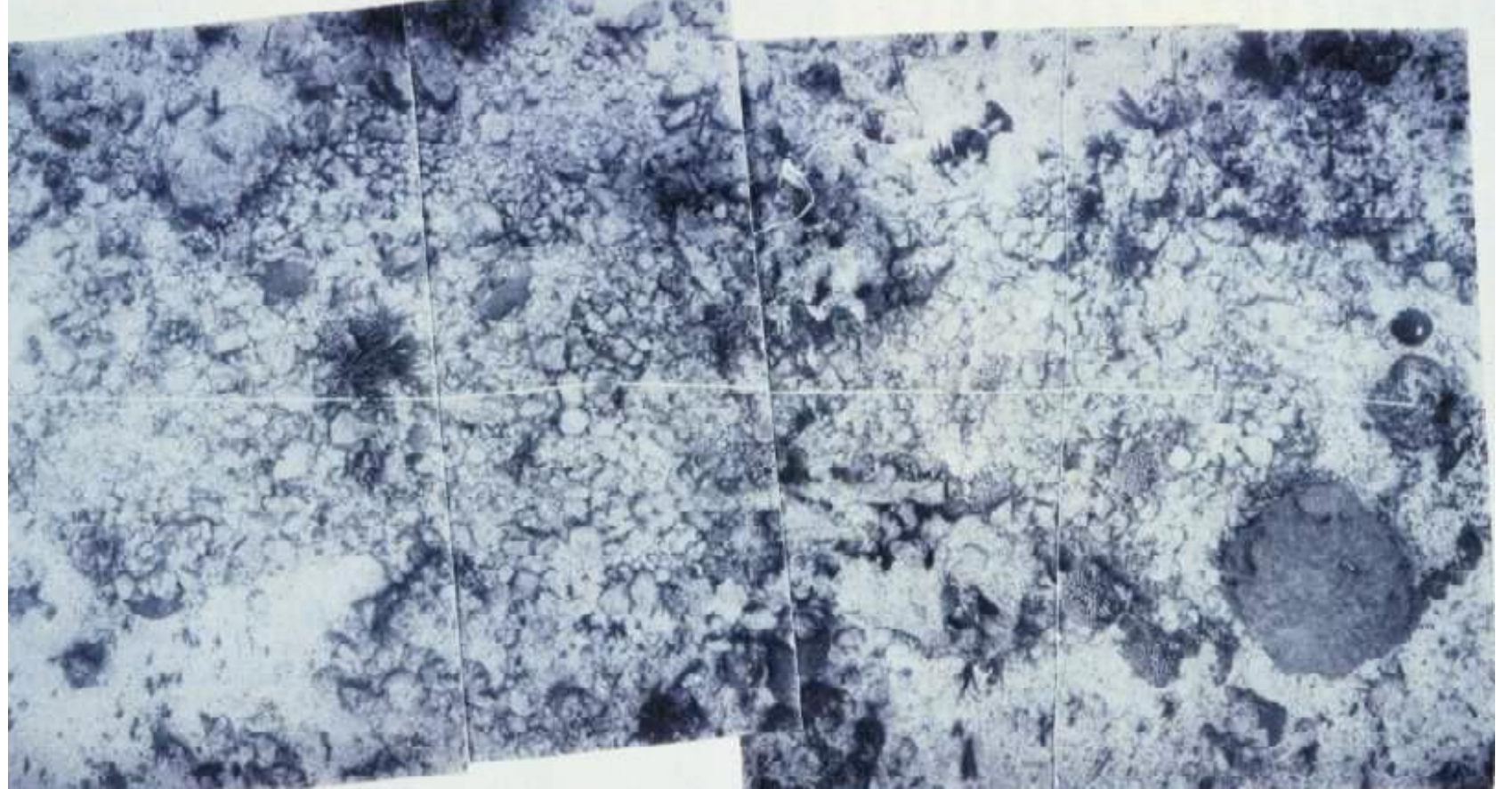


History of the site

The Molasses Reef wreck was found in the early 1970s by sports divers on the southern perimeter of the Caicos Bank, Turks and Caicos Islands, in the Caribbean.



Shipwrecks of the Explorers



Salvaged by treasure hunters – among them the famous Teddy Tucker – at least since 1972, this wreck was blasted by vandals just before the Institute of Nautical Archaeology started archaeological excavations.

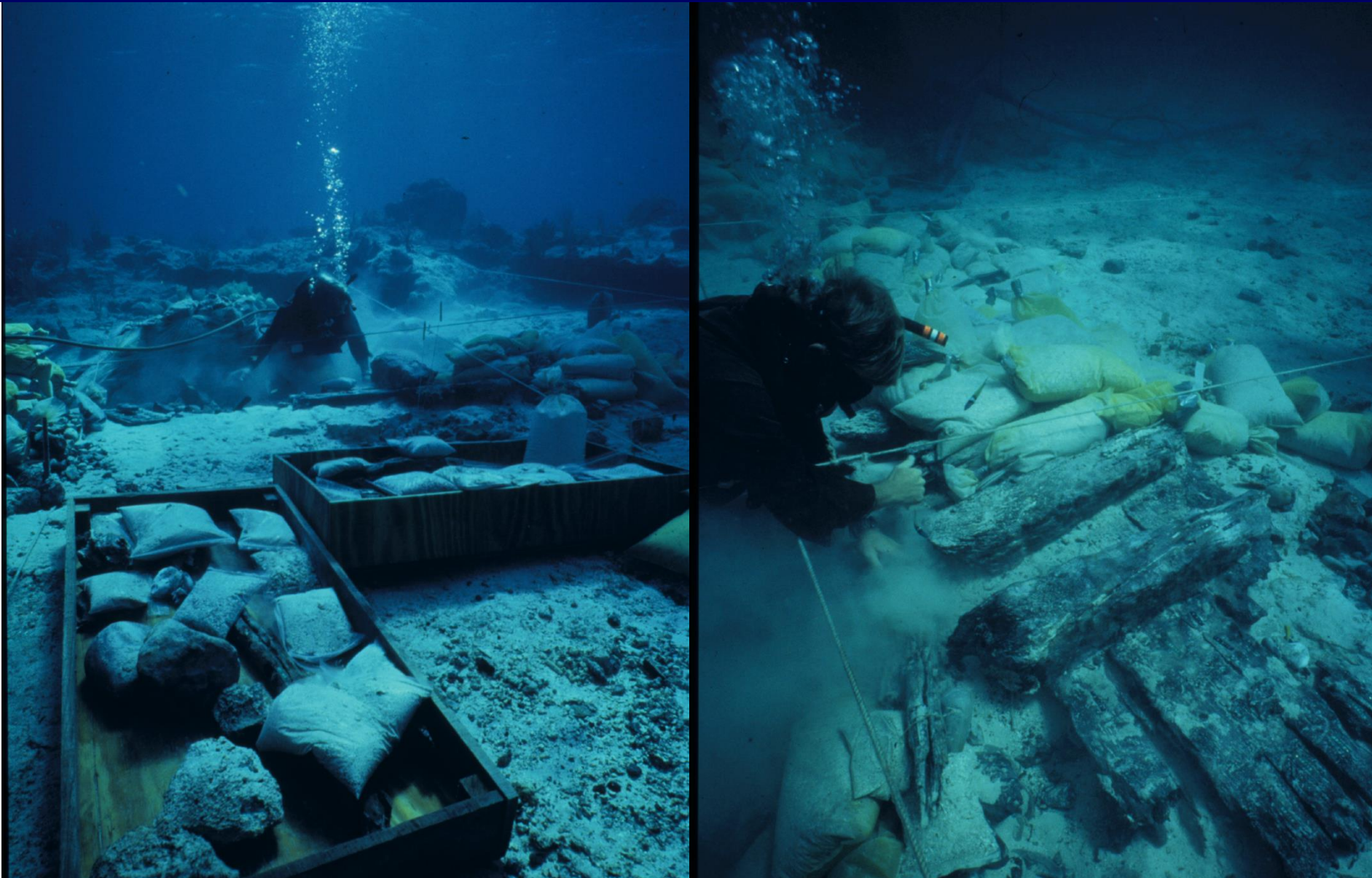
Shipwrecks of the Explorers

The archaeological excavations lasted between 1982 and 1986, under the direction of Donald H. Keith, through INA's Exploration and Discovery Research Team (EDRT).

