



Wreck 15563: An Early Nineteenth-Century Merchant Vessel in the Gulf of Mexico

James P. Delgado¹ · Michael L. Brennan¹

Accepted: 4 August 2023 / Published online: 1 September 2023
© The Author(s) 2024, corrected publication 2024

Abstract

A wooden shipwreck of the first half of the nineteenth century in the Gulf of Mexico was documented and studied in 2022. The site is largely devoid of artifacts, which may suggest the vessel was partially salvaged prior to sinking. Its most dominant feature is an iron ship's stove or camboose that is uniquely configured when compared to other known archaeological examples. The camboose may be evidence of a whaling context for the wreck, which for now leads to a working but not proven hypothesis that this may be the wreck of the whaling brig *Industry*, lost close to this location in 1836 after nearly capsizing in a storm and subsequently being stripped of much of its gear for abandonment in a sinking condition.

Keywords Deepwater · Ship's stoves · Cambooses · Whaling · African American seafarers

Introduction

The shipwreck site of Wreck 15563, discovered in 2011 and archaeologically assessed in 2022, consists of the remains of a sailing vessel from the first half of the nineteenth century sunk in the Gulf of Mexico. Archaeologists were able to participate through telepresence and document the historic wreck during EX2201, a mapping and ROV shakedown cruise by the National Oceanic and Atmospheric Administration (NOAA) ship *Okeanos Explorer* in February 2022. This came after a request by Bureau of Ocean Energy Management (BOEM) archaeologists to assess it as a possible whaling wreck due to what appeared to be a tryworks, a particular type of apparatus used to render whale fat into oil. That dive mapped the wreck and provided on-shore scientists and archaeologists the opportunity to examine and characterize the wreck. The collection of data enabled the creation of a photogrammetric model as well as video and still photography. There was no disturbance of the site, and no artifacts were collected.

The shipwreck lies at a depth of 1691 m (5548 ft) some 111 km (60 nautical miles) due east of the mouth of the Mississippi River and some 198 km (107 nautical miles) off the southern coast of Alabama. The visible remains of this ship consist of visible portions of the outline of the vessel's lower hull, rigging elements, bottles, cobblestone ballast, anchors, brick,

✉ James P. Delgado
james.delgado@searchinc.com

¹ SEARCH, Inc., Jacksonville, FL, USA

and an iron “camboose” or stove with a unique configuration that resembles a whaling ship’s tryworks for rendering whale blubber into oil.

The difference in this early, possibly pre-1830 camboose from the other archaeological examples is that its “cooking” area is defined by two large open cauldrons, and in the one not filled with silt, an approximately 15 in. diameter iron pot or cauldron is fitted; the second, while filled with silt, appears to be approximately 12 in. in diameter. Their likely capacity was approximately ten to 15 gallons. While the archaeological evidence of shipboard cambooses is scarce, this camboose is markedly different from the other examples of smaller “cook box” style stoves like that on the Mardi Gras Wreck, or the more elaborate cambooses on the Monterey A and Monterey B wrecks and Shipwreck 15377 (Horrell 2017; Irion et al. 2014). These comparative examples will be discussed later in this article. While made entirely of iron, the camboose on Wreck 15563 is configured exactly as a whaling tryworks. The red brick that the camboose lies atop of was likely associated with it as an insulating surface to deflect heat from the camboose.

Whaling tryworks were utilized to render whale blubber and flesh into oil. Tryworks date to the eighteenth century as temporary structures erected ashore that processed the catches made by small boats engaged in “inshore” or “boat whaling” that progressed to small sloops (Davis et al. 1997, pp. 34–35). As whaling moved offshore for extended voyages on smaller vessels of the late eighteenth and early nineteenth century, primarily whaling schooners and brigs, the next innovation in whaling was cutting up the whale at sea alongside the whaler. The blubber stripped from whales was packed in barrels and brought ashore to be processed (Davis et al. 1997, p. 36). Finally, smaller tryworks were eventually built onto ships for trying out the whale blubber at sea.

The typical tryworks of the nineteenth century, as epitomized by the restored 1841 whaler *Charles W. Morgan*, a National Historic Landmark vessel at Mystic Seaport Museum in Mystic, Connecticut, was two “large cast iron kettles, called try pots, each of about 200 gallons capacity. These ‘pots’ were enclosed in a brick oven-like affair constructed in such a manner as to permit fires to be built under them to boil (try-out) the oil from the blubber” (Hegarty 1964, p. 161). Trypots were rounded with flat sides to fit into the brick tryworks; “old style” trypots of the early to mid-nineteenth century ranged from 51 to 45 in. in length and 44 to 40 in. in width with capacities of 200 to 140 gallons (Hegarty 1964, p. 162) (Fig. 1).

Charles W. Morgan’s tryworks were built in a “water tight box-like tank...in the tank was laid a floor of brick...the bricks were laid in sand so water could circulate around and between them. On this ‘floor’ was erected the brick supports for the pots and the walls that enclosed them, all the brick above this floor was laid in mortar...The top over the brick corbelling was covered with cement mortar” (Hegarty 1964, p. 61). This style of tryworks is represented archaeologically in isolated try pots (which conform to the dimensions and shapes documented by Hegarty (1964) and bricks at the wrecks of the whalers *Pearl* (1822), *Hermes* (1822), and *Two Brothers* (1823), which comprise a National Register-listed site at Papahānaumokuākea Marine National Monument in the Northwestern Hawaiian Islands (Raupp and Gleason 2010).

Site Investigations

The 15563 shipwreck was first encountered by Fugro in 2011 during a side-scan sonar survey of an oil lease and reported to BOEM as a potential historic site. A sea trial test by C-Innovation of a HUGIN AUV with a mounted camera and Synthetic Aperture Sonar (HiSAS) passed over the wreck in 2017 (Fig. 2) and identified distinct



Fig. 1 Traditional tryworks on the whaler *Charles W. Morgan* (James P. Delgado)

archaeological characteristics that were hypothesized to be consistent with a whaling vessel such as an early nineteenth-century anchor and what looked to be, at that time, a two kettle whaling tryworks (Fig. 3). While later (in 2022) the object thought to be a tryworks was found to be too small to be what has traditionally been identified as whaling “tryworks” for rendering whale fat into oil, it was configured like one and therefore that potential not only led to a recommendation for a return to examine the site, but also led to the hypothetical question of whether this camboose was configured as it is to also render oil in an open cauldron as a “try camboose.” The scale of the ostensible tryworks was not apparent in 2011, as the AUV pass did not completely document the site, and BOEM had no opportunity to participate in the dive.

Assessing the few images, therefore, BOEM archaeologists in 2011 thought that the wreck might be that of a whaling vessel. The authors suggested the site of Wreck 15563 to NOAA’s Office of Ocean Exploration and Research (OER) as a target for testing the ROVs on a shakedown cruise of the NOAA research vessel *Okeanos Explorer* in late 2021. The dive on the wreck with ROVs *Deep Discoverer* and *Seirios* on 25 February 2022 documented a number of salient features and revealed buried aspects of the site. Photogrammetry mapping passes with the ROV were conducted in a grid-like pattern starting at what is now suspected to be the stern of the vessel. The passes proceeded from the presumed stern to bow and back again while the ROV shifted over slightly on each pass to image the entirety of the wreckage. Several orbits around the features with more verticality were undertaken to reduce holes in the 3D modeling and orthomosaicing efforts. The produced model and maps were then scaled using the ROV’s 10 cm

Fig. 2 Initial sonar image of Wreck 15563 (Bureau of Ocean Energy Management)

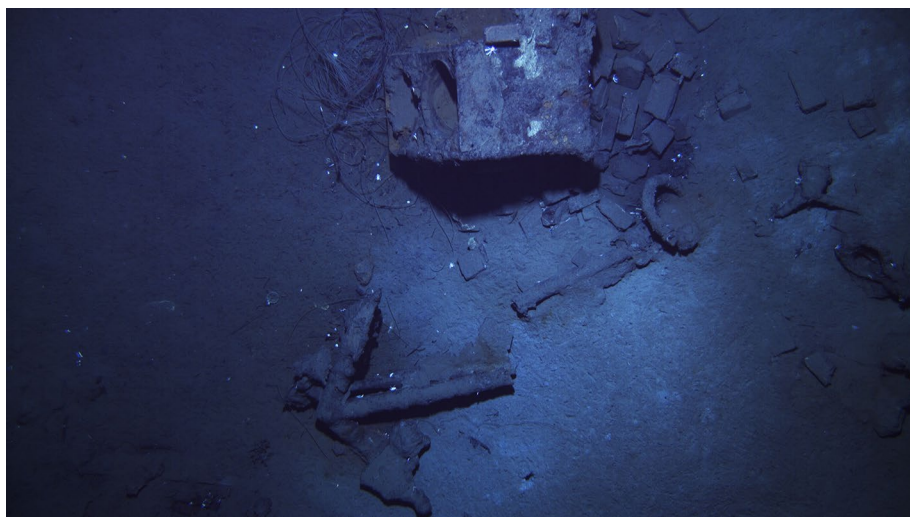
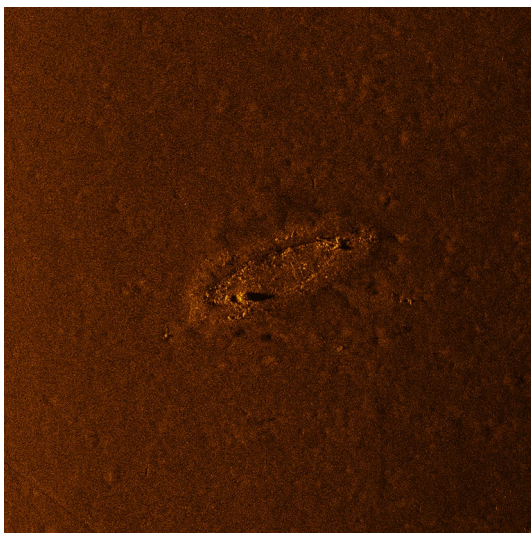


Fig. 3 HUGIN image from the 2017 flyover of the wreck showing the feature identified as a tryworks and a broken anchor (Bureau of Ocean Energy Management)

laser scales (<https://www.boem.gov/environment/virtual-archaeology-museum#Shipwreck-15563>).