Shipwrecks of the Explorers



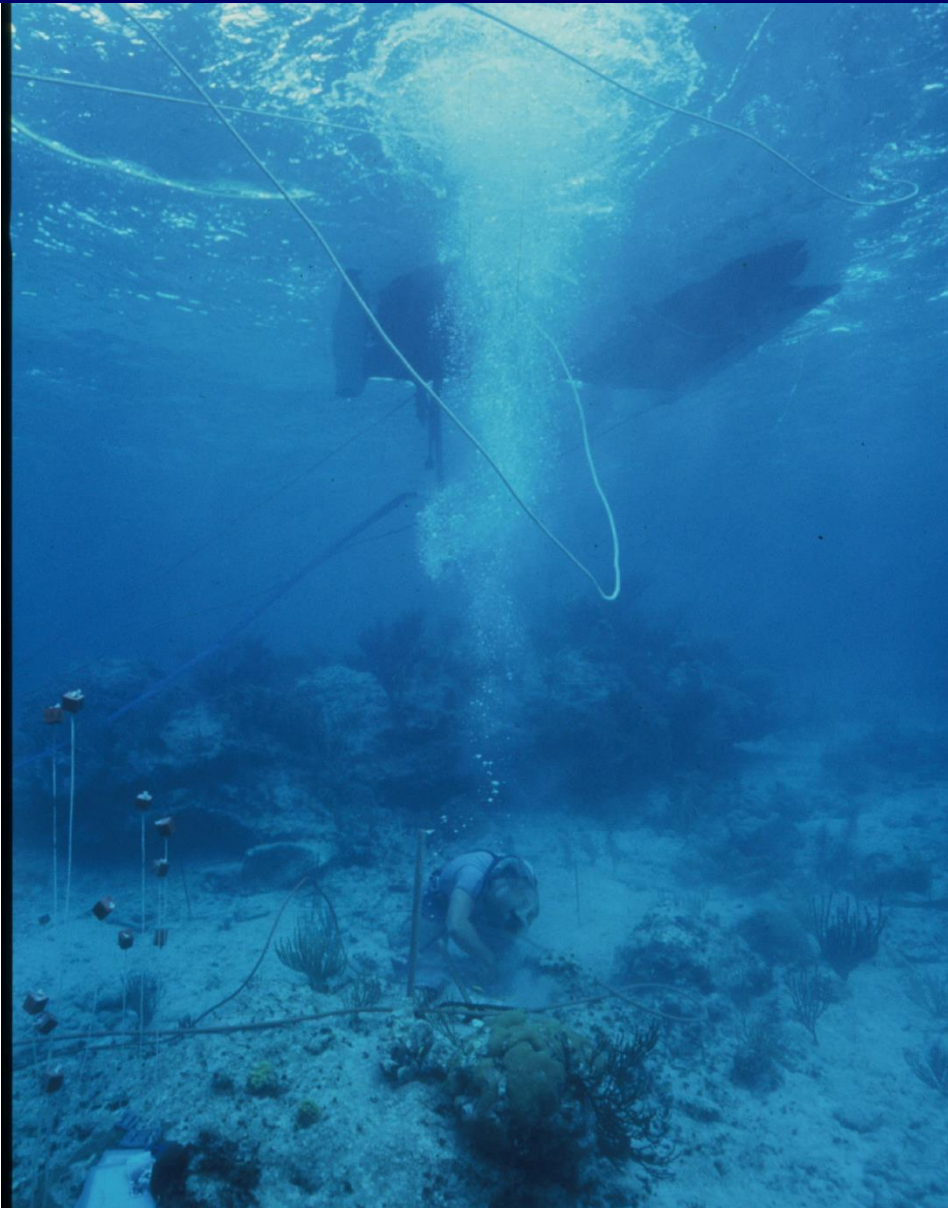
Shipwrecks of the Explorers



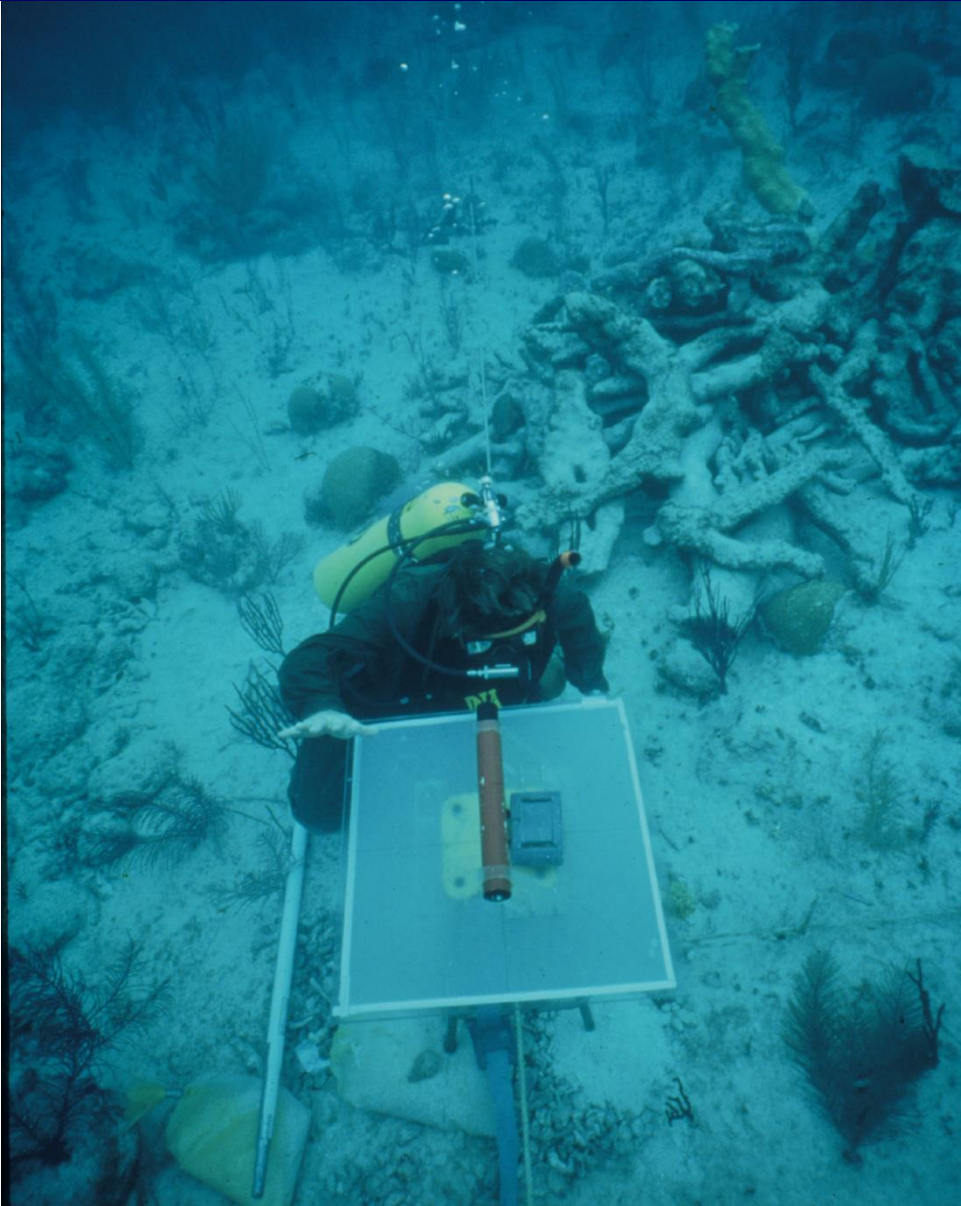
Shipwrecks of the Explorers



Shipwrecks of the Explorers



Shipwrecks of the Explorers



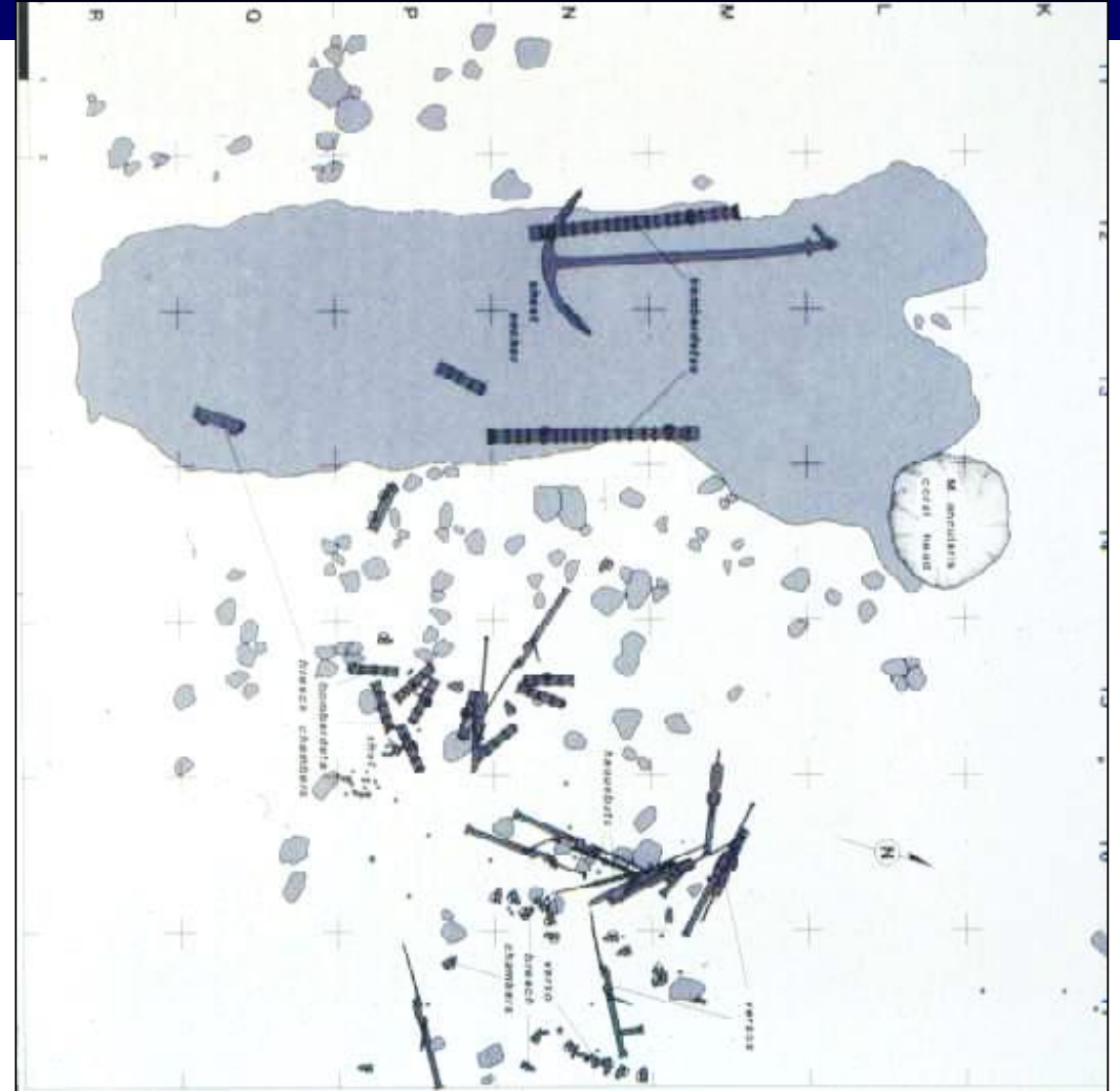
Shipwrecks of the Explorers



Shipwrecks of the Explorers



As it was found by the INA team, the wreck consisted of a ballast pile extending to an area of 11.5 x 3 m, and around 60 cm high. Its weight was estimated around 35 tons.



Under this ballast pile was a preserved wooden structure, consisting of floors, futtocks, planking and ceiling, covering an area of 2.5 x 7.5 m which represented less than 2% of the hull, from a part of the bottom located between the keel and the turn of the bilge.

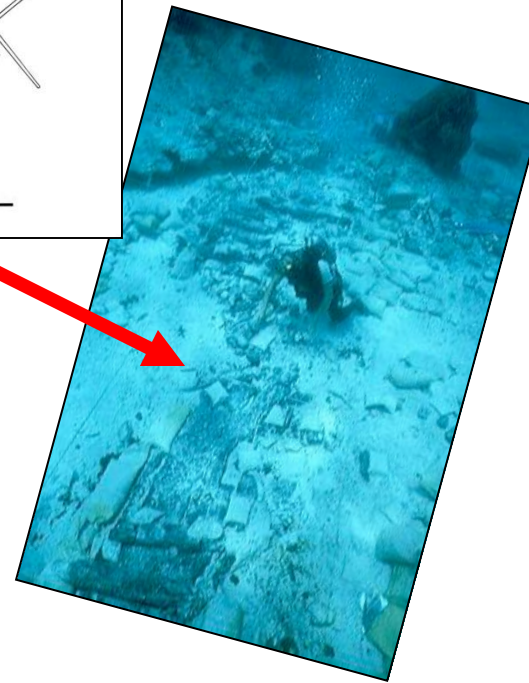
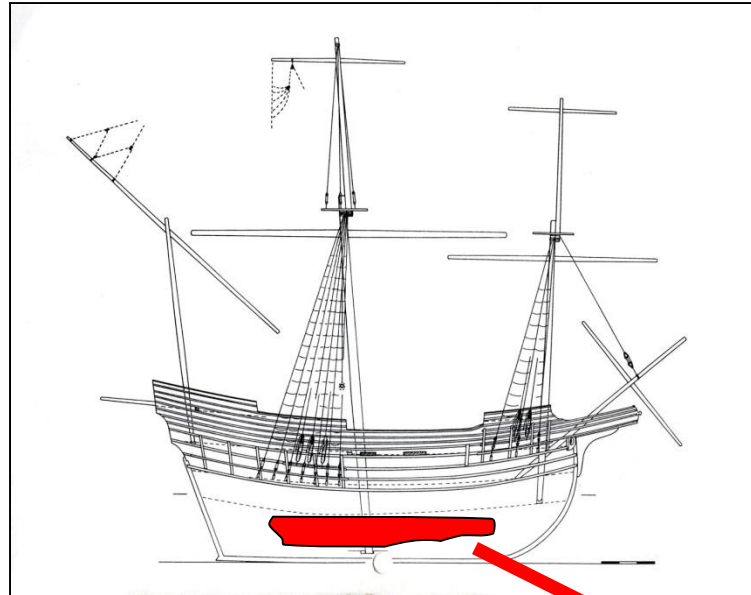


Keel

No keel, stem or stern posts are preserved, although we know from a preserved gudgeon that the sternpost – and presumably the keel and stem post – had a sided dimension of 20 cm.



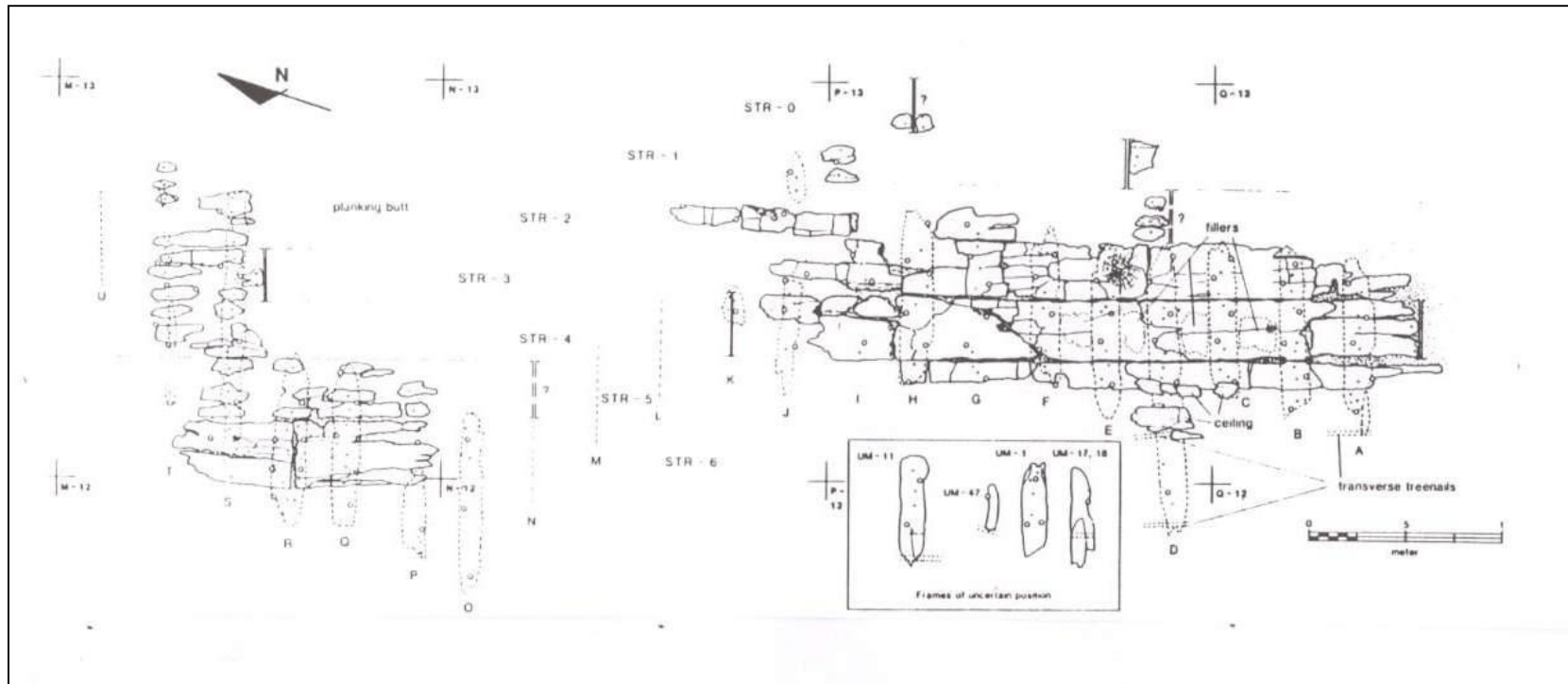
Shipwrecks of the Explorers



Frames

Twenty-four frames or frame positions were found in place.

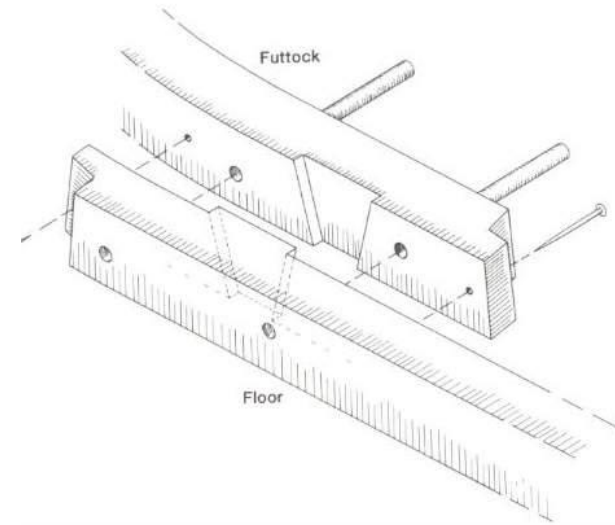
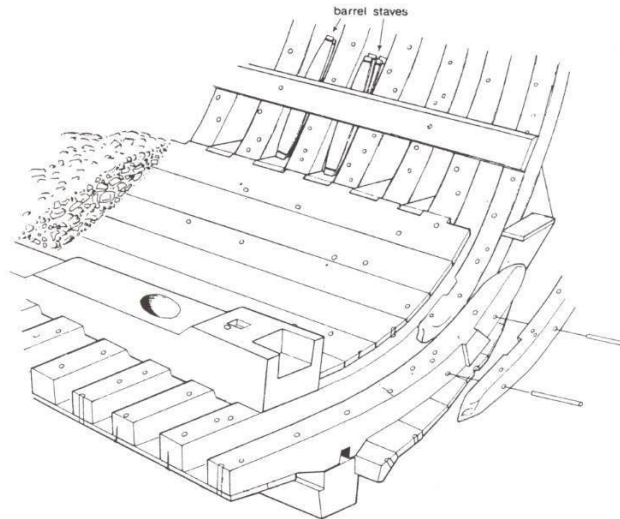
Floors were around 16 cm sided; futtocks were in average 16 cm sided and 16-17 cm molded. Room-and-space was 32.5 cm.



The floors overlapped the futtocks by 75 cm and had dovetail joints, with the mortise on the futtock and the wider side of the trapezoid up, at least in the preserved joints.

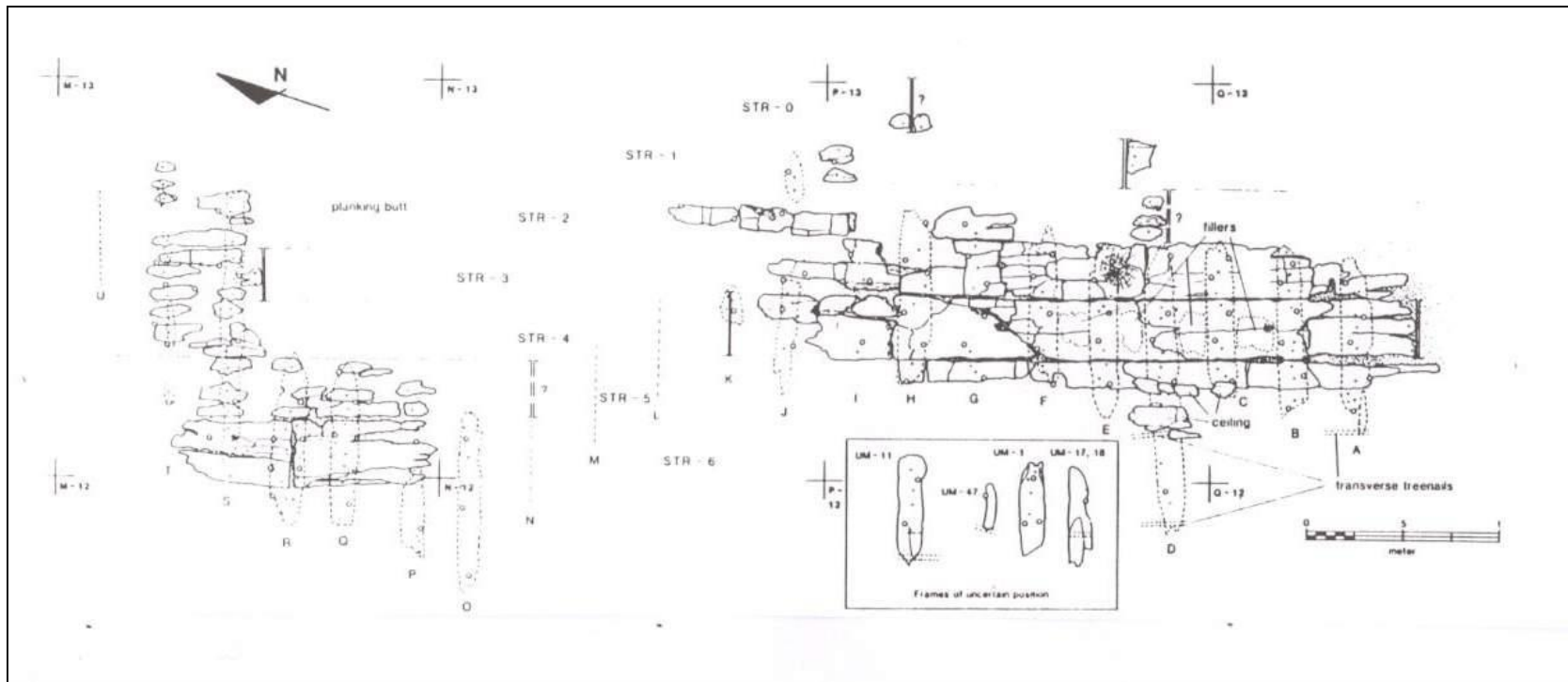
Fillers were found in place, covering the tops of the floor timbers. The (only) midship frame had a pair of futtocks on each side.

At least 11 frames were pre-assembled.



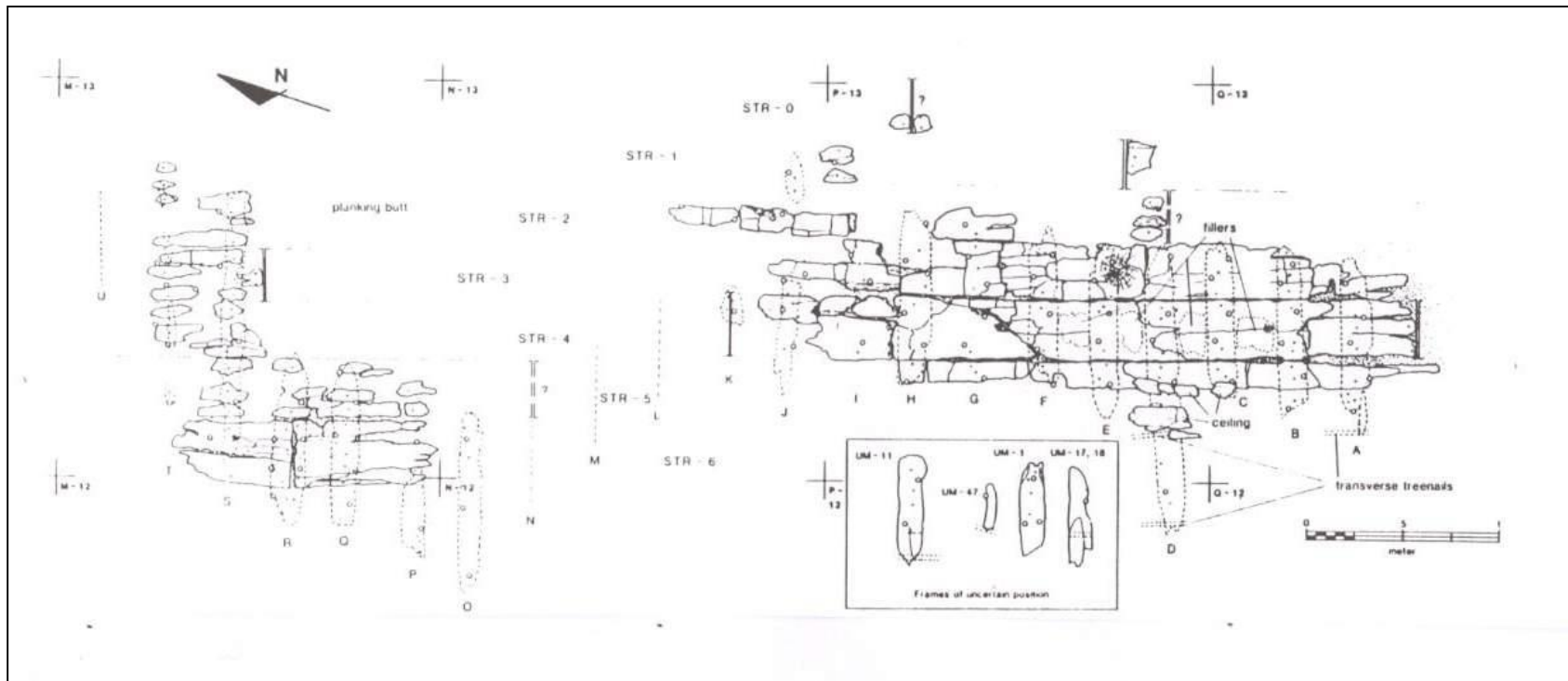
Planking

Six rows of planking were preserved in place, presenting a thickness of 4.5 cm and widths between 28 and 35 cm. All preserved planks were plain sawn and all were butt joined, forming regular strakes.



Ceiling, stringers and wales

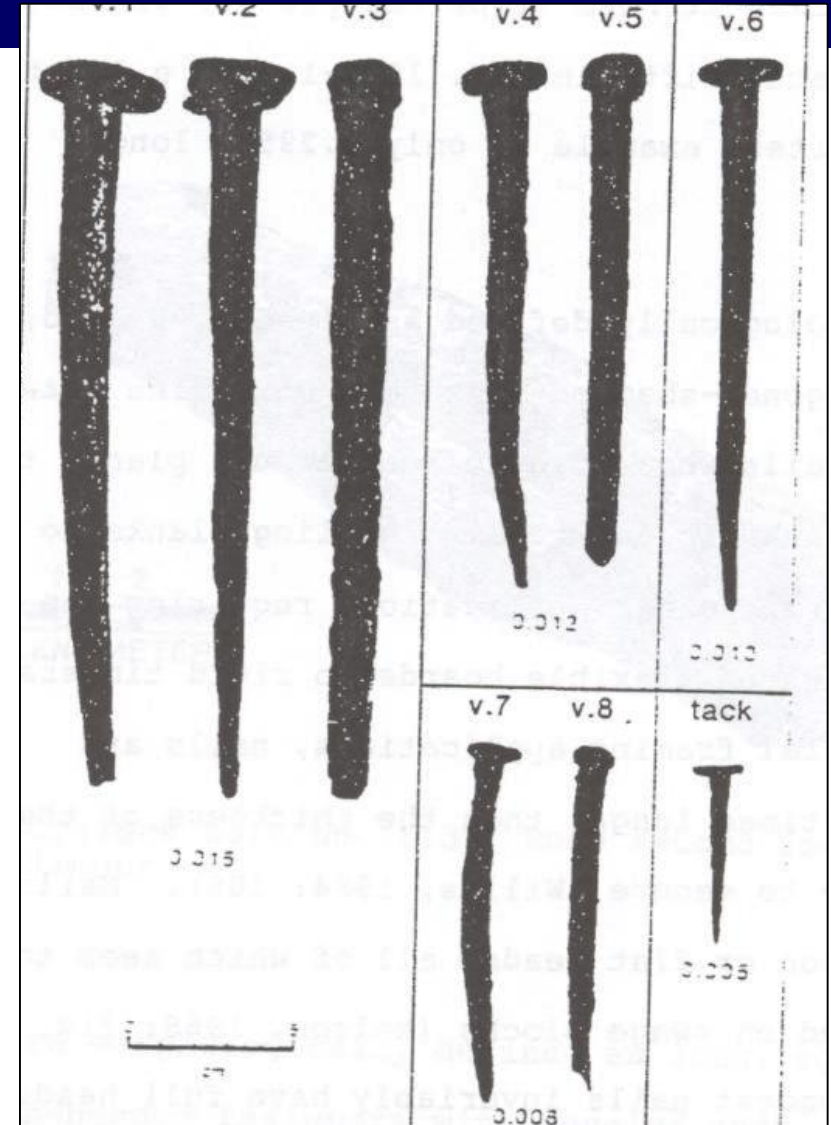
Although a few ceiling planks survived in very poor condition, their dimensions have been estimated as 2 cm thick and around 14 cm wide on average. Five filler pieces were found in place



Fastenings

A great variety of fasteners were found in the concretions around the site. These were divided into oak treenails, iron bolts, drift pins, and nails.

Treenails had diameters of 2.8 cm.

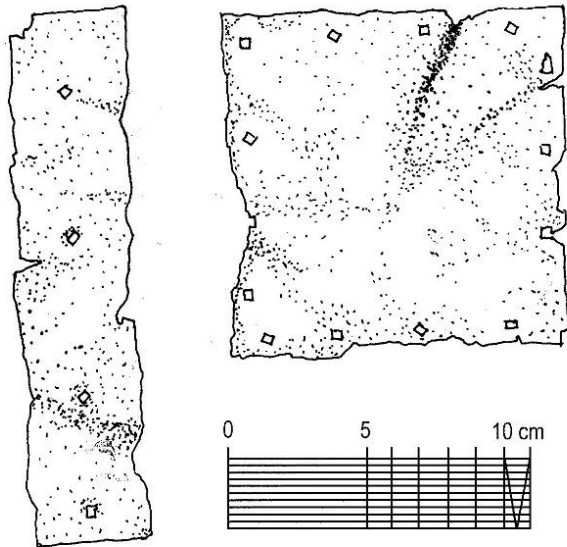


Bolts were 2.7-3 cm in diameter with domed heads, 1.4-3.8 cm in diameter with flat heads, and 1.2-2.8 cm in diameter unheaded. Their lengths varied between 30 and 50 cm.

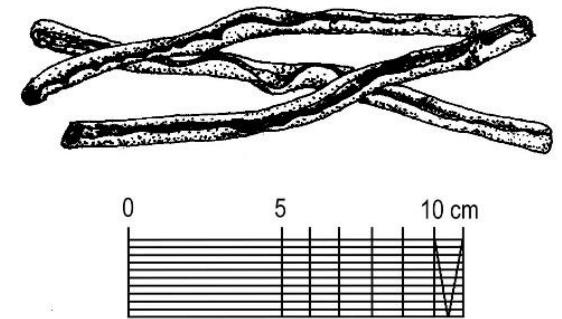
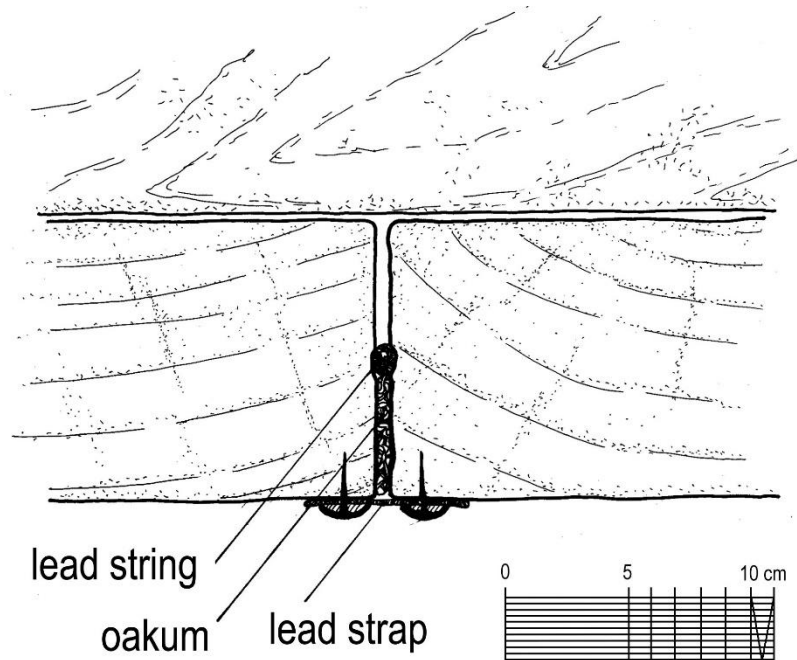
Drift pins had square shanks 1.2-2.8 cm and lengths of 35-45 cm. Nails were button-headed with shanks 0.1-2 cm in square, or flat-headed with square shanks 0.2-1.8 cm. Their lengths varied between 6 and 14.5 cm.

Caulking

According to Keith, "thin strips of lead had been forced between the strakes places" and "lead sheet patches of different shapes and sizes were found on the site". Caulking was found wrapped around the nail heads



Caulking - Shipwreck 99



Caulking

Bom Jesus, 1533, Namibia



Caulking

Sto. António, Seychelles, 1589



Caulking



Nossa Senhora dos Mártires, 1606, Portugal

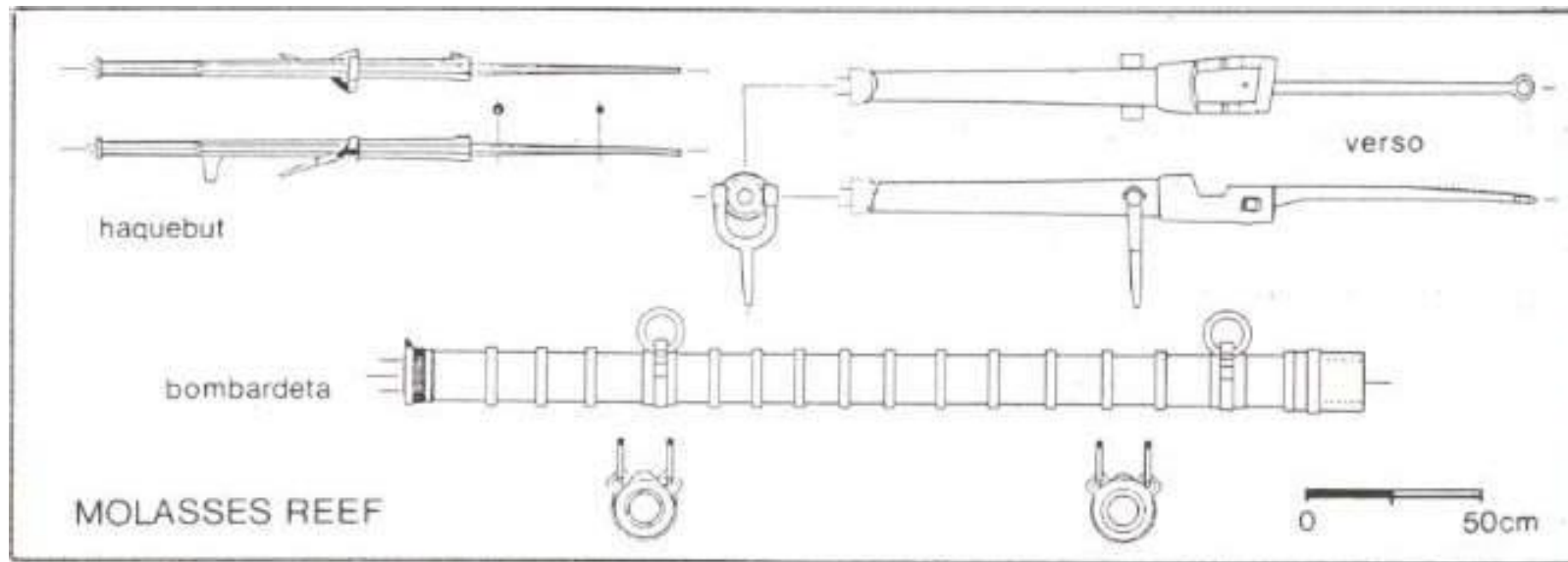
Rigging

Deadeye straps, chain links, coaks, ring bolts, etc.

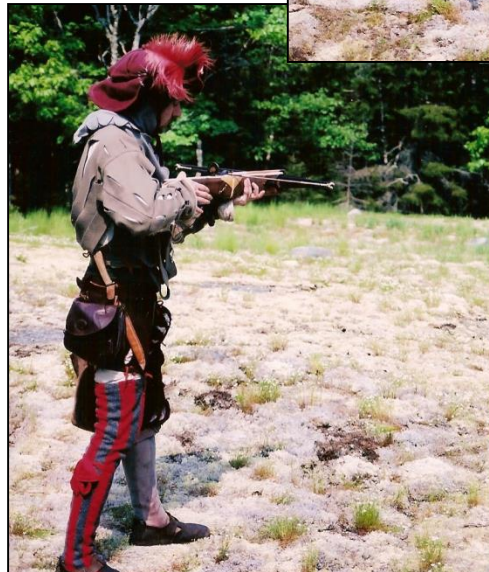
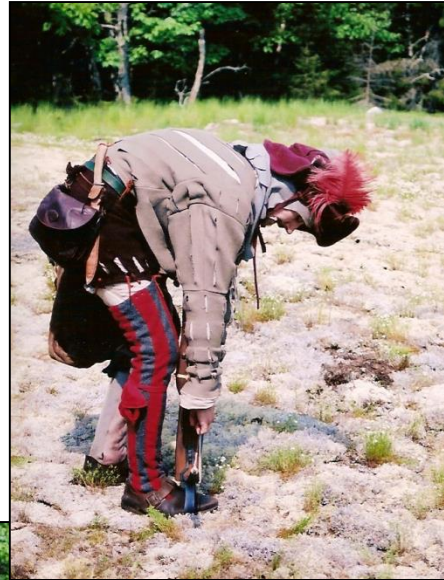


Armament

Crossbows, arquebuzes, 2 haquebuts, 16 versos (3 types), 2 bombardetas, 1 cerbatana, and many different types of shot, including 137 cast-iron shot (after 1495).

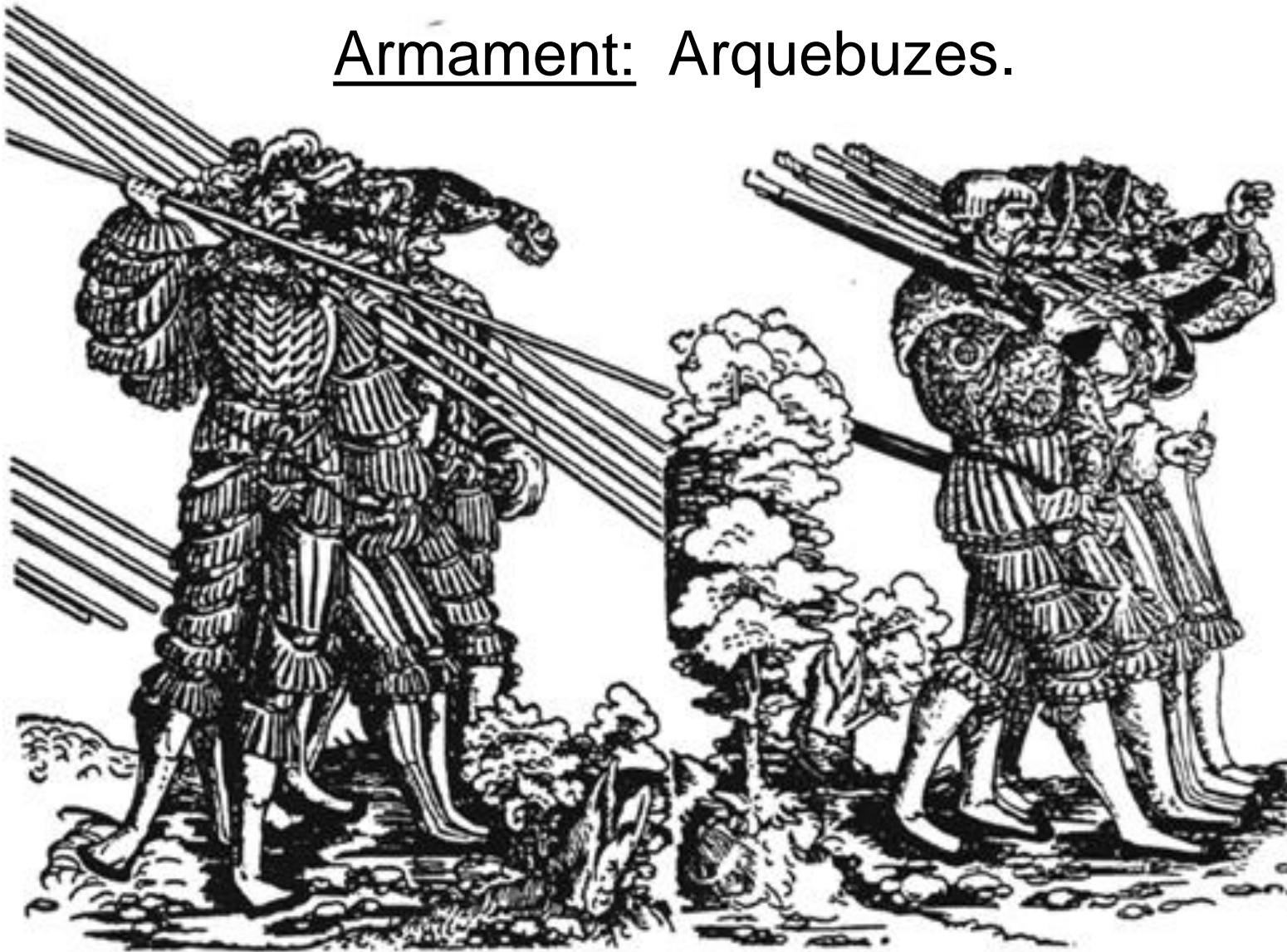


Armament Crossbows.