The result in addition to hundreds of individual high-resolution images was both a large, high-resolution site mosaic and a three-dimensional orthomosaic of Wreck 15563. With these tools, within the limitations of that which was visible to the ROV (i.e., not buried in sediment or covered by another artifact or structure) is available for “re-diving” the wreck post-mission, both immediately and for the purposes of this article after the dive. What emerged from the subsequent virtual re-dives of Wreck 15563 changed our understanding

of the site and what lies within and near it. Not only did the unique characteristics of its being the type of sailing vessel it had been as well as its material culture and surviving, buried hull structure become more apparent. In addition to telepresence, systematic surveys for orthomosaics have emerged from missions like that to this and other wrecks as a key aspect of what should be the standard best practices for site exploration. The documentation of the site included intrusive fishing gear such as heavy monofilament that had snagged on exposed features. Post-depositional impacts to the wreck and the potential for the displacement or loss of artifacts is therefore a possibility at the site.

Wreck 15563's orthomosaic was processed and completed by Scott Sorset of BOEM working closely with the NOAA team (Fig. 4). What then followed was focused assessment of areas of the wreck, features, and artifacts that through satellite-enabled telepresence reached a wide audience. This mission underscored, as others did, the potential of telepresence for multiple, and multidisciplinary participation as well as reaching a wide and diverse audience who are not blocked by a pay wall. This aspect of work is more than a tool for collaborative and interconnected research, but also for open access sharing with the public while not revealing the exact location of a sensitive archaeological site. That has been the premise and now the promise fulfilled with telepresence-led missions on shipwrecks (Brennan et al. 2018). There is also, as noted on this exploration, the potential for a hypothesis to slip out prematurely, and become fixed in the public mind when media is watching and covering the dive, as has been an open-access aspect of many government (i.e., taxpayer) funded missions.

Archaeological Remains

Measurements from within the scaled orthomosaic model show a length from bow to stern of 18.0 m (59.1 ft) exactly. These measurements were taken from areas of visible hull staining. The widest visible extent of the wreck's breadth from port to starboard was 4.31 m (14.1 ft). The wreck site is defined by mounds of silt that delineate some areas of the hull where the vessel came to rest on the seabed, apparently sinking more or less intact and possibly striking the seabed at the bow based on a larger mass of displaced sediment at this location on the wreck. The visual prominence of the stern also suggests this. The sharpness and narrow nature of the structure at the stern indicates that it is below the level of the waterline, and close to the keel/keelson.



Fig. 4 Orthomosaic of Wreck 15563 (Bureau of Ocean Energy Management)

Several large stone cobbles at the stern are also present (Fig. 5). These stones are ballast used to lower the ship's center of gravity. The clean, worn surface of the ballast indicates that it was collected from a beach or river environment. The ballast may be indicative, if analyzed, of where it was collected. The large size of many of the cobbles, intermixed with smaller more intermediate sizes, is typical of a clean, moveable ballast capable of being densely packed to avoid shifting (see Burström 2017).

Despite the placement of an intact anchor at one end of the wreck, the relative sharpness of the lines of the hull, and other artifacts—notably a remarkably intact pane of glass from a stern cabin window, and the still-aligned hawse pipes at the other end of the wreck—indicate that the anchor is at the stern. As will be discussed later, this is the stowed position for a stream anchor to be situated on ships of the nineteenth century. The pane of glass, an intact rectangle, rests edge up, beneath the anchor. Its intact nature suggests that the stern did not strike the seabed first, and, likely intact, was gradually consumed by marine organisms. Other artifacts and features on the wreck observed during the ROV dive were the outline of a small cask, with no lid, lying upright and buried in silt near the camboose, and a small glass globe that is broken and half buried in silt that appears to be the exposed half of a minute glass of undetermined timing duration, but of a type used in maritime navigation.

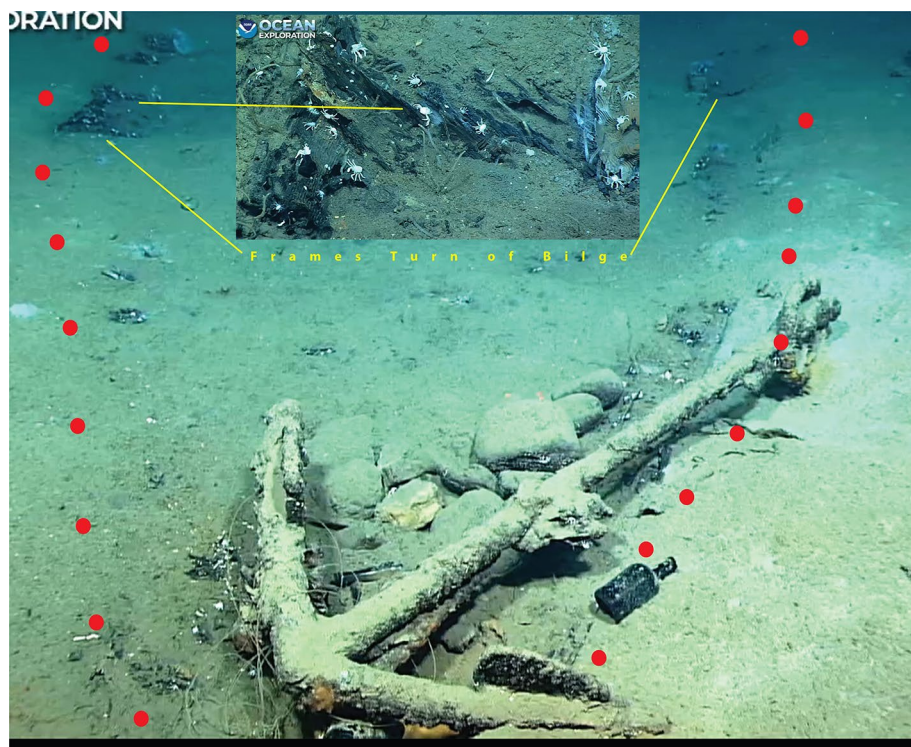


Fig. 5 View looking forward of the likely stream anchor at the stern, exposed frames at the stern, ballast, and exposed frame ends along the sediment line of the port side as it widens toward midships (NOAA Office of Ocean Exploration and Research/Robert V. Schwemmer, NOAA Office of National Marine Sanctuaries)

As the wooden hull was not copper-sheathed, marine organisms have consumed much of the structure, leaving the floors and portions of the frames intact, but little remains of any wooden ship component above the mudline. The stern is clearly delineated in the outline of the hull in the sediment, as it tapers to a sharp point where the cant frames on the keel and keelson, still visible, were attached to the now-gone upper hull, sternpost, rudder and transom. The mounding of the silt is more pronounced on the starboard side, which may suggest that the vessel came to rest canted to starboard when it settled to the seabed after sinking.

A single iron chainplate lying separate from the main body of the wreck site suggests the hull was oriented in that direction. There is an exposed section of double frames just forward of the port quarter; there is also an exposed section of hull on the port side midships. These indicate that the lower hull is intact beneath the sediment and that perhaps as much as 20% of the hull may be buried and preserved.

The bow is not as clearly defined, but the substantially buried hawse pipes for the anchor cable are oriented side by side. In early nineteenth-century vessels, the stern post angled aft at a rake, and the stem curved forward. The maximum distance inside the hull, from the inside of the stem to the inside of the sternpost, was the rule for Builder's Old Measurement determination of a vessel's registered length. These were then used to determine the tonnage (Arthur 1863, p. 417).

There are no visible fastenings; this may be because the vessel was iron-fastened, which was instead a more economical form of shipbuilding in the nineteenth century. Copper and copper-alloy fasteners were expensive in the early industrial era, while wrought iron became cheaper as production of it grew rapidly at the end of the eighteenth and into the early nineteenth century (McCarthy 2005, pp. 36–37). A number of smaller shipyards, especially in post-colonial America, were small, family-run businesses who blacksmithed their own fasteners from industrially-produced stock in their yards. Treenails, another cheaper alternative for fasteners, were primarily used to fasten planks to frames (McCarthy 2005, p. 65).

Copper, and alloys of it, was expensive and, while used in shipbuilding in the last decades of the eighteenth century, not the metal of choice for many merchant vessels, especially those in trades where high returns on investment were less likely than steady, if at times inconsistent, income. By 1816, only 16% of the vessels listed in *Lloyd's Register* were copper-sheathed, and into the next decades, copper sheathing remained the choice only for naval vessels, privateers, and for vessels engaged in lucrative trades such as the West Indies and slave trades (McCarthy 2005, p. 109). Wreck 15563 was likely iron and treenail-fastened and sheathed only with sacrificial wood planking that was replaced every few years.

There are three visible anchors on the wreck. None of the anchors are at the head of the bow and are not in the positions where they were likely stowed when the vessel was working. One, as noted, is aft, overlying the edge of the starboard quarter directly at the stern, and may be the stream anchor, often stowed at the stern and used to position a vessel when it was moored in narrow waterways (see Steffy 1994, p. 267), and the other is along the port side abaft the port bow but well aft of a "catted" or stowed position. These two large anchors are single wooden-stock iron anchors of the old Admiralty Pattern (Curryer 1999, pp. 52–54). This style of late eighteenth-century anchor remained in common use through the first quarter of the nineteenth century on both British and American vessels, and while gradually replaced by Pering Patent anchors (1813), some remained in service through mid-century.