Shipwrecks of the Explorers

Armament: Arquebuzes.



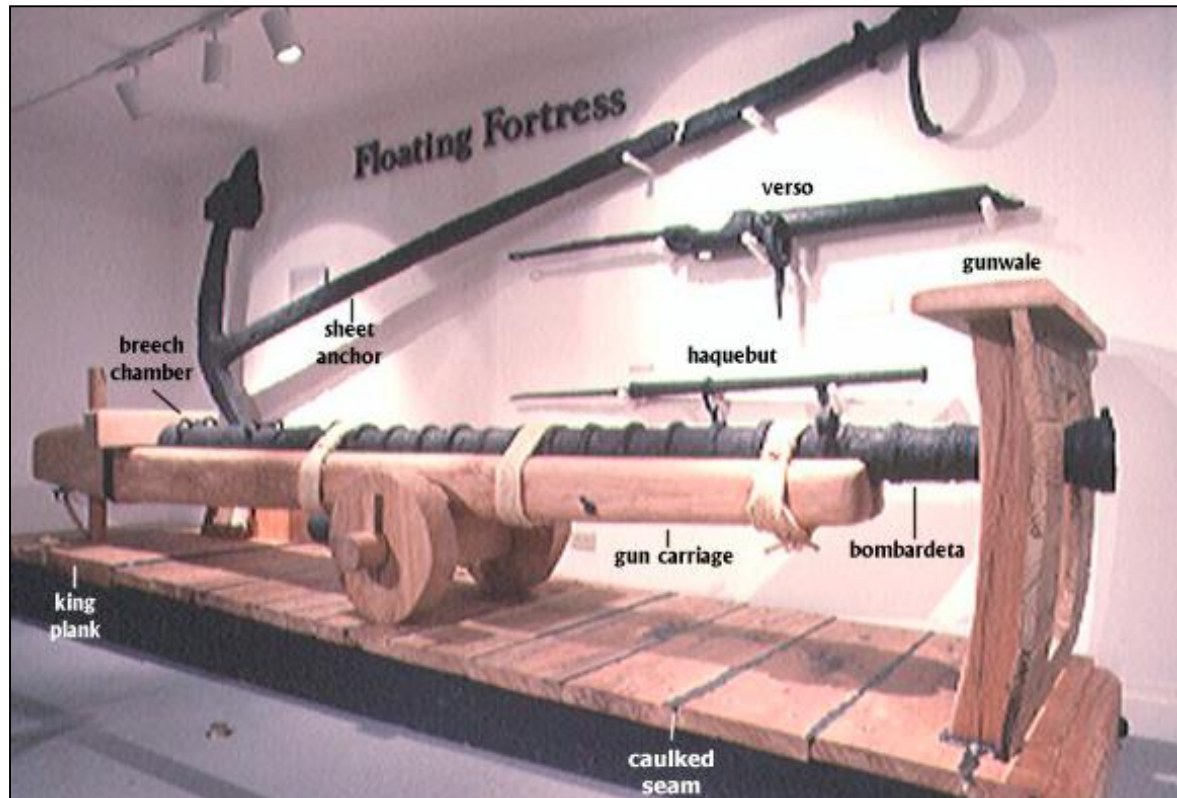
Armament

Arquebuzes.

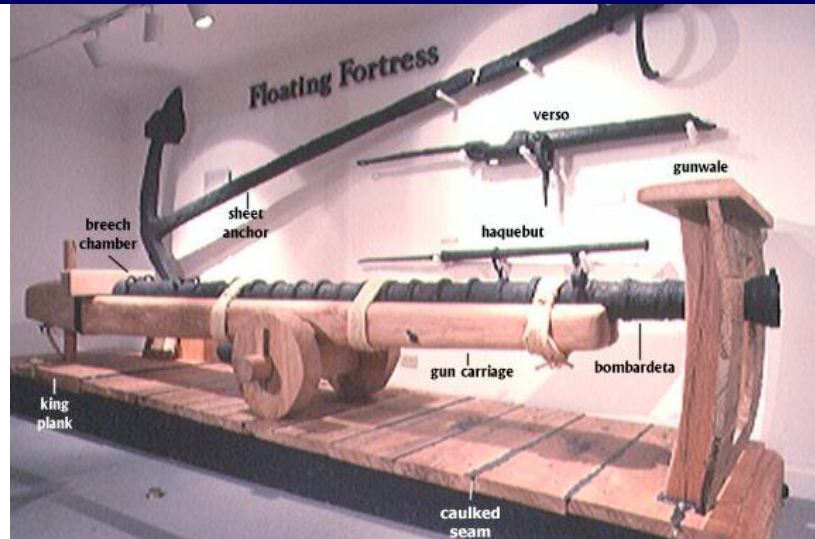


Armament

Haquebuts, Versos, Bombardetas, Cerbatana (a smaller bombardeta).



Shipwrecks of the Explorers



Anchors

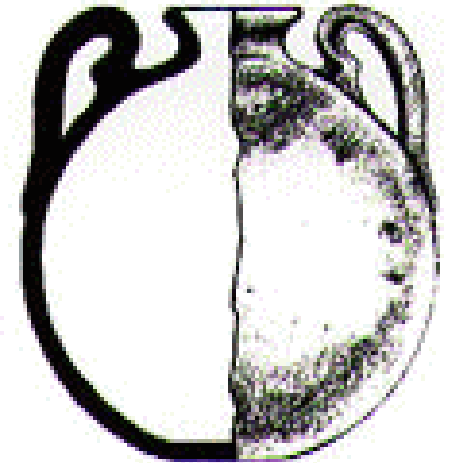
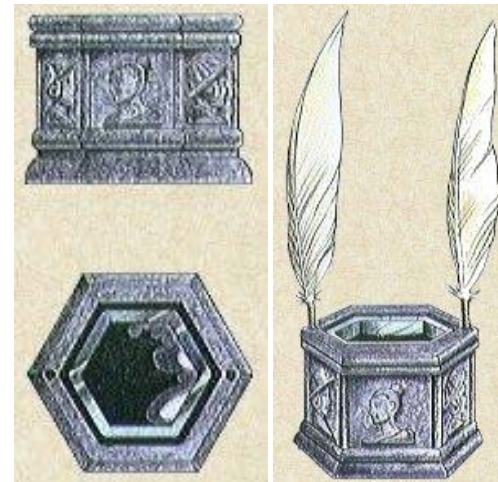
Five anchors were found, of which two are thought to be from other vessels.

One 4 m long sheet anchor, one small boat anchor, one grapnel anchor.

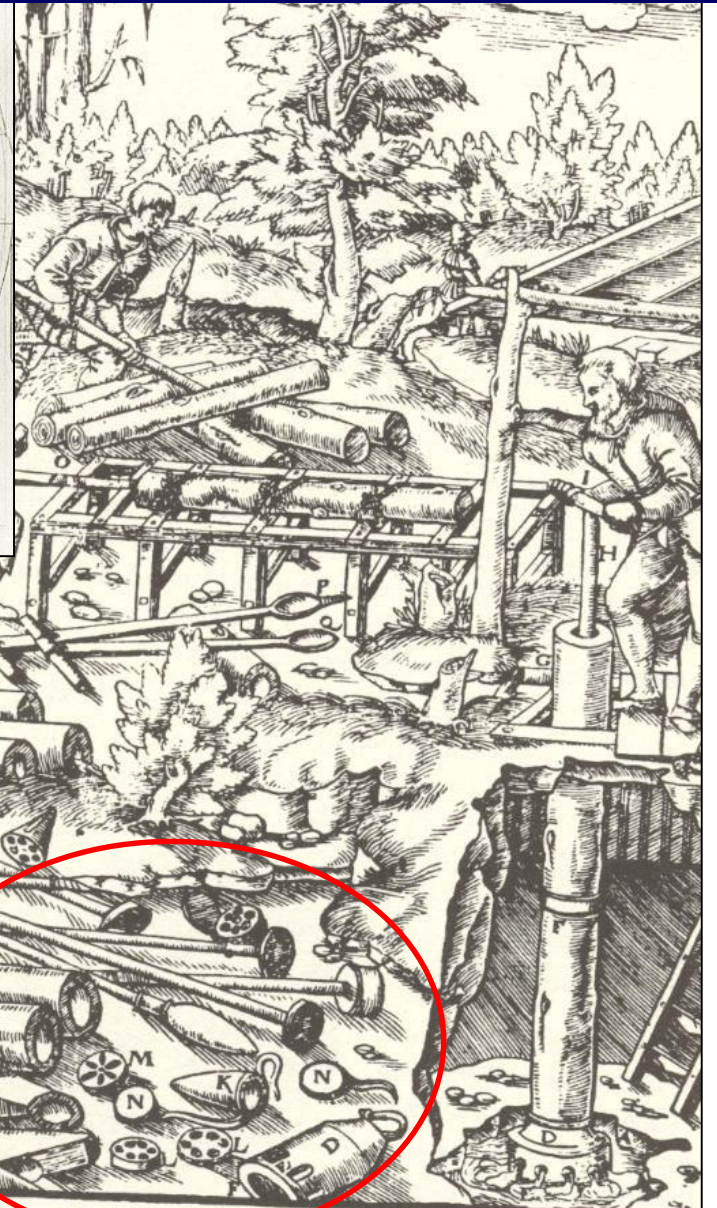
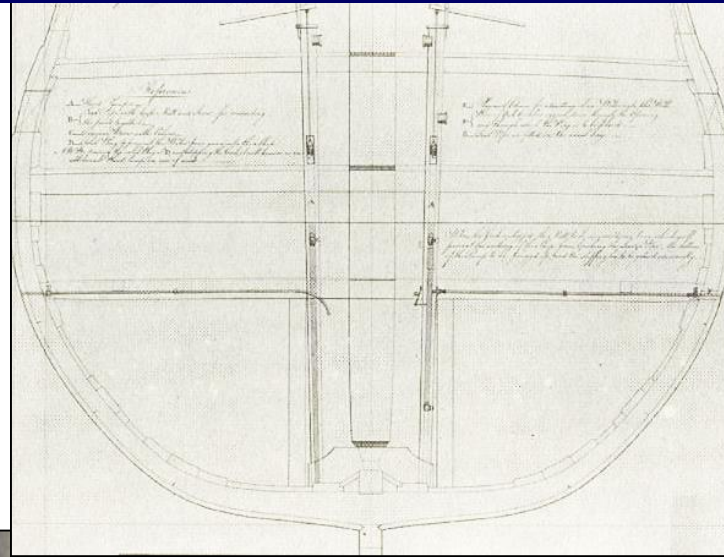
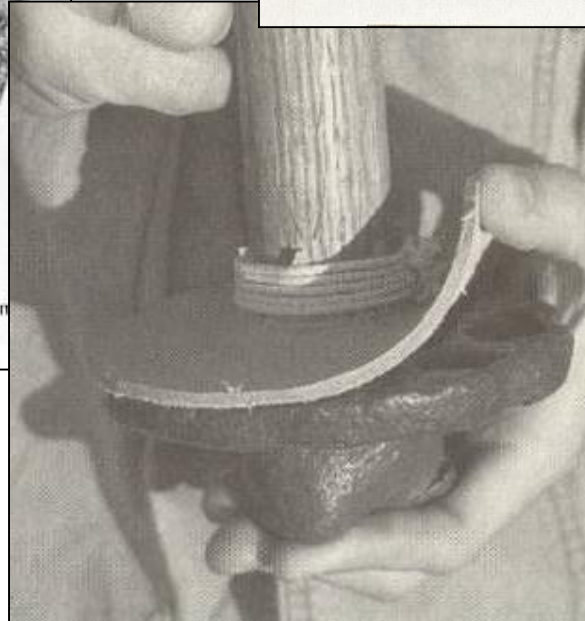
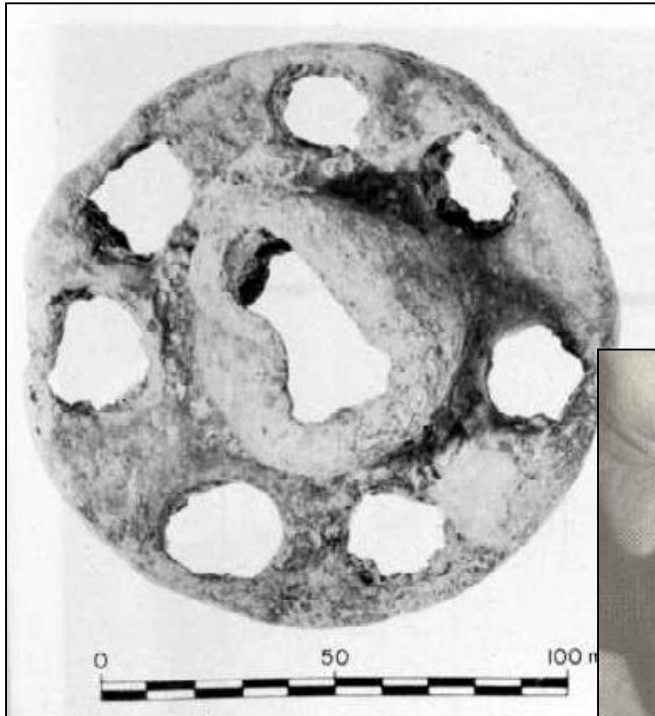


Ceramics

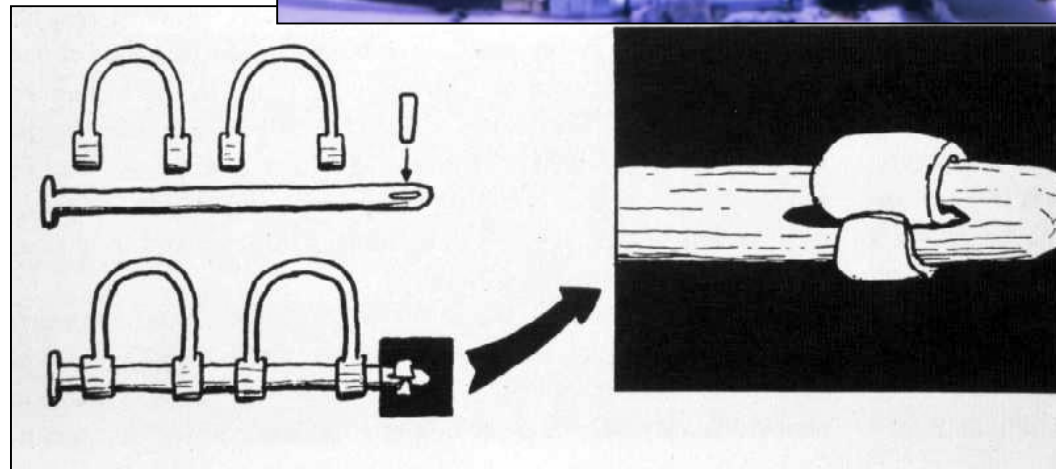
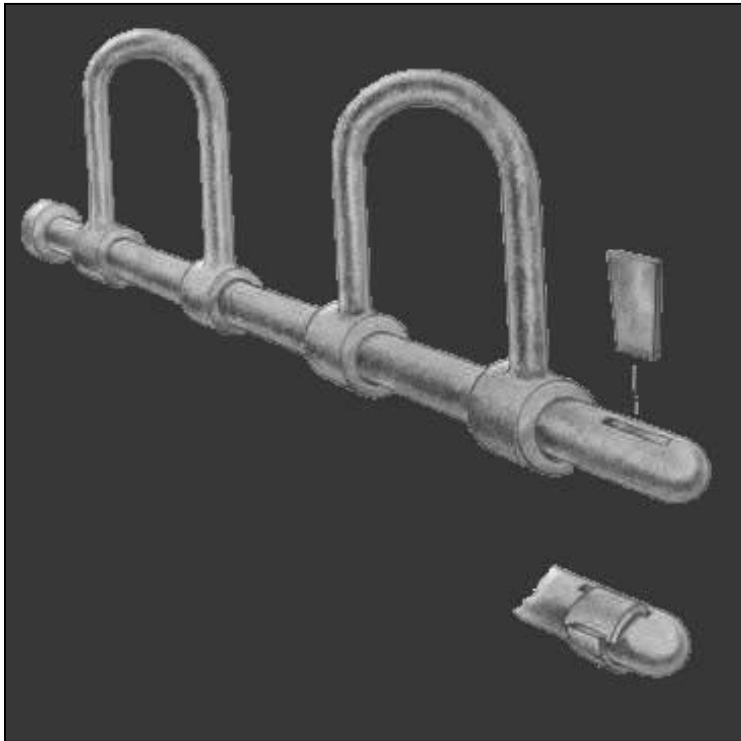
Fragments of olive jars, basins (*lebrillos*), bowls (*escudillas*), jars, and pots (*orzas*).