The two large anchors may be bowers, which were the largest on board and used to anchor the vessel at the bow. Small merchant ships of the early to mid-nineteenth century typically carried four anchors: two bowers, a smaller anchor known as a “stream,” and a kedge (Arthur 1863, pp. 11–12; also see Lever 1819, p. 67). The anchor on the port side’s ring has traces of puddening, “a quantity of yarns, mats or oakum...laid round rings of anchors, when rope cables were in use, to prevent chafing” (Lever 1819, pp. 68–69; Arthur 1863, p. 294). This anchor is broken in half at the shank. This is not unusual, as a contemporary account of the Old Pattern Admiralty style anchor noted that “the chief or only complaint recorded against it was, that it was frequently broken” (Cotsell 1856, p. 7). This anchor may have been stowed in the hold at the time of the vessel’s loss, which could explain why it is not in a position at the bow. The break may be post-depositional or as a result of the sinking event.

The third anchor is a buried kedge with one palm and the end of an iron stock in the stowed position. It may have also been stowed in the hold. Unless it is buried on the site, a third large anchor should be visible on the wreck. The absence of the other three anchors could be attributed to their deployment and loss in a storm, or from the vessel having been salvaged prior to sinking. There is no anchor chain visible; the standard for the period, especially for small merchant vessels, was hemp cable (Lever 1819, p. 67). The hawse pipes, the starboard pipe appearing slightly mangled, appear to be lead, which was standard for the period. For anchors the size of those on the wreck, an 80 fathom (480 ft or 146 m) run of 9¼ in. cable was the industry standard (Young 1863, p. 13).

There are three visible chainplates. Two are along the edge of the hull as it trends aft to the port beam from the bow and, as previously noted, there is an individual chainplate with a deadeye off the starboard port quarter. The position and spacing indicate that this was a two-masted vessel, either a topsail schooner or a brig, which were the most common rigs for small American merchant vessels of the first half of the nineteenth century. Chainplates supported the shrouds, tar-coated standing rigging described as a “range of large ropes, extended from the mast-head to the port and starboard sides of the vessel, to support the masts” (Biddlecomb 1848, p. 29). The lower part of a chainplate was a blacksmithed oval “chain plate” that was bolted through an outer strake, the hull planking and frames; to it the “links” were attached to the “channels,” or timbers bolted in a fore-and-aft direction as the out-riggers for the chainplates.

The link attached to the lower end of the iron binding, blacksmithed double iron rods that surrounded the wooden deadeye and terminated in a thimble that attached to the links. This is what was observed on the chainplates from Wreck 15563. While the deadeyes are missing from the port chainplates, the deadeye survives in the starboard chainplate’s oval. Deadeyes were “wooden blocks, with flat sides, having three or four holes, instead of sheaves, through which the laniards reeve when setting up the shrouds or stays” (Biddlecomb 1848, p. 11). The shrouds ran aloft to the eye that was fastened to the cap of the lower mast.

This style of chainplate began to pass out of use in the 1840s in favor of a stronger “double-bar” chainplate forged from a single iron bar that had been smithed to loop around the deadeye and was bolted into the hull at its lower end. This shift was in keeping with the increased preference for iron (Murphy and Jeffers 1849, p. 17). Later examples had a separately-forged double loop bolted to the bars that were bolted to the hull (Underhill 1946, p. 118; Young 1863, pp. 80–81). The style of the chainplates on Wreck 15563, therefore, is consistent with the hull form, dimensions, and the anchors in suggesting a second quarter of the nineteenth century date of construction and use for this vessel.

The Camboose

The prominent feature on the wreck is a cast iron stove that is configured like a whaling tryworks (Fig. 6). Ship's stoves made of iron were commonly known as “cambooses” in the nineteenth century, and also known as “cabouses” or “cabooses,” (which ultimately gave the name for the cabins on deck that sheltered them, as the interior space was known as the “galley”). The first stoves for cooking on ships were hearths made of brick, but as early as 1676 “certain secure & commodious fire hearths for ships made of iron, copper & other metals” (Clifford 1997, pp. 52, 55). English patents, such as William Johnson’s “double and single kettles and boilers of wrought iron plate,” Stephen Beck’s 1785 “newly invented machine or ships’ hearth,” or William Whittington’s “machine for roasting meat... in camps, and on board ships” were first used on American ships in the mid to late eighteenth century (Clifford 1997, pp. 52, 55–57).

The first cambooses patented in the United States date to 1795, when John Youle of New York was issued a patent for his “cabouse.” Youle’s basic design led to multiple patents for stoves of various sizes, and a number of American patents that closely followed his design. Youle’s patent dominated the shipboard market for the next few decades. One of these was the patent for what merchant John W. Godfrey offered for sale from his Philadelphia store in 1801 as “CAMBOOSES, a great variety...” (*Aurora General Advertiser*, 9 December 1801, p. 4). Nathaniel Cross of Portland, Maine, advertised “STOVES and CAMBOOSES “of various sizes” (*The Portland Gazette*, 14 October 1805, p. 4) (Fig. 7).

John Fox of Portland, Maine, advertised in 1811 that he was selling ‘AN assortment of Youle’s patent CAMBOOSES, combining all the advantages of the English patent Camboose, and at a much less price’ (*The Portland Gazette*, 2 December 1811, p. 4). In 1812, Youle himself advertised among other items for sale “Stoves, cast from new patterns, and much improved,” (*New York Evening Post*, 25 August 1812, p. 1). Newport, Rhode Island,



Fig. 6 Camboose with some bricks visible, anchor, and chainplates (NOAA Office of Ocean Exploration and Research)

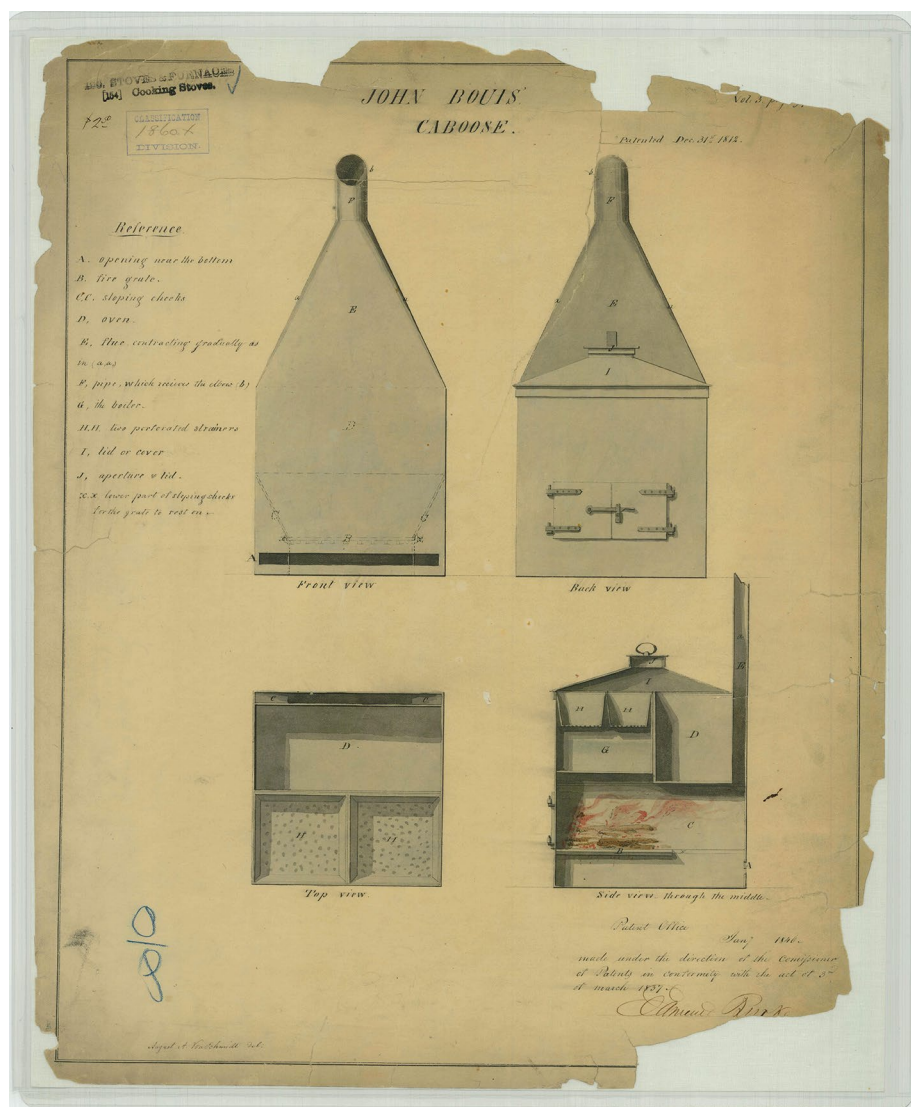


Fig. 7 The 1812 patent of John Bouis for a caboose (National Archives, NAID: 149285794)

merchants Peckham & Baker advertised in 1816 that they were selling “No. 1, 2, 3, and 4 Youle’s patent Cambooses” (*The Rhode-Island Republican*, 3 January 1816, p. 1).

Youle’s patents lasted for decades, as did his business; it was not until June 1829 that Samuel F. Halsey, the administrator of Youle’s estate, advertised he would lease Youle’s “old established House” to any “STOVE & CABOUSE manufacturer,” because he was “desirous of disposing of the remaining stock of the late George Youle (deceased),” at “very reduced prices, in lots to suit purchasers,” as well as lease the factory at 296 Water Street, New York, which “has, perhaps, more convenience appertaining to the above business than any other extensive establishment of the kind in the city, and offers a rare

opportunity for a person commencing or one already in business” (The New York *Evening Post*, 18 June 1829, p. 4).

Stoves represented 10% of all American patents in the 1830s and 1840s (Harris 2009, p. 366) (Fig. 8). There was no single style or size, and many of the pre-1836 patent drawings do not survive because of a fire that year in the Patent Office. Patents of the period, even in description only, reflect complexity and multiple uses. John Lamb of New York patented a camboose modified through “improvements” to distill seawater to make fresh “and other purposes” and for the “purposes of cooking at sea” in July 1806 (*The Repertory of Arts, Manufactures, and Agriculture* 66, Second Series, November 1807, pp. 407–411).