Pump-valves



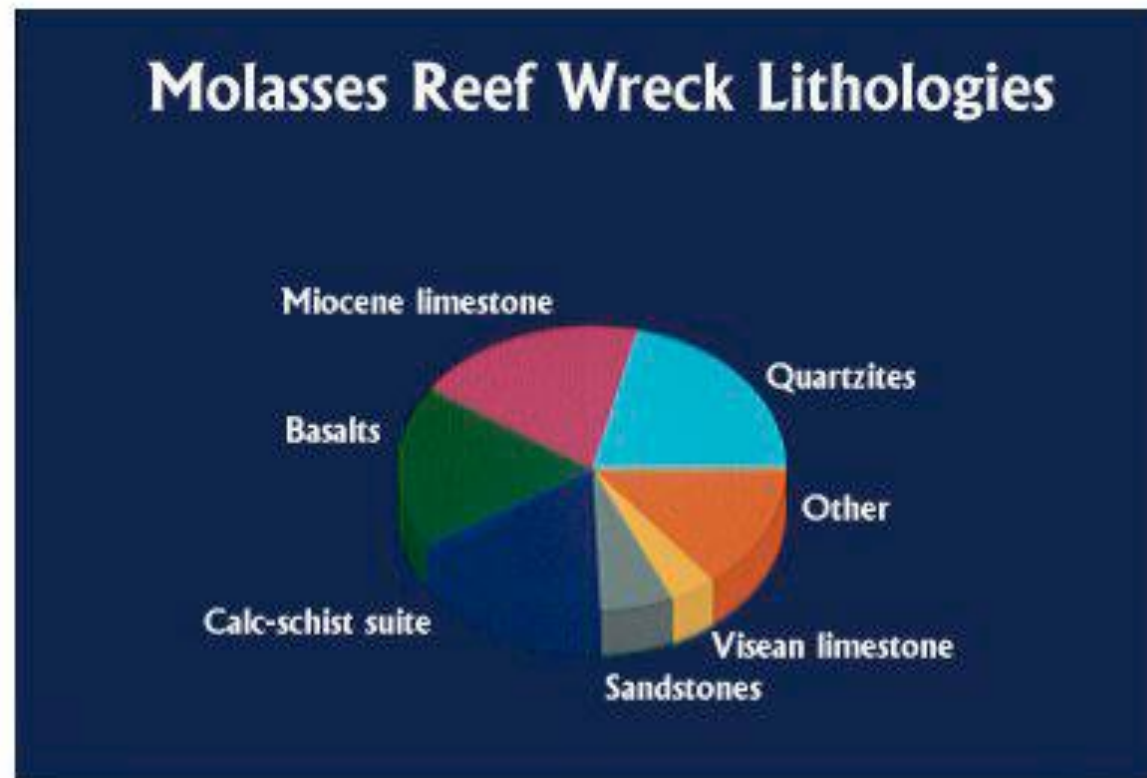
Leg-irons (grillos)



Ballast

A total of 35 tons;

Extending to an area of 11.5 x 3 m, \pm 60 cm high.



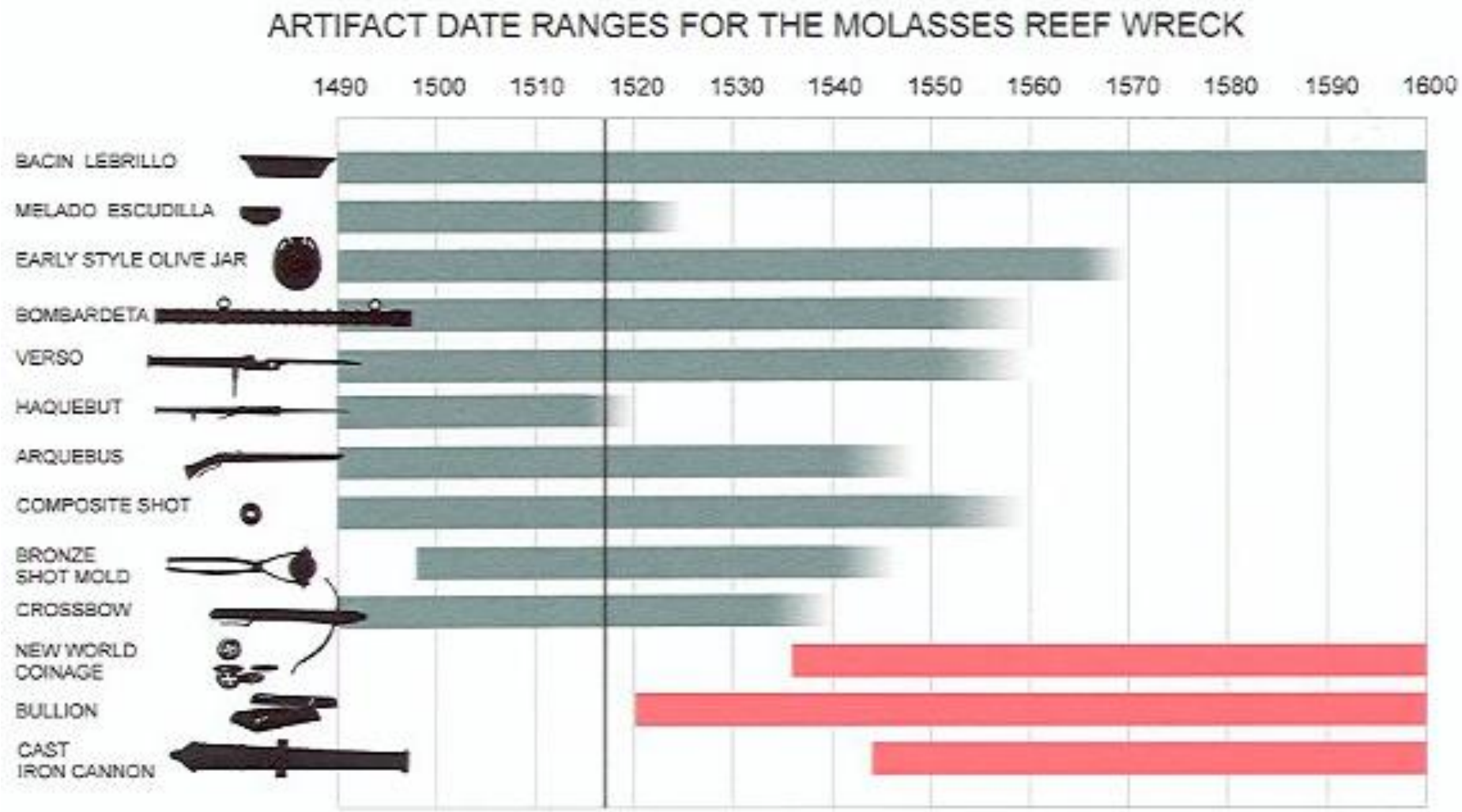
Dating and identification of the wreck

The vessel wrecked at the Molasses Reef was a medium-size ship, perhaps 18 to 21 m of length on deck.

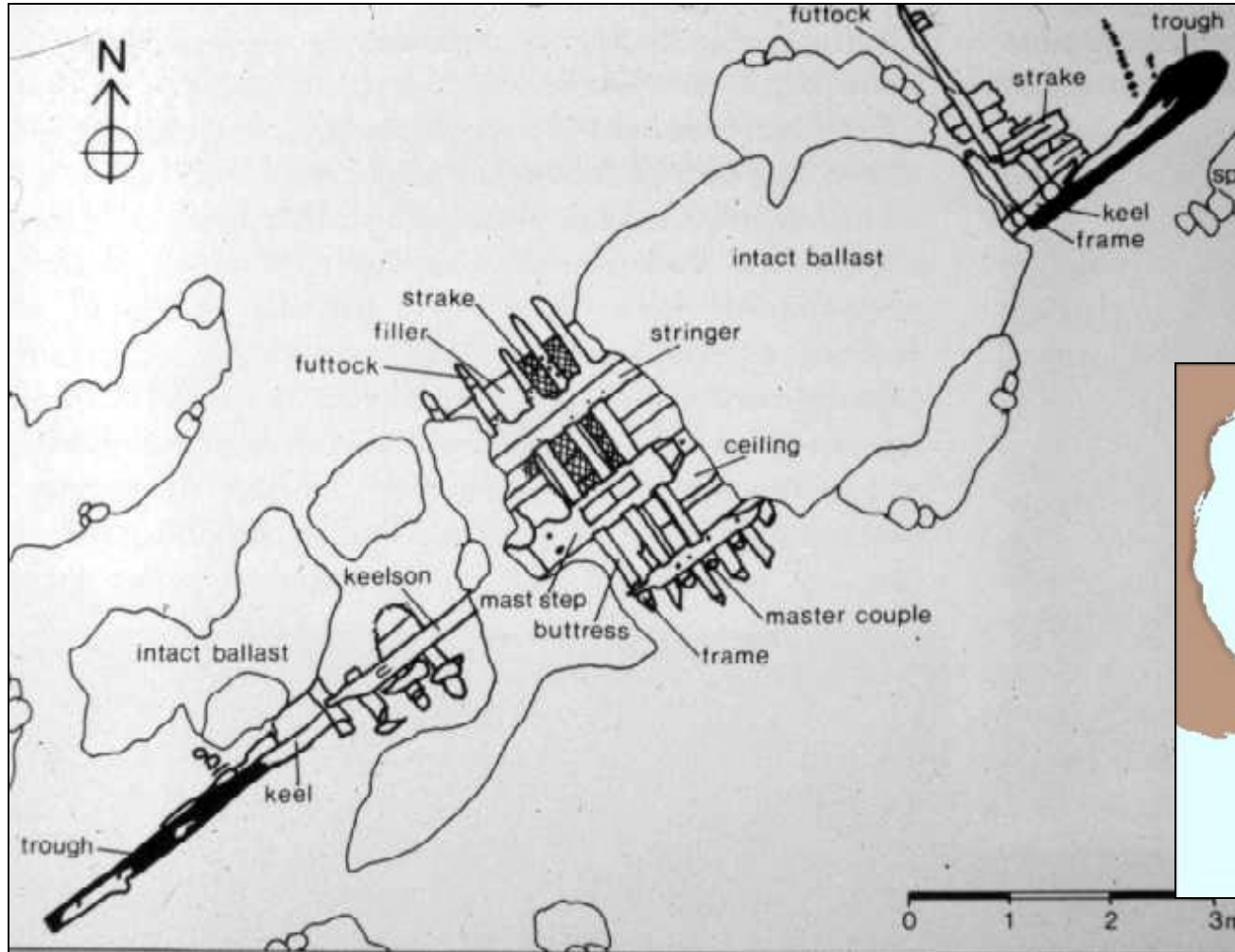
Its location, especially close to the area explored in early period of Spanish expansion, suggests an early voyage.

This is confirmed by the type of artillery found on site, dating to the last quarter of the 15th century. The cast-iron shot puts this wreck anytime after 1495. One olive jar fragment was similar to another found on a context dating to 1508-1514.

So far no documents pertaining to a wreck in this period and in this area have been found.



The Highborn Cay Wreck



History of the site

The identity of this ship is unknown, although it dates from the first half of the 16th century. The wreck was found in 1965 by sport divers in the Exuma Islands of the Bahamas, and was extensively salvaged.



In 1966 it was inspected by Mendel Peterson and Teddy Tucker. The INA/EDRT carried out a survey on this site in 1983 and limited excavations in 1986.



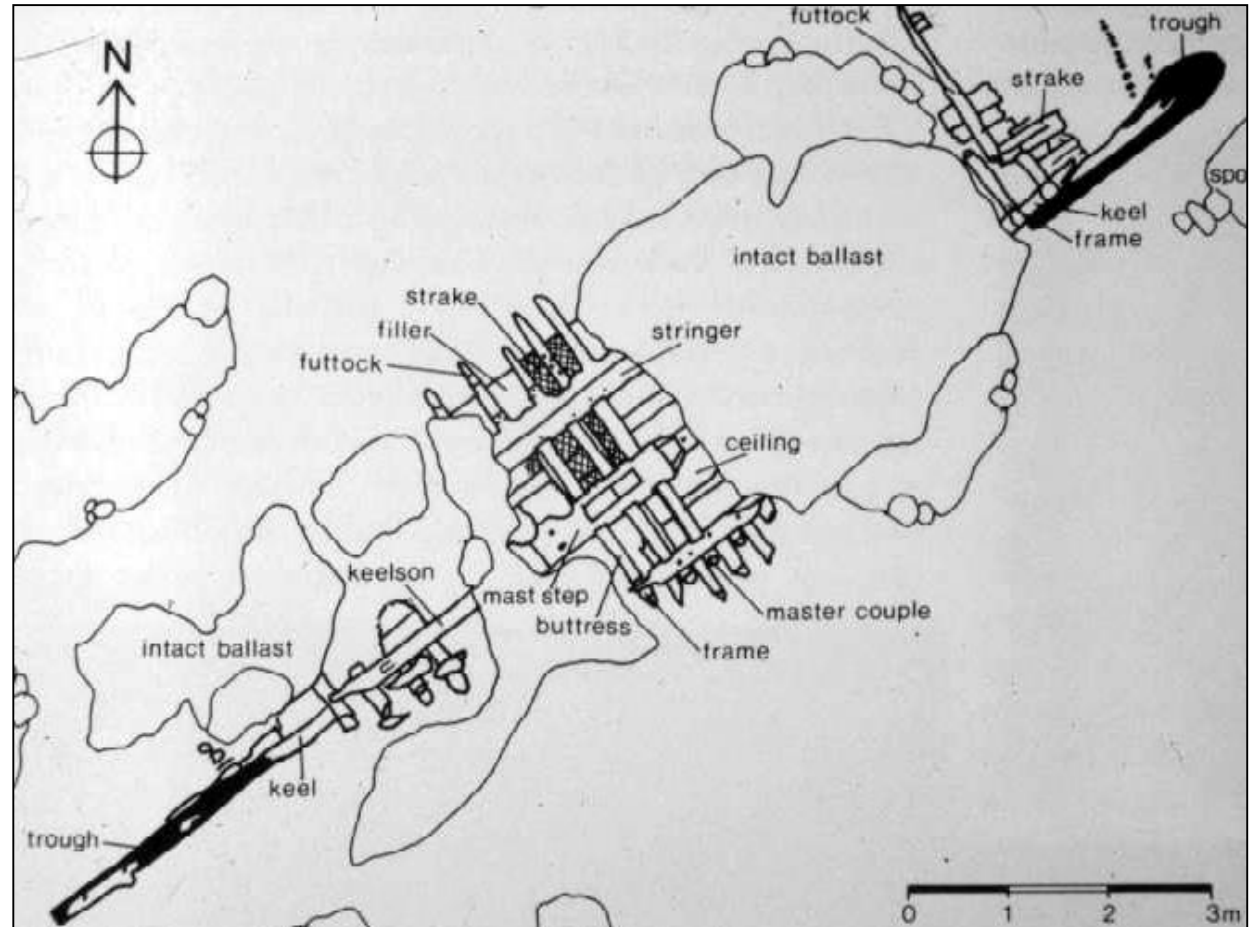
Description of the site

The site consisted of a 20 x 8 m area where a ballast mound covered the remains of a hull.

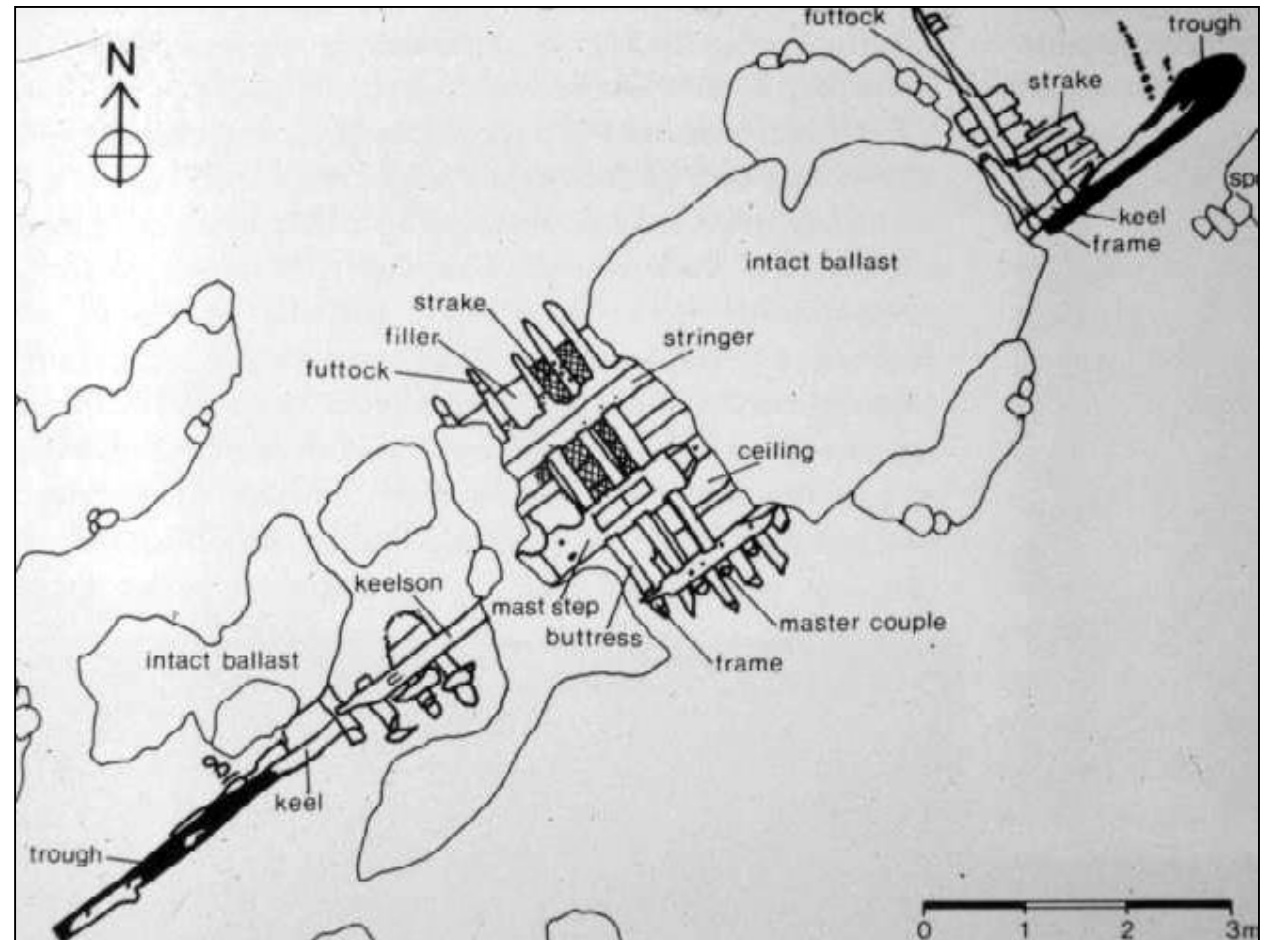


Shipwrecks of the Explorers

The hull remains consisted of keel, keelson, mast step, mast step buttresses, floors, futtocks, planking, ceiling and wales.

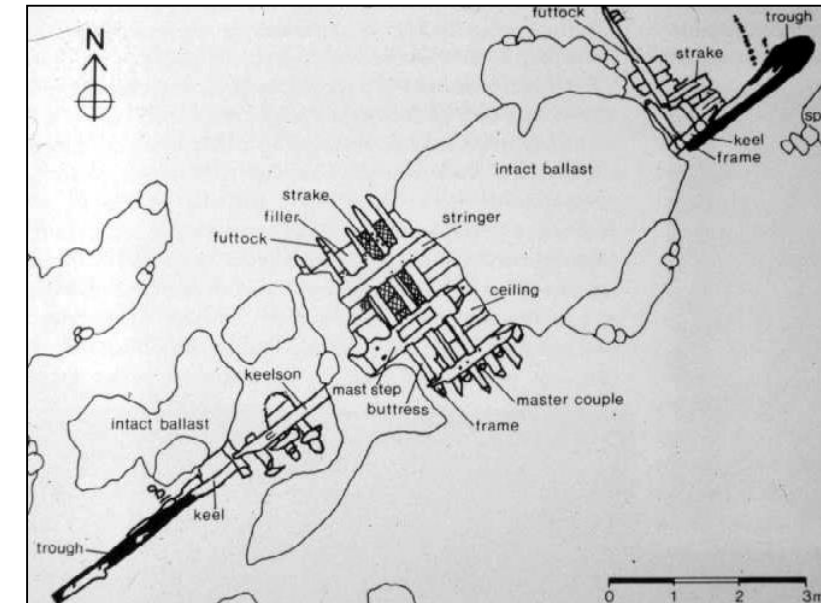


Only the ends of the hull were exposed, together with a trench excavated amidships.



Keel, keelson and maststep

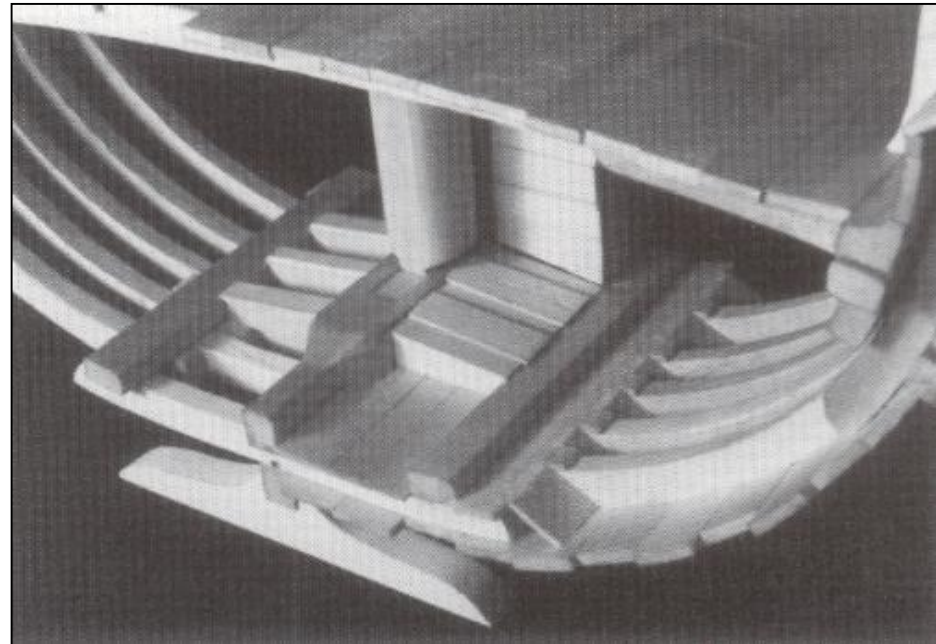
The keel was not preserved for its full length, but was represented by a groove in the bottom. It was estimated to be 12.6 m in length and its section was 15-16.5 cm sided and 21 cm molded. The keel was joined to the stem by a flat vertical scarf with a 30 cm table. The curve of the stem was tangent to the keel.



The keelson was notched over the floors, 16-21 cm sided and 17 cm molded. The mast step consisted of an enlarged portion of the keelson, measuring 2.25 m in length, 40 cm sided and 25 cm molded. It had a mortise 65 x 17 x 15 cm with a 30 cm long and 15 cm wide spacer inserted in the forward end of the mortise.



The mast step was held in place by three pairs of buttresses, which lay over the floors and fitted into notches in the sides of the mast step and the foot wales. The buttresses were 13.5 cm sided and 21.9 cm molded on the mast step side, and 11.8 cm sided and 16 cm molded on the foot wale side. These buttresses were not fastened in place.

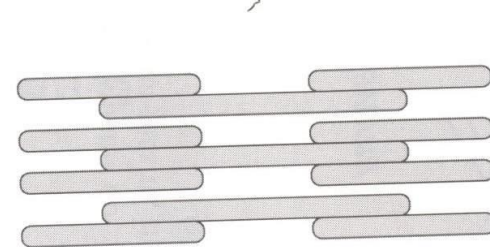
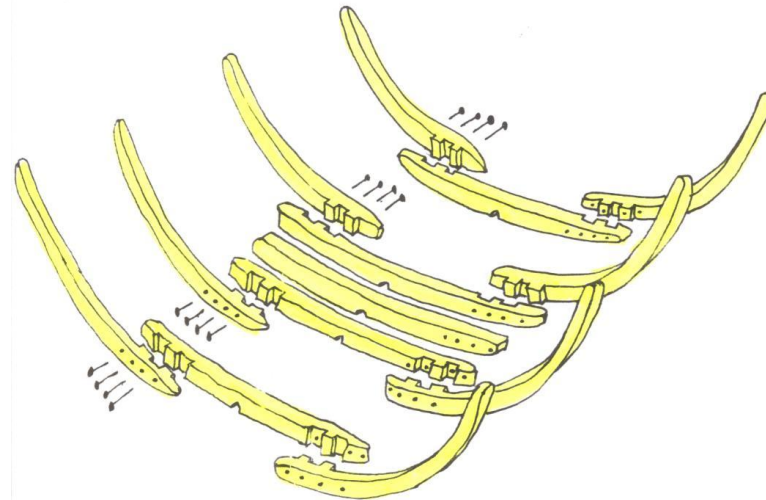


Two semicircular holes and a small mortise on the mast step indicated the location of the pumps and pump wells.



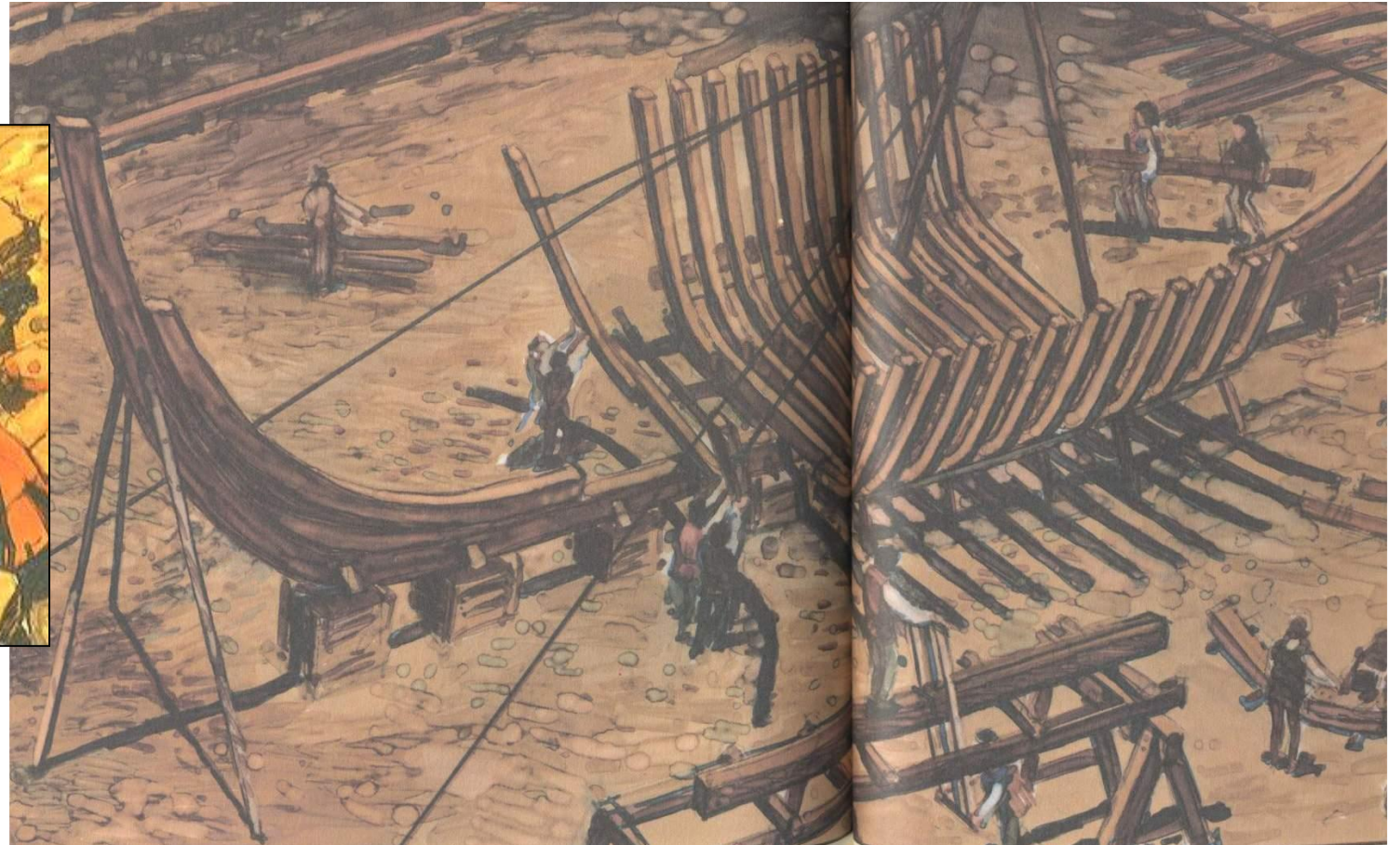
Frames

The single master frame was located under the mast step, just forward of the mortise. It had futtocks on both sides, although only the forward futtocks had dovetail joints. The three center frames were spaced 30 cm center to center, less than the average room-and-space, which was 32 cm.

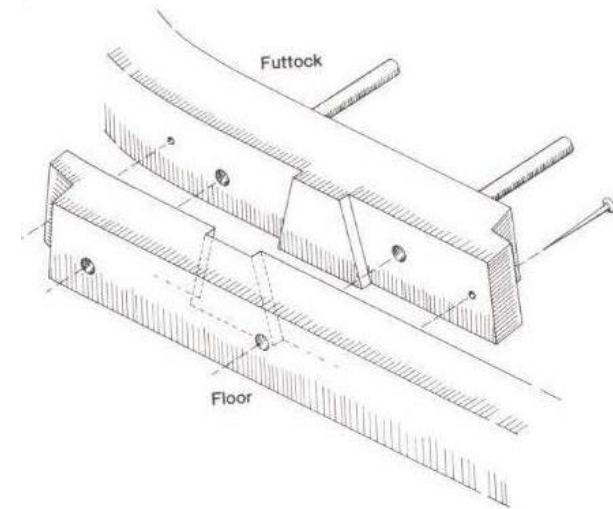


Shipwrecks of the Explorers

The floors were on average 16.5 cm sided and 17.5 cm molded. It is not known how many of the estimated total of 30 or 31 frames were pre-assembled.