The camboose on Wreck 15563 is corroded and covered with concretion, but the face of the camboose has the cast name “G & W ASHBRIDGE” (Fig. 9). The brothers Ashbridge were scions of a prominent Quaker family who had invested in New Jersey iron founding and camboose manufacture. George Ashbridge was one of the owners of Weymouth Furnace, which harvested bog iron and made pig iron as well as more complex castings, and reportedly produced a ton of iron a day (Braddock-Rogers 1930, p. 1507). George Ashbridge and four business partners opened the foundry on the Great Egg Harbor River in New Jersey in 1802 and operated through 1862. They sold their wares on Philadelphia’s Market Street Wharf at a “mart for the exhibition and sale of ships’ cambooses, stores, etc., made, prepared or furnished by E.G. & W. Ashbridge, in 1799” (Ritter 1860, p. 35). Philadelphia was “the center of the district where most stove plate was made and stove use first became commonplace” (Harris 2008, p. 706).

William Ashbridge patented his “Improvement in the Construction of Iron Cabooses” as Patent No. 468 in 1803, but no drawing survives. Previously mentioned iron founder John Youle patented a variety of “cabouses,” “caboose stove apparatus for cooking and



Fig. 8 A variety of stoves for cooking and heating illustrate the diversity of stove types that evolved from the 1830s through the 1840s in this c. 1845 advertisement for Philadelphia stove, copper, brass, and iron founder Joseph Feinour’s store on South Front Street (Library Company of Philadelphia, Print Dept. *W209 [P.2112])

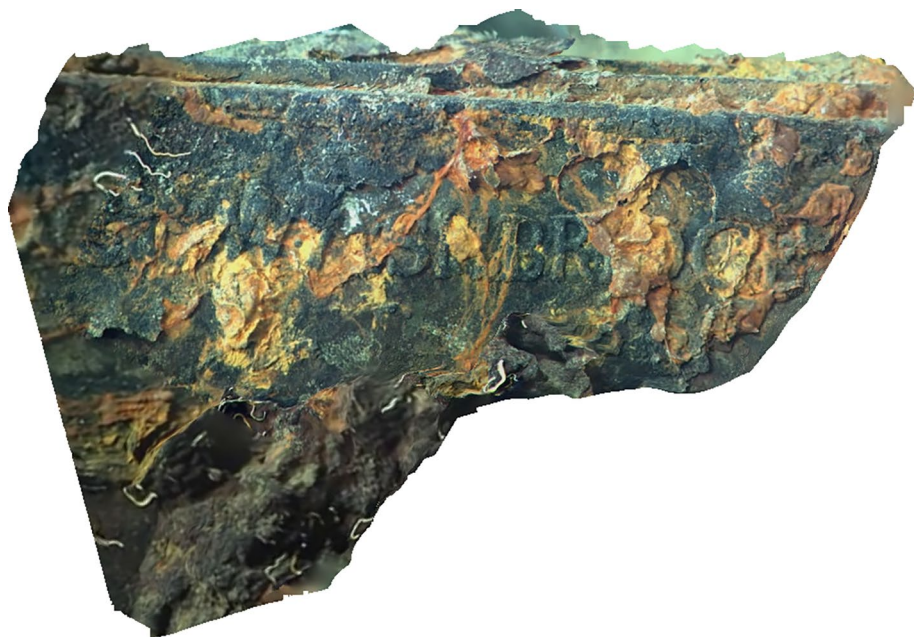


Fig. 9 The front of the camboose with the Ashbridge name (NOAA Office of Ocean Exploration and Research)

distilling,” “movable kitchens,” and “Fire-hearth Range or Galleys” between 1806 and 1819. By the 1830s, cambooses had evolved into complex structures that allowed for “boiling, baking, roasting or cooking in any other manner at one or at the same time” as one patented by Benjamin Spratley of Portsmouth, Virginia did (U.S. Patent 402, 25 September 1837). This is the period in which cast-iron stoves ashore began to assume “a recognizably mature form” (Harris 2009, p. 367). At the same time, “a trickle of stove patents turned into a steady stream in the 1830s” (Harris 2009, p. 368).

This was also a time in which stove inventors and manufacturers were changing their inventions to adapt from firewood to anthracite coal (Harris 2009, p. 369–370). By the mid-1830s, new stoves flooded the market as stove dealers commissioned their own designs, and not just the older forms created by the various iron foundries, raising “the rate of innovation and the likelihood of a rapid response to signals from an increasingly experienced, demanding and competitive market” while also developing “improved techniques for the production of cheaper, lighter, more durable and more attractive goods” (Harris 2009, p. 371). The Ashbridge stove on the wreck presumably predates the 1830s, or it could be a later modification of an older stove.

The history of ship stoves is sparsely documented in the historical and archaeological record, with the most extensive review to date being by Horrell (2017). Generally, a transition from brick-lined hearths and individual kettles and pots gave way to fire hearths and the more expensive camboose in the last decades of the eighteenth century and the first decades of the nineteenth century, but not all vessels carried them as they were an expensive item. The wreck of the ship *General Carleton*, a Whitby collier built in 1771 and lost in 1785, excavated and studied in 1997, revealed a rectangular, 70 by 80 cm fire hearth made of 8 mm thick iron plates, with overlapping edges riveted together, and lined with bricks. It stood on four

legs, and with iron lifting rings on either side (Ossowski 2008, pp. 146–147). In the United States, the Rose Hill Wreck, an eighteenth-century ocean-going vessel that lay off a Colonial era landing on the Cape Fear River near Wilmington, North Carolina, when excavated yielded the remains of a fire hearth or stove. The remains of the stove or hearth were primarily its iron plates with lifting rings. It had been riveted together. The artifacts were found amidships and had been placed on either the upper or lower deck and fallen into the hold when the vessel burned to its waterline (Wilde-Ramsing et al. 1997, pp. 45–47).

This style of early ship stove followed the trend ashore in American homes, as cooking over an open-hearth fireplace evolved into the kitchen with a cook stove in the early to mid-nineteenth century (Brewer 2000). While stoves, many of them brick with minimal iron hardware, were a centuries old invention, they had primarily been used for heating until that time (Brewer 2000, pp. 18–26). Small cast-iron cook stoves began to appear in American homes in the 1760s as “an auxiliary to the open fire” but remained rare in homes until the end of the century (Brewer 2000, p. 33). Small stoves for heating ships’ cabins were advertised as early as 1759 (Brewer 2000, p. 35). It was not until the end of the eighteenth century and the early nineteenth century that small cook stoves began to appear that were suitable for ship-board use as inventors and merchants worked to satisfy demand for “smaller, transportable cooking appliances” (Brewer 2000, p. 46).

However, through the 1830s, as a large number of different types of stoves were patented and manufactured, both the product and the business of selling it was “still experimental” (Brewer 2000, p. 77). As early as 1818, “an enterprising and successful mechanic” ship chandler Peter Grinnell from Providence, Rhode Island, advertised that he was selling ships’ stoves as part of his stock, but he also sold stoves for home use “as an adjunct” (Stone 1860, p. 57; Brewer 2000, p. 77). Prices for stoves were generally high, however, and beyond the reach of families and ship owners of moderate means (Brewer 2000, p. 79). This meant that larger, elaborate stoves or “cambooses” like that on Shipwreck 15563 prior to 1840 were not widely used on smaller vessels other than naval ships, packet ships, and any other vessel engaged in more lucrative trades—such as whaling (Fig. 10).

An advertisement in the *Boston Post* in 1842, suggests both a glut on the market as well as offering newer cambooses, both as a business was settling accounts, perhaps due to bankruptcy, but also perhaps as standardization was taking hold:

TO SHIP OWNERS, A good assortment of SHIP STOVES and CAMBOOSES, which will be sold at a very low rate, in order to close the present stock, and to settle with Administrators. Old cambooses and Stoves repaired, or take mine exchange for new ones, DAVID HOOPER & CO., 15 and 16 Union Street. (*Boston Post*, 10 August 1842, p. 3)

There was both variation and apparent standardization by the 1830s; the 1836 New Bedford City Directory includes an advertisement of Jacob Parker at No. 15 Central Street, who sold anchors, chain cables, chains, iron castings “of all kinds” and “CAMBOOSES, No. 1 to No. 8 inclusive, with apparatus complete” (Crapo 1836, p. 2).

Comparative Archaeological Examples of Cambooses

The Blake Ridge Wreck was discovered off North Carolina in 2015 in 7000 ft (2130 m) of water and documented by *Okeanos Explorer* in 2018. It was a small fishing smack and its largely marine organism-consumed remains are those of a small wooden, two

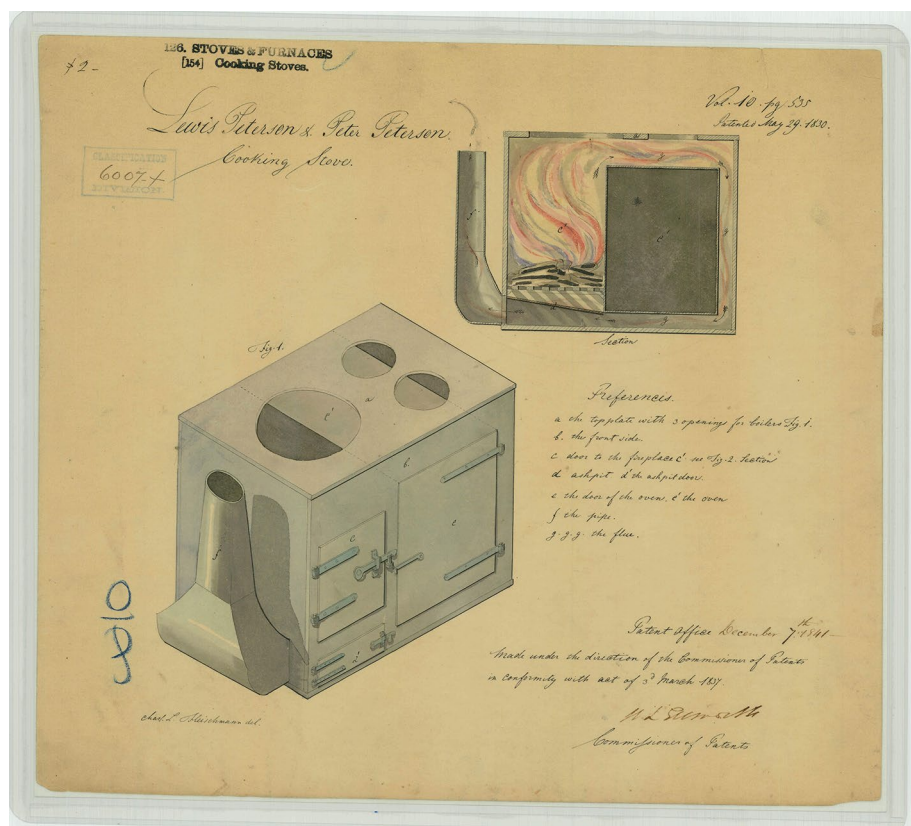


Fig. 10 Lewis Peterson and Peter Peterson's "restored" 29 May 1830 patent drawing for a cooking stove (National Archives, NAID: 159159804)

masted vessel of c. 1840–1860, based on the style of its chainplates, which are a double-bar style introduced c. 1840. It has no camboose, but the outlines of a large and a smaller iron cooking pot lie adjacent to a tumbled pile of more than 100 red bricks that formed a shipboard hearth.

The only archaeologically recovered ship's camboose from the Gulf of Mexico is from the Mardi Gras Wreck (Shipwreck 15321), and is "transitional from the small, simple fire hearths to the cast-iron stove that would have been used to boil and roast food for the vessel's crew and passengers" (Horrell 2017, p. 367). It is instead a small, 49 by 68 cm (19.3 by 26.8 in.) stove. Its original position on the wreck, when discovered and documented, was "either forward or abaft a mast; in this case, probably the main mast... This placement is consistent with information... identified in the historical and archaeological record. It has been postulated that stoves on smaller ships were often placed amidships because of the limited amount of space in the forecabin" (Horrell 2017, p. 367) (Fig. 11).

The basic structure hosts a rectangular kettle, separate from the framework, divided into two basins (Horrell 2017, p. 369) (Fig. 11). A hearth extends from the front of the stove, "the only access to the interior of the stove, where the fire could be maintained, stoked, or

provided with additional fuel,” and may have supported a spit for roasting meat (Horrell 2017, p. 369). In addition,

Associated with the stove are two sheets of lead, Artifact No. 301, likely used to protect the deck and surrounding hull features from the sparks and extreme heat generated by the stove. This is evident by an impression observed in the lead sheet that matched one of the stove legs...No evidence of brick or flagstones was identified during the archaeological excavations, suggesting that these lead sheets alone were utilized for this purpose. (Horrell 2017, p. 369)

The same style of lead sheet was observed subsequently on a c. 1818 deep-water shipwreck in the Gulf, Monterrey A (Shipwreck 15577), next to its toppled camboose. That camboose, lying on its back, has an open hearth like the Mardi Gras camboose, but is larger with the basin side by side with a flat cooking surface (Fig. 12). A nearly identical stove was also observed on the nearby Monterrey B shipwreck (Shipwreck 15578), which is contemporary with Monterrey A, and was likely lost while sailing with it and another ship, Monterrey C (Shipwreck 15579).

Another deep-water Gulf shipwreck, Shipwreck 15377, which appears to be a c. 1830s full-rigged packet ship, has a camboose that is larger than that on Monterrey A and B, which has five or six circular openings for pots, as well as what may be smaller basins (see Delgado, Brennan and Irion, this volume) (Figs. 13, 14).

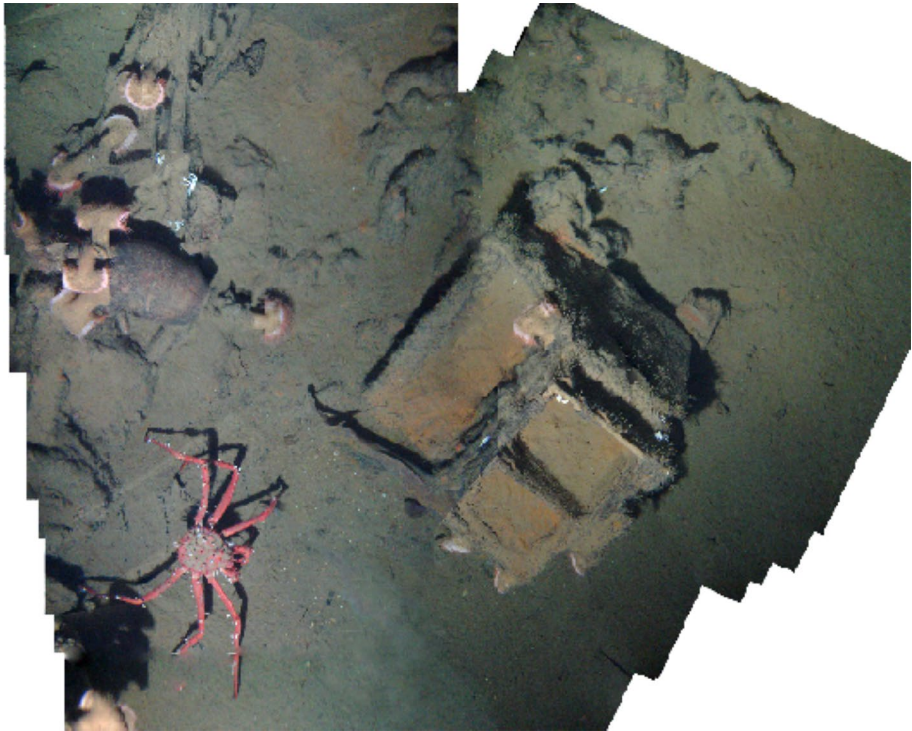


Fig. 11 The camboose/stove in situ on the Mardi Gras Wreck (Texas A&M University, Conservation Research Laboratory/BOEM)



Fig. 12 The camboose on the Monterey A Shipwreck (NOAA Office of Ocean Exploration)

The close association of the camboose on Wreck 15563 with a few dozen visible large red bricks that lie below it, as well as one that adheres to it, possibly from concretion due to corrosion, may suggest that it lay atop the bricks, which formed a fire-resistant hearth. If this camboose was being used as a tryworks, it would have been active for periods of 20 h and longer, with intense heat as the blubber was rendered. This is an important point in comparing this camboose to the other archaeological examples that



Fig. 13 The camboose on the Monterey B Shipwreck (NOAA Office of Ocean Exploration)



Fig. 14 The camboose on the 15377 Shipwreck (NOAA Office of Ocean Exploration)

were used for regular cooking duties. All of those examples had metal sheathing below them to shield the wooden deck from heat. The camboose on Wreck 15563 has brick.

The toppling of the camboose and bricks from beneath it may have occurred as the wooden deck planking deteriorated along the forward port area, especially if the bow-first impact weakened the wood there. The angle of the scatter of bricks beneath the camboose and to port and slightly forward indicates the trajectory of the hearth's fall from the deck during the ship's deterioration. The close location of the bricks, if they are a hearth that the camboose lay atop of, would suggest that the camboose is close to its original position and did not fall far. The position of the camboose, if this is correct, is directly adjacent to the traditional location for tryworks employed by whaling ships near the foremast.

As whaling voyages moved farther out to sea and extended into periods of several months and then to years at sea, the next "revolutionary innovation was the transfer of the tryworks from the shore to the deck of the whaler" (Davis et al. 1997, p. 36). This was a problem for smaller vessels; "mounting a tryworks large enough to process a bowhead easily would make a small vessel structurally unstable" (Davis et al. 1997, p. 36). Smaller tryworks were installed, but these limited the amount of oil produced. As American whaling grew in numbers, so too did the vessels in the American merchant whaling fleet as larger tonnage ships and barks were introduced.

In the 1830s, advertisements in whaling port newspapers advertised both try pots and "try cambooses;" "TRY POT of 140, 160, 180 and 200 gallons each, for sale by THO'S A GARDNER" (*Nantucket Inquirer and Mirror*, 12 July 1834, p. 1). Another advertisement offered "Cambooses. Just received and for sale by the subscriber, a number of ships cooking Cambooses of various sizes and Iron Knees for Try Cambooses which will be sold low. RUEBEN MACY" (*Nantucket Inquirer and Mirror*, 16 July 1834, p. 4). "Try Camboose Grates; Spike Rods; Nail Rods; Hoop iron, & c." (*Nantucket Inquirer and Mirror*, 5 July 1834, p. 1). In assessing whether this is an indication of an all-iron camboose that was a tryworks, the nineteenth century usage of the word denoted an area on board a vessel for cooking and not necessarily what in modern usage

would be called a “stove.” Whalers apparently referred to tryworks as try cambooses, and in that usage, this would have been the brick work, iron grates, doors, and try pots, and the iron knees that anchored the brick walls of the cooking area to the deck. This is likely the context for the advertisement by Rueben Macy noted above in the *Nantucket Inquirer and Mirror* of 16 July 1834.