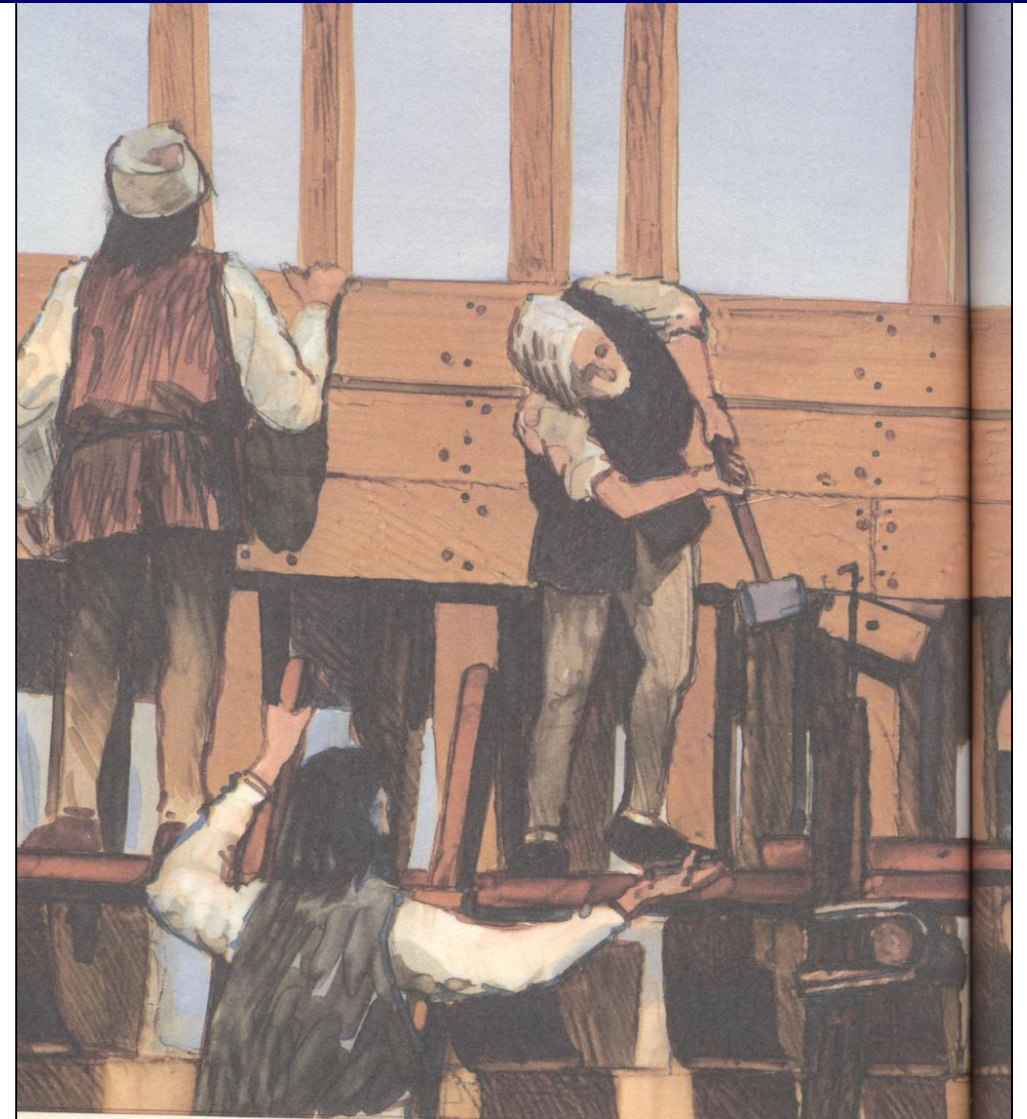


The futtocks were joined to the frames with dovetail joints. No fasteners were noted, although recesses at the ends of the floors and futtocks may have been cut to ease the nailing. The mortise was on the floor with the wider side of the trapezoid down. Forward of the master frame the futtocks were joined to the forward face of the floors and aft of this frame they were joined to the aft face of the floors.



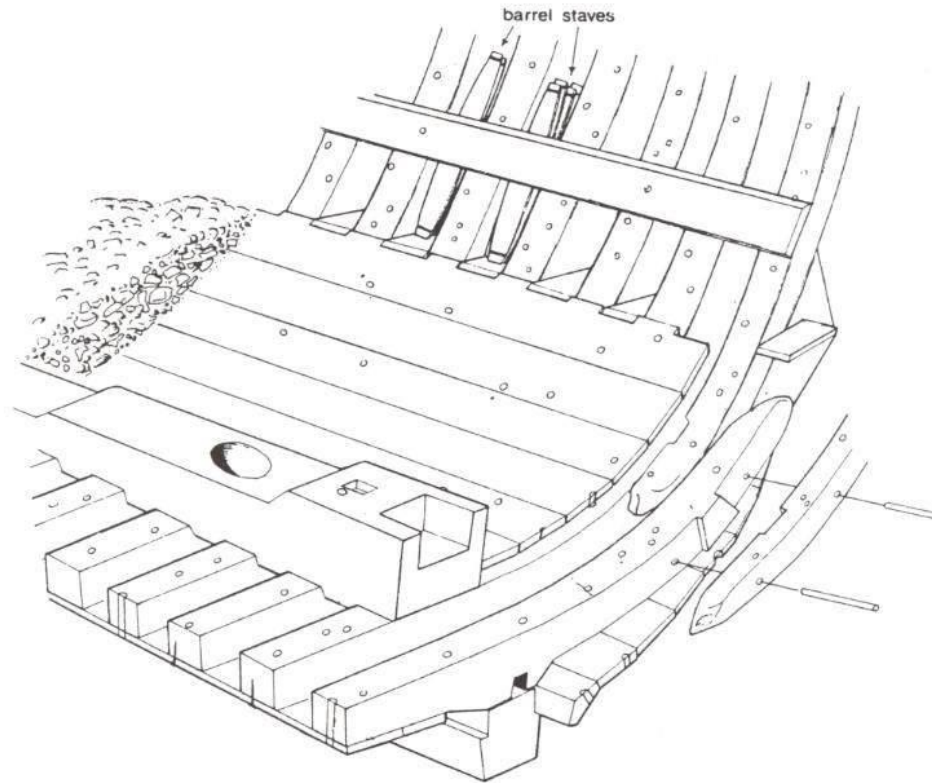
Planking

The planking was 6 cm thick. The strakes' sided dimension was 8-25 cm.



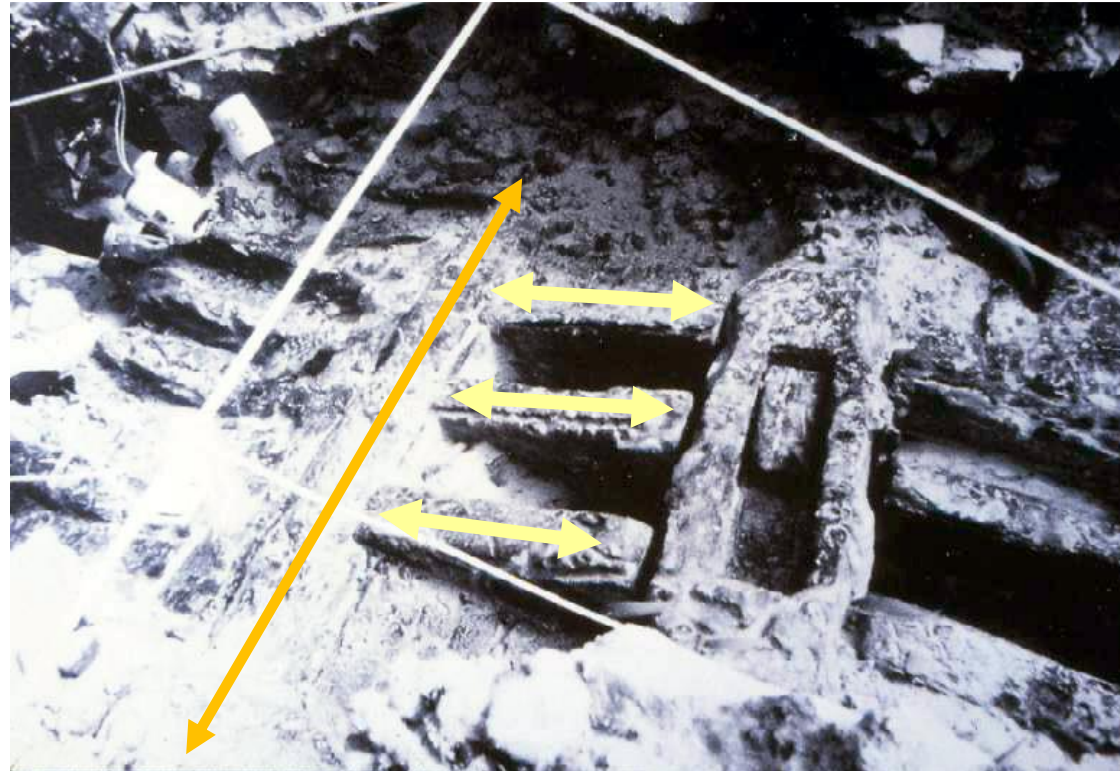
Ceiling, stringers and wales

The ceiling was 3 cm thick. The strakes' widths ranged between 12-31 cm.



Shipwrecks of the Explorers

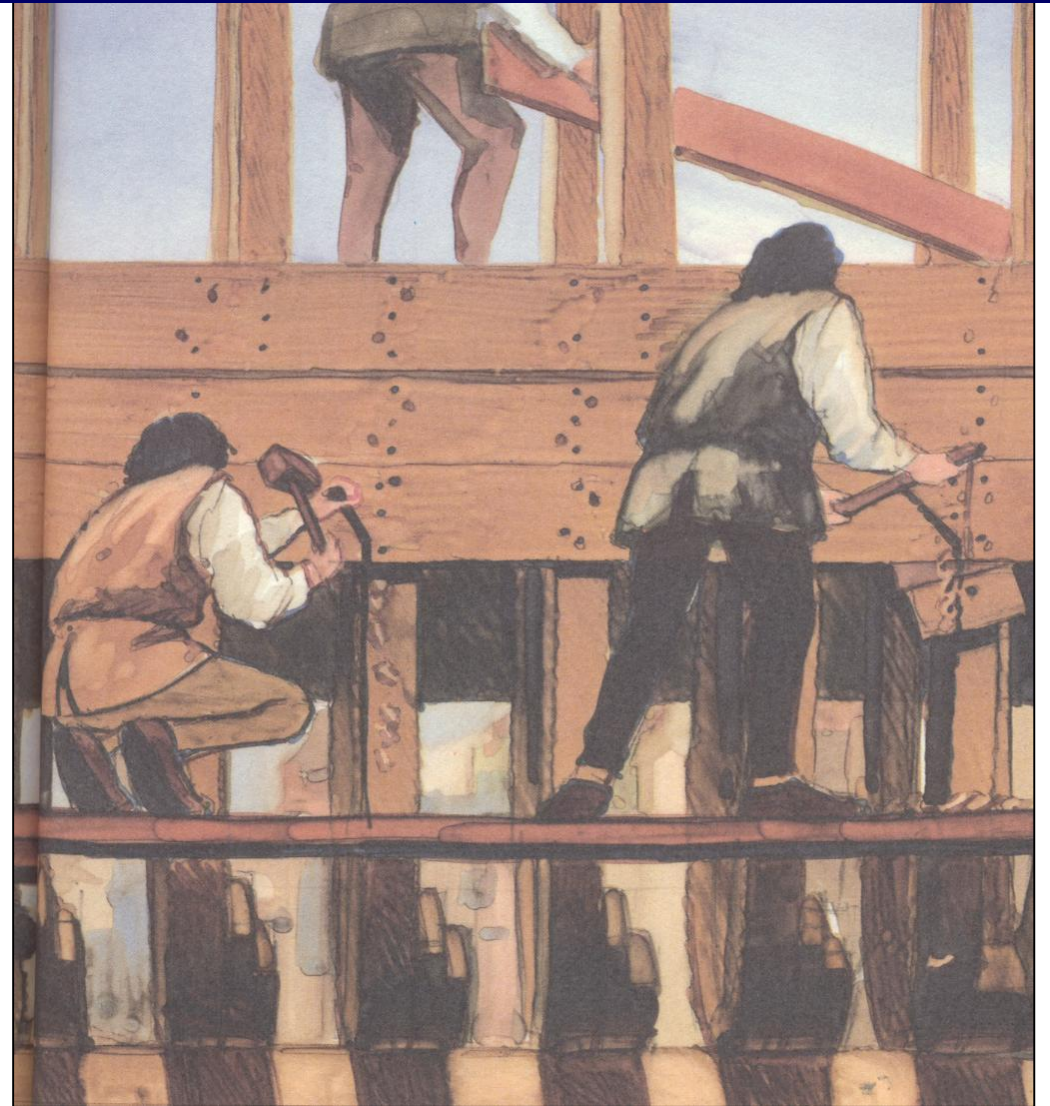
A footwale ran along the turn of the bilge, over the floor/futtock connections. There were three strakes of ceiling between the keelson and the wale. The first ceiling strake after the wale was notched to receive the fillers. Small planks were placed between the buttresses, resting on rabbets in their upper edges



Fasteners

Of the four bolts fastening the keel to the keelson that were found, one passed through the space between two floors.

Forelock bolts with washers and key-wedges, square section iron nails.

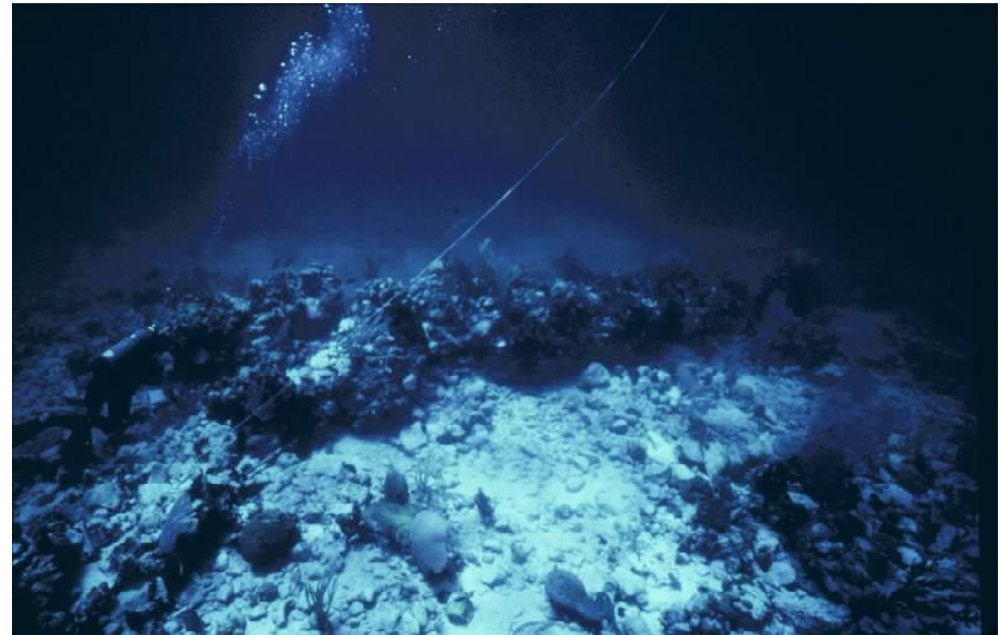


Caulking

There is no information on the caulking.

Ballast

The ballast mound covered an area of 16 x 4 m. There is no estimated total weight. There were stones larger than 50 cm in diameter. Samples were taken for analysis



Rigging

Deadeye straps, chain links, ring bolts, etc.

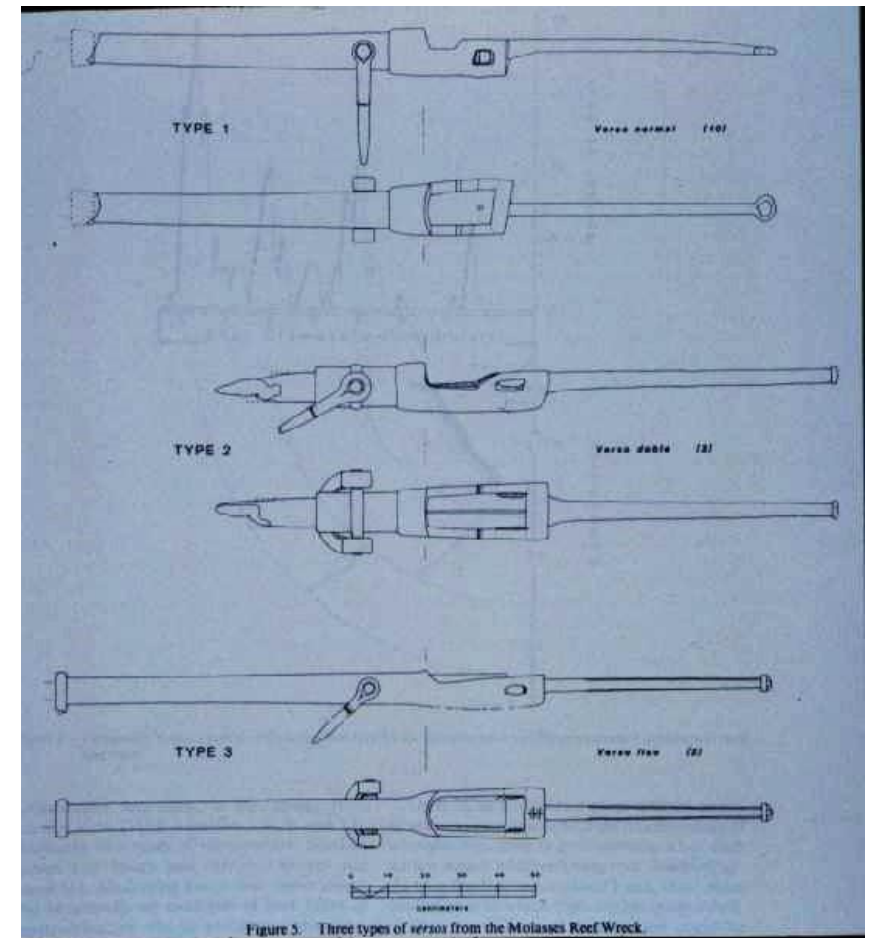
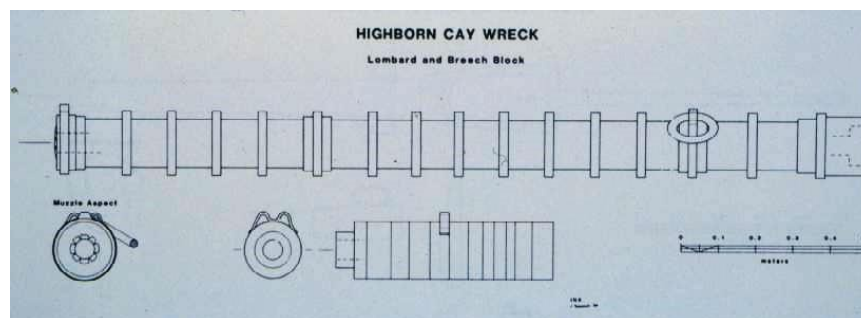
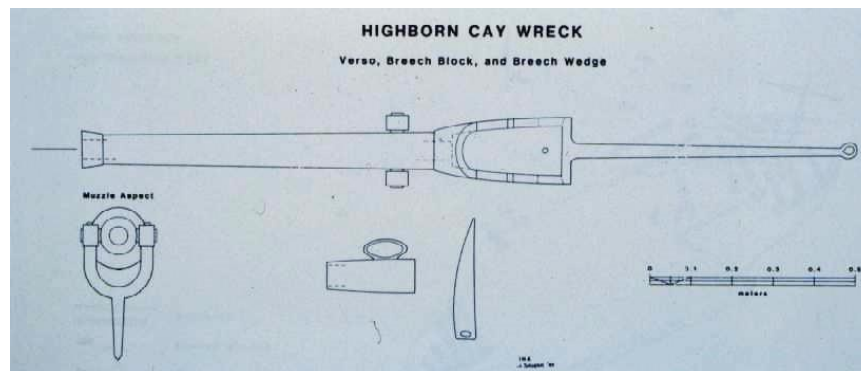
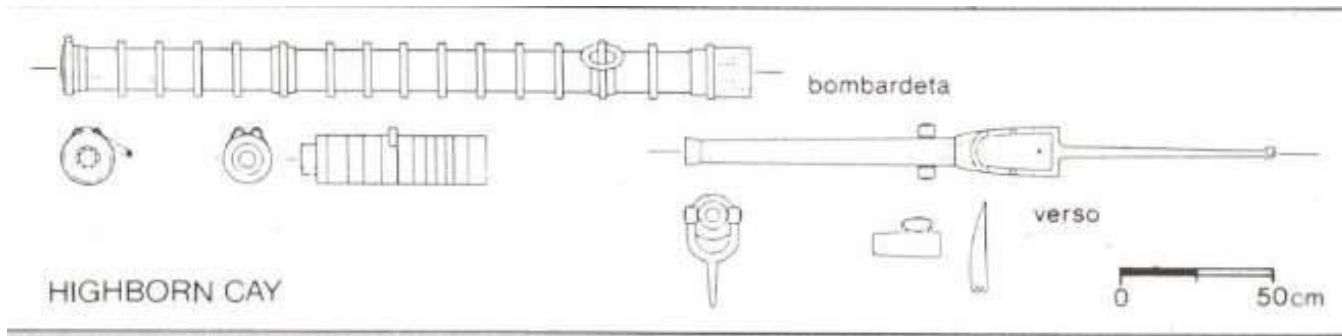