At the same time, the account books for the whaler *Charles W. Morgan*’s maiden voyage in 1840–1841 includes the costs of outfitting the “Camboose, pipes & c” \$76.38” (Schultz 1967, p. 208) as well as the “Whaling apparatus – try works, Paul Baker 3500 bricks @ \$8 28.00” (Schultz 1967, p. 212), the costs for “Jacob Parker, Anchors, try pots &c. 737.30 Taber [Gibbs] & Underwood [Frederick] Building try works 18.43” (Schultz 1967, p. 213) and finally the “Total cost of try works 793.98” (Schultz 1967, p. 214). This would indicate that at that time and on that whaler, the camboose was the camboose and the try works was the try works. However, in 1855, an advertisement in the Honolulu *Polynesian* listed “Whalemen’s Cambooses. 5 BEST pattern Whalers’ Stoves with fixtures, funnel, &c., complete, for sale cheaper than can elsewhere be obtained in town, J.C. Spalding, Honolulu” (*The Polynesian*, 24 November 1855, p. 2).

Schooners and brigs remained in the fleets of smaller communities, especially those that engaged in seasonal hunting, through the Civil War. As whaling declined postbellum, brigs and schooners “became significant again,” but they represented only 5.6% of the New Bedford whaling fleet between 1820 and 1860 (Davis et al. 1997, p. 38). By mid-nineteenth century, larger vessels engaged in protracted voyages and carried larger tryworks; smaller vessels carried smaller tryworks that were likely built with a single trypot. The processing of a whale involved mooring the carcass alongside the whaler, flensing (cutting) the blubber from the carcass and winching it on deck in large “blanket strips,” and then cutting it into small “horse pieces” that were minced and then boiled in the tryworks at intense heat, fueled at first by firewood and then by “whaleskin and other scraps left over from the trying-out process” (Davis et al. 1997, p. 274).

The camboose on Shipwreck 15563 may be arranged as a hybrid tryworks also used as a stove. Its primary function as a means to cook would not interfere with using it to try out whale or other marine mammal oil from blubber; whalers ate doughnuts cooked in whale oil, fished out whale skin cracklings from the pots, and were not as squeamish as modern palates might presume.

Factors that could suggest a hybrid tryworks/cooking camboose are:

- (a) The side-by-side arrangement of two pots in the camboose, a feature of tryworks but at approximately 10% of the volume of a traditional whaling trypot of the period;
- (b) The size of the camboose is appropriate for a small vessel with a small crew and few passengers, if it carried them;
- (c) The number of bricks, whether as a hearth or an enclosure for the camboose, indicates a concern for containing sustained high levels of heat, which is a characteristic of try works as the process of “trying out” the whale oil was lengthy and required sustained intense heat for hours or days in a successful hunt; and
- (d) The archaeologically demonstrated use of lead sheets for protection of a deck in the other archaeologically documented Gulf shipwreck sites with cambooses that are cooking stoves is not present on this wreck.

Factors that could argue against the hypothesis are:

- (a) The lack of specific archival records or patents referring to an Ashbridge patent for try works or a hybrid camboose utilized for trying out. It is, however, possible, that this camboose was specifically modified with little effort for the owner of the vessel.
- (b) The try pots on documented whaling wreck sites in the Pacific are larger than the possible try-pots built into the camboose on Wreck 15563. These cast-iron cauldrons ranged in size from 140 to 200 gallons capacity (Kirby 1860, p. 5; Hawes 1924, p. 172; Weiss 1974, p. 87). By 1860, there were two styles; the “old pattern” with capacity for 140, 160, 180, and 200 gallons, and the “new pattern” that had 200 and 220 gallon capacity. The dimensions of old and new pattern trypots range from 3 ft 9 in. in length by 3 ft 4 in. in width to 4 ft 9 in. in length and 3 ft 8 in. in width (Raupp 2015, p. 275).
- (c) It is possible that the bricks are from a traditional tryworks that was adjacent to the camboose, and that the camboose is simply a stove.

The question of what the camboose represents remains an open question; was it a try-works or a stove that looks like a tryworks? In assessing the question, in addition to assessing the physical evidence, are the parameters of what constituted a shipboard stove in the early to mid-nineteenth century, and whether the Gulf was a center of whaling—and if any whalers were lost in the Gulf.

The American Whale Fishery and the Gulf of Mexico Pre-Civil War

Whaling was one of the greatest American industries of the nineteenth century, amounting to the fifth most important aspect of the U.S. economy in terms of its output (Davis et al. 1997, p. 4). It was global in its aspect, both in regard to areas worked and economic importance, and was essentially an industry limited to the nineteenth century. The American whaling fleet effectively hunted the world ocean, including the Gulf of Mexico. That fleet, with an “annual average of only eighteen thousand vessel-tons in the years 1816–1820,” expanded in the next three decades “more than 11-fold” (Davis et al. 1997, p. 5). During the years 1841–1845, the economic heyday of American whaling, the U.S. fleet stood at 672 vessels engaged in the industry (Davis et al. 1997, p. 6, Table 1).

An early historian of the whaling industry notes that the “golden era” of American whaling was the period between 1815 and 1860 (Tower 1907, p. 47). Due to its colonial, early eighteenth-century origins, American whaling remained coastal and was not widespread. However, there were “shorter voyages at the Grand Banks, Cape Verd Islands, various parts of the West Indies, in the Bay of Mexico, the Caribbean Sea, and on the coast of the Spanish Main” from colonial American ports (Brown 1850, p. 530). After the American Revolution when treaties opened British markets, the late eighteenth century saw an

Table 1 American whalers in the Gulf of Mexico, 1788–1800 (from Reeves et al. 2011)

Vessel name	Rig	Port	Year(s) of Voyage
<i>Keziah</i>	Sloop	New Bedford	1789, 1790, 1791, 1792
<i>Mary Ann</i>	Ship	Nantucket	1791
<i>Oxford</i>	Sloop	New Bedford	1792
<i>Rainbow</i>	Sloop	Dartmouth	1788
<i>Trial/Tryall</i>	Ship	New Bedford	1790

expansion of whaling into other waters, including the Gulf of Mexico, by the end of the century. Economic uncertainty and the activities of French privateers curtailed voyaging, especially as the Gulf was in close proximity to France's Caribbean and American colonies (Starbuck 1878, p. 91).

The few voyages *known* to have taken ships into the Gulf to whale in the eighteenth century followed a “fairly simple pattern” that took them from the Atlantic to the Caribbean and thence for several month-long forays into the Gulf's more enclosed waters (Reeves et al. 2011, p. 44) (Table 1). The slow recovery of the American whaling industry after its suppression by Britain during the Revolutionary War and subsequent conflicts with France in the early nineteenth century was a stagnant time. There were only two known voyages into the Gulf of Mexico, the 1801 cruise of the ship *Lydia*, and a foray into the Gulf by the ship *Dolphin* in 1802. *Dolphin* stopped during an extended South Atlantic cruise to and from the coast of Mozambique and the Delagao Bay whaling ground there. These are the only two known whaler stops in the Gulf, though there were likely others during the first decade of the new century.

This activity, however, was halted by the War of 1812, which put “an effectual stop to the pursuit of whaling from every port of the United States save Nantucket” (Starbuck 1878, p. 93). It was not until the end of the war in 1815 that whaling began to revive. The pursuit of the greatest oil-yielding animal, the sperm whale, followed a progression of “grounds” or areas where the whales congregated as populations: “for sperm whales in the Atlantic the order of occupation was approximately as follows: Carolina coasts, Bahamas, West Indies, Gulf of Mexico, Caribbean Sea, Azores, Cape Verde islands, and the coast of Africa” (Tower 1907, p. 92). The “order of occupation” was the progression of the hunt as American whalers sought new areas to exploit. While whaling voyages might depart for a specific ground, the vessel would range among the grounds, hunting from one to another until the voyage was deemed over, either in terms of reaching a quota or capacity in the hold, measured by barrels of rendered oil, or other factors that included limitations of the vessel or crew, accident, and the need to re-provision and ship new crew.

Because of this, while relatively few vessels are specifically listed as having worked the Gulf's whale fishery, based on declaring the “Gulf,” or “Bay of Mexico” as their intended destination, a number of vessels that declared the West Indies, Atlantic or South Atlantic also hunted in the Gulf of Mexico. To read the “progression” as a sequence of fishing out a specific ground and moving on to fresh opportunities is not what occurred, as whaling in the Gulf of Mexico continued well through the nineteenth century. Even after the decline of whaling after mid-century as a major national industry, it remained a key part of the New England economy, and whalers continued to sail from Nantucket, New Bedford and other ports into the Gulf of Mexico as part of voyages that included hunting other grounds.

A more recent assessment, based on surviving logbook data, identified “204 different voyages that included one or more ‘vessel-seasons’ of whaling in the Gulf (total of 214 vessel seasons) between 1788 and 1877” (Reeves et al. 2011, p. 41). Thus the seemingly peripheral whaling ground that was the Gulf of Mexico was regularly hunted, albeit almost exclusively by ships that entered the Gulf for a set period of time, when or if hunting off the Azores, Cape Verde, the African coast and South America had not generated sufficient oil, and if provisions were sufficient and the crew was willing (Tables 1, 2, and 3).

By 1840, as American whalers spread around the globe, the Atlantic fishery, where the industry had begun, was “carried on by a smaller class of vessels than those used in the Pacific; the voyages are of less duration, and less capital is therefore required in this business than the other” (Goode 1887, p. 14). These smaller whalers began their season off the Azores, then headed south to Cape Verde, a whaling ground “also searched by

the outward-bound ships of the pacific fleet,” before crossing to the Brazilian coast, and then followed the coast “to the eastward of the Windward Islands; thence to the Bahama Banks, Cape Hatteras, and along the coast of the United States, home” (Goode 1887, p. 14). However,

The smaller class of whalers seldom extend their cruising to the south of the line, but after they have visited the first two whaling grounds they usually pass to the westward toward the island of Fernando de Noronha, and thence along the South American coast until they reach the Windward Islands. They frequent the Caribbean Sea in the months of January and February, and further to the westward off the peninsula of Yucatan and Cuba in April; after which they proceed through the Gulf of

Table 2 American whalers in the Gulf of Mexico, 1820–1840 (from Reeves et al. 2011)

Vessel name	Rig	Tonnage	Port	Year(s) of Voyage
<i>Almy</i>	Brig	91	Westport	1822, 1824, 1827**
<i>America</i>	Brig	150	New Bedford	1827
<i>Annawan</i>	Brig	159	Rochester, MA	1837
<i>Belvidere</i>	Schooner	–	Nantucket	1822
<i>Charleston Packet</i>	Brig	184	Fairhaven, MA	1827, 1829
<i>Columbus</i>	Brig	–	Westport, MA	1823, 1824
<i>Delight</i>	Brig	102	New Bedford	1837
<i>Dove</i>	Brig/sloop	–	Nantucket	1822, 1823
<i>Dromo</i>	Brig	–	Nantucket	1836
<i>Eliza Barker</i>	Schooner	–	New Bedford	1822
<i>Fanny</i>	Brig	–	New Bedford	1828
<i>Flora</i>	Schooner?	–	Provincetown	1836
<i>Franklin</i>	Schooner	–	Nantucket	1822
<i>Governor Hopkins</i>	Brig	111	Bristol, R.I	1837
<i>Harmony</i>	Schooner	–	Nantucket	1834, 1835, 1837
<i>Hazard</i>	Sloop	–	Nantucket	1833
<i>Imogene</i>	Brig	172	Provincetown	1835, 1838, 1839
<i>Industry</i>	Brig	94	Westport	1824, 1827 1828, 1836*
<i>Joshua Brown</i>	Schooner	113	Provincetown	1820, 1839
<i>Juno</i>	Brig	102/165?	New Bedford	1820, 1839
<i>Lexington</i>	Schooner	–	Nantucket	1835, 1836
<i>Louisa</i>	Ship	383	Lynn, MA	1836
<i>Meridian</i>	Brig	73	Wareham, MA	1840
<i>Oliver H. Perry</i>	Schooner	–	Nantucket	1821
<i>Phoenix</i>	Brig	150	Provincetown	1840
<i>Popmunnet</i>	Bark	184	Sippican, MA	1837
<i>Primrose</i>	Schooner	–	Nantucket	1834, 1837, 1838
<i>Regulator</i>	Schooner	74	Westport, MA	1829
<i>Troy</i>	Brig	156	Bristol, R.I./New London	1837, 1840

*Wrecked on the 1836 voyage in the Gulf of Mexico

**Registry surrendered at New Orleans 20 August 1819 and re-registered same day to Peter Corey of Tiverton, R.I. and Master Gilbert Corey of Tiverton (Survey of Federal Archives in Louisiana 1941:V. 1, p. 5)

Table 3 American whalers in the Gulf of Mexico, 1841–1860 (from Reeves et al. 2011)

Vessel name	Rig	Tonnage	Port	Year(s) of Voyage
<i>Agate</i>	Brig	179?	Boston	1844
<i>America</i>	Brig	148	Wareham, MA	1842, 1843, 1844
<i>Antarctic</i>	Schooner	136	Provincetown	1860
<i>Barclay</i>	Ship		Westport	1850, 1851, 1852, 1854
<i>Belle Isle</i>	Schooner	104	Provincetown	1842, 1843, 1844
<i>Brunette</i>	Bark	18x	Falmouth, MA	1842, 1843, 1844
<i>Carter Braxton</i>	Ship	132	Provincetown	1842, 1844
<i>Chase</i>	Bark	153	New Bedford	1842, 1843
<i>Columbus</i>	Ship	344	New London	1843
<i>Creole</i>	Bark	222	Boston	1842
<i>Dr. Franklin</i>	Bark	171	Westport	1843
<i>Dromo</i>	Brig/bark?	–	Nantucket/Sippican?	1841
<i>Elizabeth</i>	Brig	–	Freetown, MA?	1842
<i>Emigrant</i>	Bark	186	Bristol, R.I	1842
<i>Emma</i>	Bark	241	New Bedford	1841, 1842
<i>Esquimaux</i>	Schooner	106	Provincetown	1844
<i>Essex</i>	Bark	200	Bristol, R.I.?	1841
<i>Fairy</i>	Bark	185	Provincetown	1842, 1844
<i>Franklin</i>	Brig	172	Provincetown	1852
<i>Gem</i>	Brig	162	Provincetown	1844
<i>Governor Hopkins</i>	Brig	111	Bristol, R.I	1841, 1843
<i>H.N. “W?” Williams</i>	Schooner	108	Provincetown	1852
<i>Imogene</i>	Brig	172	Provincetown	1841, 1842
<i>John B. Dods</i>	Brig	163	Provincetown	1843, 1844
<i>LaGrange</i>	Brig	170	Mattapoisett, MA	1842, 1844, 1845
<i>Leander</i>	Bark	213	Mystic, CT	1844
<i>Leonidas</i>	Brig/ship	128/231	Fall River, MA	1842 (2), 1843, 1844
<i>Lewis Bruce</i>	Brig	113	Provincetown	1851, 1852, 1860
<i>Louisa</i>	Schooner	98	Provincetown	1844
<i>Maracaybo/also “i”</i>	Brig	93	Plymouth, MA	1842
<i>Mattapoisett</i>	Brig	150	Mattapoisett, MA	1842
<i>Meridian</i>	Brig	73	Wareham, MA	1841
<i>Mexico</i>	Brig	130	Westport, MA	1842, 1843
<i>Montezuma</i>	Bark	195	Wareham, MA	1843
<i>Montgomery</i>	Ship	135	Bristol, R.I	1843
<i>Ocean</i>	Brig	165	Sandwich, MA	1852
<i>Olive Clark</i>	Schooner	98	Provincetown	1855
<i>Osceola</i>	Bark	197/206?	New Bedford?	1852, 1853
<i>Pacific</i>	Brig	130	Provincetown	1843
<i>Pearl</i>	Bark	157	Sippican, MA	1841
<i>Phoenix</i>	Brig	150	Provincetown	1844
<i>Pilgrim</i>	Brig	137	Somerset, MA	1842, 1843, 1844
<i>Pocahontas</i>	Schooner	112	Newport, R.I	1841
<i>Popmunett</i>	Bark	184	Sippican, MA	1842

Table 3 (continued)

Vessel name	Rig	Tonnage	Port	Year(s) of Voyage
<i>Quito</i>	Brig	140	Sippican, MA	1843
<i>Richard Henry</i>	Bark	173	Provincetown	1842
<i>Rienzi</i>	Schooner	115	Mattapoisett	1844 (2)
<i>S.R. Soper</i>	Schooner	130	Provincetown	1852, 1855, 1857, 1860
<i>Samuel and Thomas</i>	Brig	191	Provincetown	1842
<i>Sarah</i>	Bark	171	Mattapoisett	1842
<i>Sarah Louisa</i>	Brig	144	New Bedford	1841, 1842
<i>Sea Bird</i>	Brig	143	Newport, R.I	1842
<i>Solon</i>	Brig	129	Sippican, MA	1842
<i>Theophilus Chase</i>	Bark	168	Westport, MA	1842, 1843
<i>Thomas Winslow</i>	Brig	136	Westport, MA	1842
<i>Troy</i>	Brig	156	Bristol, R.I	1842
<i>Tyleston</i>	Schooner	111	Nantucket	1841
<i>Varnum H. Hill</i>	Schooner	126	New Bedford	1860
<i>Walter Irving</i>	Schooner	130/96?	Provincetown	1857
<i>Walter K</i>	Schooner	114	Provincetown	1852
<i>Warwick</i>	Schooner	–	Bucksport, ME	1842
<i>William Henry</i>	Bark	186	Beverly	1860
<i>William Martin</i>	Schooner	134	Boston	1860

Mexico to cruise off the Bahama Banks and Cape Hatteras in May. Thence they pass northward, on either side of the Gulf Stream, to the eastern side of the Grand Banks. (Goode 1887, p. 15)

A reminiscence of the whaling career of George Waters Diman offers a detailed list of the roaming voyage of the brig *Governor Hopkins* of Bristol. *Governor Hopkins* sailed from Bristol on 25 August 1839 on a whaling voyage in the North Atlantic:

After cruising a month or two we stopped at Fayal, Azores Islands. From there cruised south, south of the Equator, on the Alhabros Banks, and on the coast of Brazil, north to the Windward Islands, stopping at Domingo, Deadman and St. Thomas Islands. South again around the south side of Cuba, through the Gulf of Mexico, the Gulf Stream in the north, cruising south of the stream, off east again, toward the Azores islands, and finally hove up for home. We arrived at Bristol on August 30th, 1840, after an absence of one year and four days. We made a poor voyage, taking only 80 barrels of oil. (Diman 1896, p. 6)

Governor Hopkins, under the command of Captain Meltiah Davis, set sail on 26 August 1839 on a voyage that lasted until 30 August 1840. Its voyage was typical for those whalers that stopped in the Gulf to whale; the Gulf was another ground to visit and try one's luck before moving on. Yet others did well; the brig *Quito*, on its 1842–1843 voyage, had good hunting in the deep waters between the Campeche Bank and the Florida Escarpment with multiple successful encounters with whales, with the boats striking and taking six whales alongside to “commence boiling until day light, followed by taking two more whales as they finished processing the first catch” (*Quito* Logbook, 26–28 April 1843). *Quito*'s crew

took another whale on 7 May and then took another whale on 15 May from a “shoal of whales” (*Quito* Logbook, 7–15 May 1843).