Armament

Two bombardetas, at least 13 swivel guns (versos and versos dobles).



Shipwrecks of the Explorers



Anchors

One large anchor over the ballast pile (as if it was stored in the hold, just like to Molasses Reef wreck one).

Two other anchors were found 100-150 m away from the ballast pile.



Artifacts

No coins, navigational instruments, or any other precisely datable artifacts.

A knife with a golden inlaid wooden handle.

Fragments of a bowl (*escudilla*) and a pitcher (*cantaro*).

Dating and identification of the wreck

The vessel wrecked off the Highborn Cay was also a medium-size ship, perhaps 18 to 21 m of length on deck.

The lead-covered iron shot place the wreck between 1500 and 1570. The exclusively rough iron artillery points to the early 16th century.

It is difficult to identify a wreck when no diagnostic artifacts were found in place.

So far no documentary evidence places the possibility that this may be one of the two caravels lost in 1500 by Vicente Yañes Pinzón.

The Bahía Mujeres Wreck



History of the site

The Bahia Mujeres wreck was found in 1958 by sport divers in the bay with the same name on the Yucatan coast.



In 1959 or 1960 this site was salvaged by Edwin Link.

In 1960 and 1961 the Mexican underwater exploration club CEDAM also visited the Bahia Mujeres wreck site.

In 1983 and 1984 the site was surveyed and the artifacts (that could be located) recorded by a team from Texas A&M University and the Institute of Nautical Archaeology.

Description of the site

The ballast mound of the Bahia Mujeres wreck extended over an area 20 m long, and 4 to 8 m wide.

Since the site has never been excavated, we don't know if there are any hull remains or other artifacts within the ballast pile.

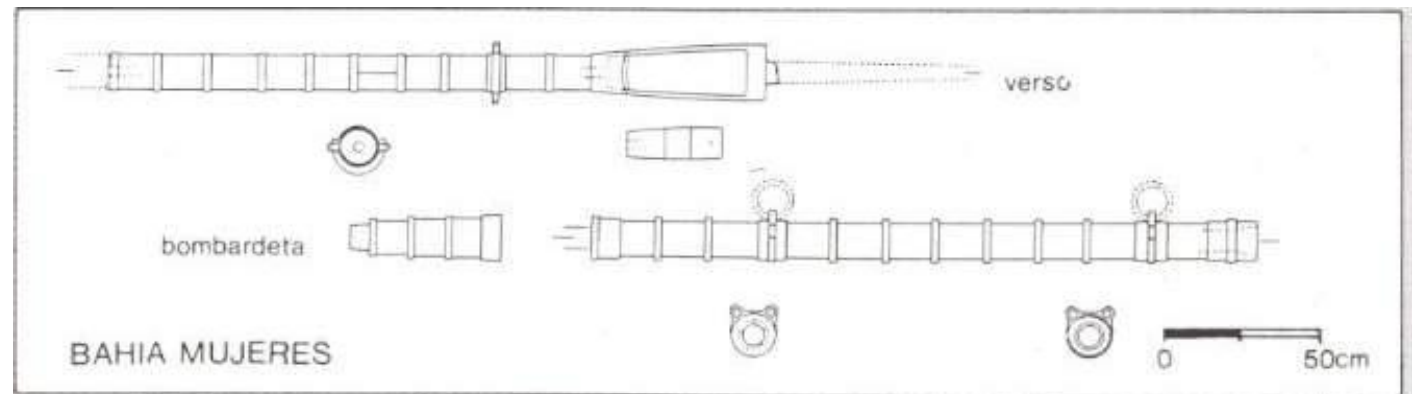


Armament

The divers who found this wreck in 1958 salvaged 1 verso and probably another two guns.

Edwin Link salvaged at least 1 gun in 1959 or 1960.

The CEDAM group salvaged 1 falconete, 1 bombardeta, 1 verso, and 3 breech blocks.



Dating and identification of the wreck

The Bahia Mujeres vessel was probably about the same size of the Molasses Reef or the Highborn Cay ones.

The artillery found on this site places the wreck in the first half of the 16th century.

No diagnostic artifacts are known to have been found on this site. It is therefore impossible to date this shipwreck with more precision.



Playa Damas Shipwreck

An early 16th-Century Spanish shipwreck
near Nombre de Dios, Panamá



Potosí, 1545

Tierra Firme & Nueva España fleets, 1565



Potosí, 1545

Tierra Firme & Nueva España fleets, 1565



Shipwrecks of the Explorers

First Nombre de Dios...



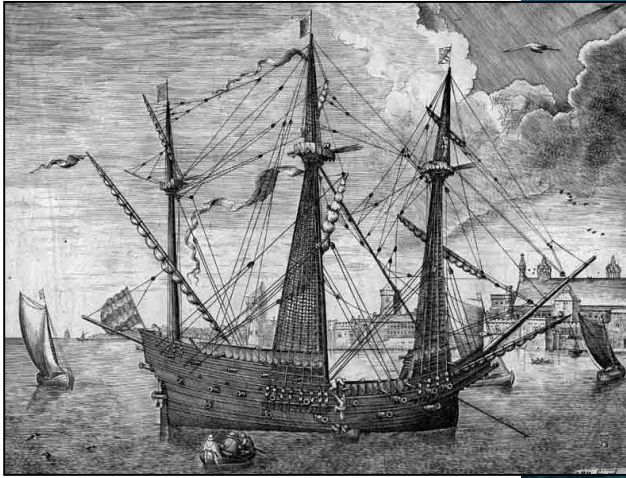
Shipwrecks of the Explorers



Portobelo



Shipwrecks of the Explorers



Shipwrecks of the Explorers

A substantial portion of the hull was preserved underneath the ballast pile. .



Shipwrecks of the Explorers

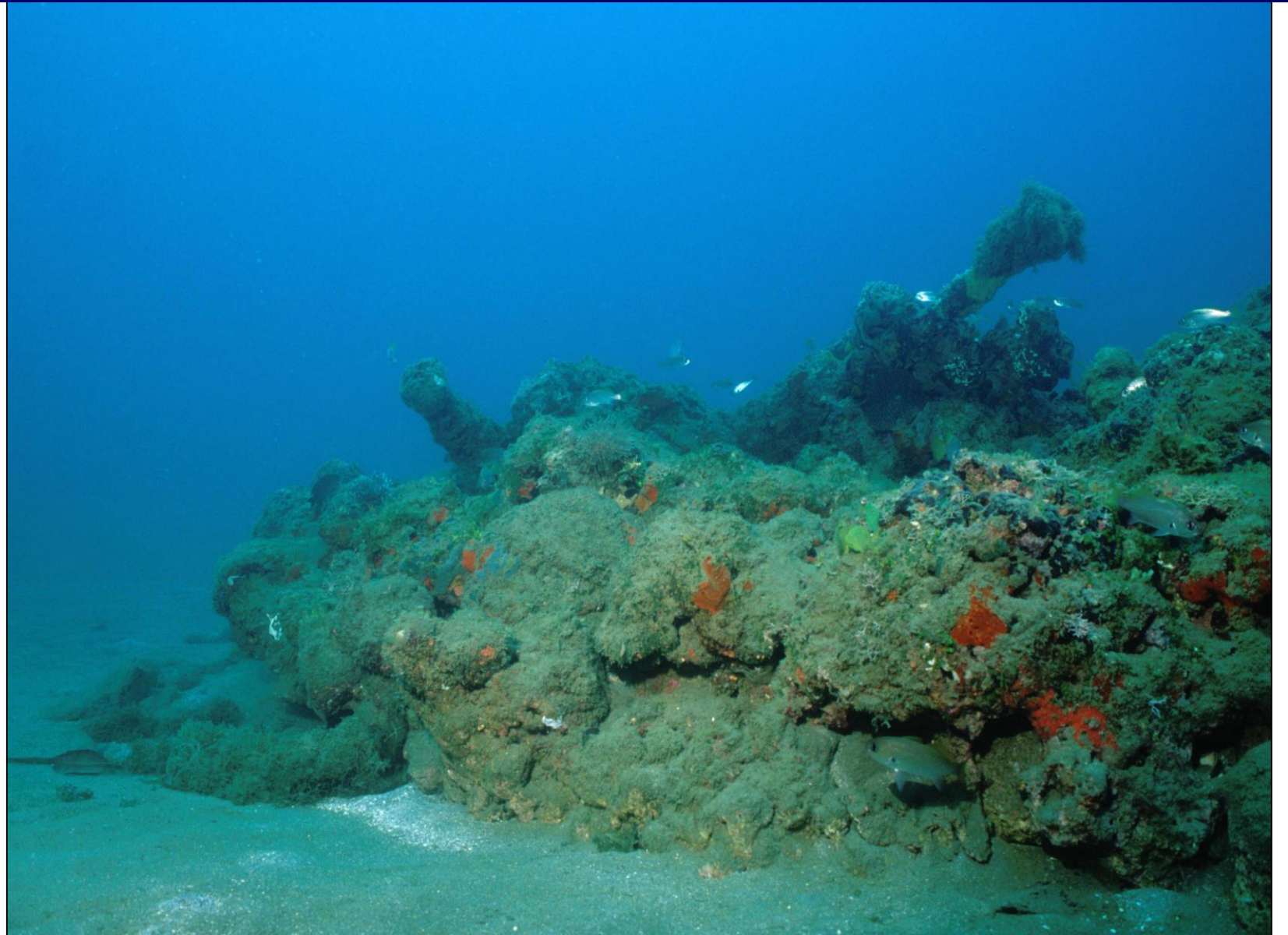
The collection of guns was unique.



The pot shards formed a tremendously important collection, for the study of typology variation and chronology.



And even the
ballast could
yield vital clues
to the ship's last
voyages.



C14 dated the shipwreck to around 1530. A study on tree DNA was planned for this ship – an absolutely new approach – and pollen analysis is planned as well.



Shipwrecks of the Explorers



Logistics were easy to handle...

Shipwrecks of the Explorers

The shipwreck was 4.5 m deep,

Shipwrecks of the Explorers



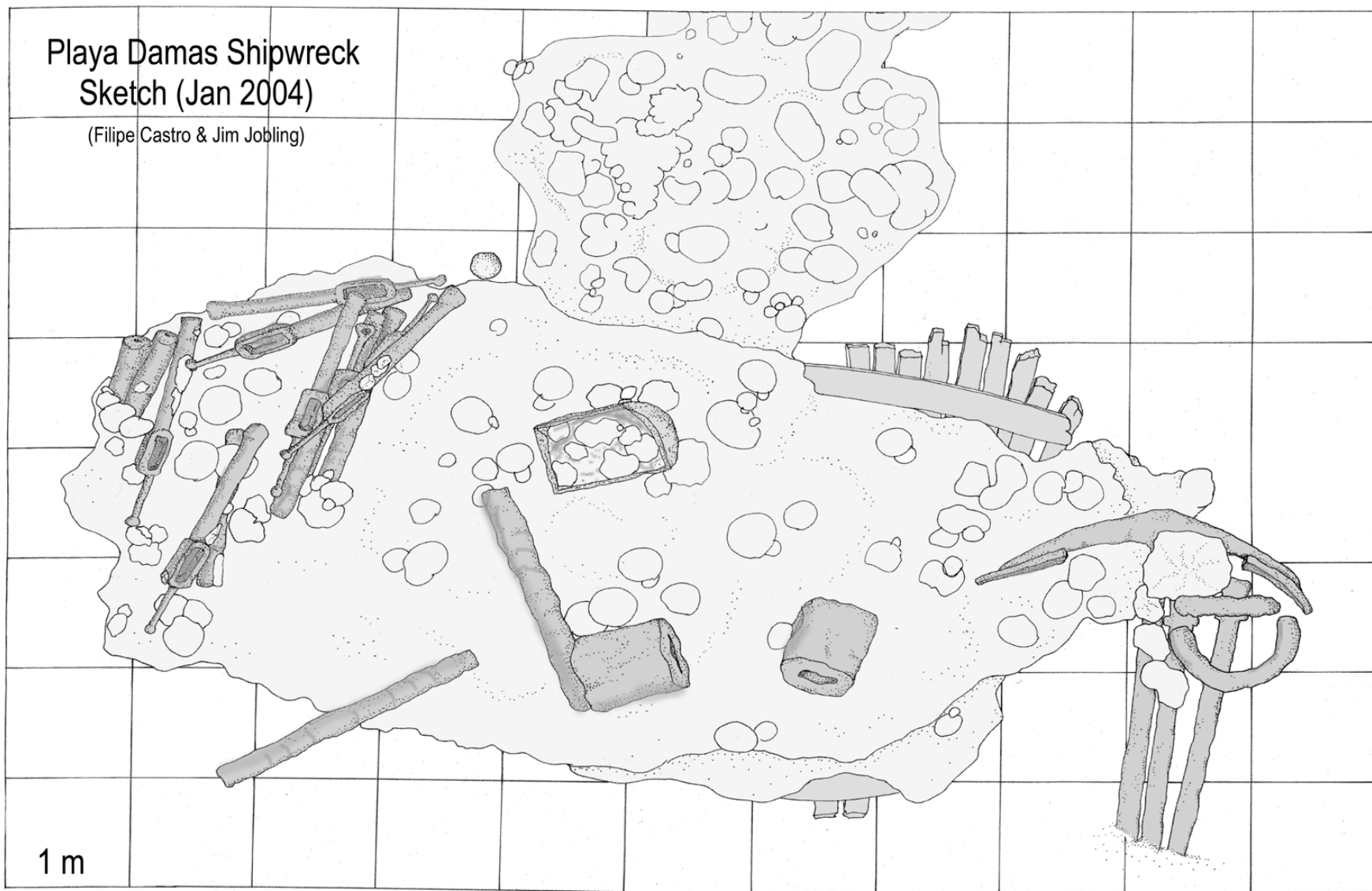
Nombre de Dios is a few minutes away by boat,

Shipwrecks of the Explorers



A short (although long) ride from Portobelo,

Shipwrecks of the Explorers



Questions?