Various reminiscent accounts speak to whaling in the Gulf of Mexico as a slow evolution; an account of the “whale fishery of Provincetown,” for example, noted how that port sent out no whalers from 1824 to 1830; in 1832, the

brig *Imogene*, 170 tons, was bought in Boston for sperm whaling. She went into the Indian Ocean and was absent two years, obtaining 400 barrels of sperm oil. In 1835 the *Imogene* went another voyage to some of the Western Islands and the Gulf of Mexico. In 1836, the schooner *Louisa* (*Flora*) was added to the fleet. They went to the West Indies, where they got some humpback whales, then to the Gulf of Mexico, and later to the Western Islands; the *Louisa* obtaining 170 barrels and the *Imogene* 560. In 1837 the *Imogene* got 450 barrels in the Atlantic and the schooner *Louisa* 100. In 1838 the *Imogene* went to the Gulf of Mexico, getting 400 of sperm and 250 of whale oil. (Atwood 1887, p. 144)

Imogene, built in Saco, Maine, ended its whaling days in 1840 when it was condemned as unfit to sail after being badly damaged in the gale of 27 December 1839 when it and seven brigs and schooners went ashore (Anonymous 1840, p. 22); Provincetown whalers added the brigs *Franklin*, *Fairy*, and *Phoenix*, and the schooner *Belle Isle* that year. “The *Phoenix* went to the Gulf of Mexico (where she obtained 300 barrels of sperm oil),” and “from that time the whale fishery began to increase” (Atwood 1887, p. 145).

As whaling in the Gulf expanded after 1840, the heyday of Gulf whaling, a general pattern in regard to timing and itineraries evolved. “The smaller class of whalers...frequent the Caribbean Sea in the months of January and February, and further to the westward, off the Peninsula of Yucatan, and Cuba, in April; after which time they proceed through the Gulf of Mexico, to cruise off the Bahama Banks, and Cape Hatteras, in May” (Wilkes 1844, p. 521). A modern analysis of whaling logbooks from vessels that fished in the Gulf of Mexico identifies three “of the most profitable areas” as the waters off the mouth of the Mississippi River in the northern Gulf, the “eastern Gulf seaward of the 1000-m depth contour,” and the Bay of Campeche (Reeves et al. 2011, pp. 46–47). These activities took place well out of “view” of most people other than ships that passed and “spoke” a whaler or were “spoken.”

This is largely because a “striking feature of the Gulf of Mexico whale fishery is that vessels generally stayed well away from the mainland and rarely visited U.S. or Mexican ports” because there was little need to go ashore for provisions, the more profitable whaling grounds were well offshore. Political considerations at the time were such that going ashore or venturing close to a port was not wise, as it was a period of extensive privateering and piracy in the early nineteenth century, followed later by the Civil War (Reeves et al. 2011, p. 47).

In all, whalers hunted, killed and processed an estimated 1070 sperm whales in the Gulf of Mexico, many of them smaller whales; they also hunted blackfish, or “pilot whales,” oceanic dolphins “on an opportunistic basis,” which was “a typical feature of whaling for sperm whales in the Gulf,” and that less than 400 of these animals were struck, processed and added to the stores of oil in each whaler’s hold full of barrels (Reeves et al. 2011, p. 50). Other whaling grounds were explored and exploited, especially in the Pacific after 1825, and in the northern Pacific and into the Arctic after 1848, and these were heavily hunted. However, the Gulf of Mexico was regularly exploited in larger numbers in the 1840s and up to the Civil War with results sufficient to bring some captains back on repeat voyages.

This is evident with the record of known Gulf whaling voyages of the brig *America*, the ship *Barclay*, the schooner *Belle Isle*, the bark *Brunette*, the brig *La Grange*, the brig *Leonidas*, the brig *Lewis Bruce*, the bark *Osceola*, the brig *Pilgrim*, and the schooner *S.R. Soper*, all of which made three or more voyages to hunt whales in the Gulf of Mexico after 1840 (Reeves et al. 2011, p. 50). Most of those voyages were in the 1840s, the heyday of Gulf whaling, but 18 known voyages were made into the Gulf in the 1850s. In that period, the “regulars” were the ship *Barclay*, the brig *Lewis Bruce*, and the schooner *S.R. Soper*. There are gaps, with years in which no whalers were known to sail into the Gulf of Mexico, namely 1856, 1858 and 1859, but there were six whalers who entered the Gulf in 1860, among them the veterans *S.R. Soper* and *Lewis Bruce* (Reeves et al. 2011, p. 50).

While *Barclay*’s and *Lewis Bruce*’s 1850s voyages into the Gulf did not yield any whales save two strikes (throwing a harpoon into the animal) by *Barclay*’s crew off Cuba in March 1854, the thought of few to no whales did not stop their captains from venturing in and hunting for blackfish. Timing was everything, as whales were present; *Osceola*’s 1852 incursion into the Gulf yielded multiple sightings. On an extended voyage, the opportunity to add to profits was ever present when the proceeds were not yet sufficient and time at sea was relatively inexpensive. That is not to say there were not consequences. The veteran whaling brig *Thomas Winslow*, decades old, was noted in 1853 as “ten months out,” and headed for the Gulf of Mexico when the crew refused to work after being denied shore leave at Santo Domingo and were taken off the bark in Port Royal (New Orleans *Times-Picayune*, 7 May 1853, p. 4).

The log of the schooner *S.R. Soper* for 1860 saw it make a 16 day passage from Provincetown to the West Indies and commence whaling there, then to the Caymans, occasionally catching sight of other whalers including *Lewis Bruce*, and focusing their whaling in the mid-Gulf well south of the mouth of the Mississippi and in deep water. This voyage logged four encounters during which whales were struck and tried, and four sightings where the whales could not be caught (*S.R. Soper Logbook* 1860). When Civil War broke out, three whalers in the Gulf—*John Adams*, *Mermaid*, and *Panama*—were seized off the mouth of the Mississippi by the Confederate privateer *Calhoun*, brought to New Orleans as prizes, and sold with their cargoes of oil by the Confederate prize court. This and the capture of another whaler, the schooner *Varnum H. Hill*, had a somewhat chilling effect on whalers going into the Gulf, but that concern was alleviated as the Union Navy increased its presence in the Gulf on blockade duty and Confederate naval activity on the open Gulf died off.

The schooner *Geo. W. Lewis* whaled during the Civil War, hugging the eastern edge of the Yucatan Shelf in 1862–1863 with only one successful strike and four sightings (*Geo. W. Lewis Logbook* 1862–1863), and the captain stayed out of the Gulf other than to hug the northwest coast of Cuba without luck. On 6 May 1865, at anchor off Kingston, the captain of *Lewis* noted in his logbook “The sad news reached here of the assassination of President Lincoln... All the Americans in port have had colors half-mast all day also the government flags of St. Vincent” (*Geo. W. Williams* 1865). The Civil War was over, but so, too, it would transpire, was the heyday of whaling in the Gulf of Mexico.

The Whaling Brig Industry

Decades of detailed research in published and archival records, and a high degree of documentation for whaling voyages provides an extensive historical record to assess in regard to whalers in the Gulf of Mexico and any that wrecked. From the earliest voyages of the late eighteenth century through the end of the nineteenth century, 214 separate whaling

voyages entered and fished in the Gulf of Mexico (Lund et al. 2010; Reeves et al. 2011). Only one of those voyages ended in a total loss shipwreck in the Gulf of Mexico, the brig *Industry*, which foundered after being abandoned in a storm in May 1836.

Two brief mentions in Starbuck (1878) recount the final voyage of the brig *Industry*: “94 tons, of Westport, Massachusetts, Captain Hiram Francis, sailed to the Atlantic, April 17, 1835,” and “*Industry* sailed again late in 1835, or early in 1836, under Captain Soule, and was lost in the Gulf of Mexico with 310 sperm,” (Starbuck 1878, pp. 318–319). In addition, Starbuck notes that the schooner *Harmony* of Nantucket, sailed on 8 October 1836 for the Gulf Mexico, and returned home on 2 July 1837, with 200 barrels of oil because it “fell in with wreck of *Industry* and got about 200 barrels” (Starbuck 1878, pp. 326–327). This account, which later research showed was right about the events and wrong about the date (the events all took place in 1836), sparked a focused, detailed research project that revealed a forgotten story about the only whaler known to have wrecked in the Gulf of Mexico.

An account in the *Charleston Daily Courier* in July 1836 noted that the brig *Uncas*, which had just arrived at Norfolk, reported that it had been boarded by the whaler *Harmony*, under the command of Captain Swain of Nantucket while heading to port. Captain Swain, who had a whaling voyage to continue, asked Captain Boush of *Uncas* to report that he and the crew of *Harmony*:

on the 3d June, fell in with and boarded in lat. 27, 28 lon. 89, 20, by account, the wreck of brig *Industry*, of Westport, water logged, with great difficulty succeeded in freeing her, and took off 230 bbls. oil, part of sails and rigging, chain, cable and anchor. Her log was written up to 25th May, and was supposed to have been struck by a squall on the 27th, which was experienced by the *H.* by papers found on board, her crew consisted of 15 all told, at the time of leaving port. From appearances, Capt. Swain was under the impression they must have taken to her quarter boat, and hopes were entertained that they may have been picked up or made some port; one compass only was found in her binnacle. The wreck was afterwards boarded by brig *Thomas Winslow*, of Westport. (*Charleston Daily Courier*, 11 July 1836, p. 2)

Industry was a veteran whaler, entering the field in 1816. It was built at Westport in 1815 by master carpenter Isaac Cory, Jr., son of the brig’s owner, Isaac Cory, Sr., and was a single-decked, two-masted brig 64 ft 4 in. in length, with a 20 ft 2 in. beam and an 8 ft 6 in. depth of hold; the small size is reflected in its registered tonnage of 94 26/95 tons.

Simply fitted out, it had a square stern and did not carry a figurehead (Survey of Federal Archives 1940, p. 156). A drawing of a brig in one of *Industry*’s logbooks for its voyages in 1828 is a likely depiction of the whaler (Fig. 15). *Industry* was one of four vessels reentering the whaling trade from Westport after the War of 1812 along with the sloops *Aurora*, *Traveller*, and *Adventure* (Hall and Sowle 1914, p. 37). Instructions to the captain, William Clark, issued by the owners, Isaac Cory & Son, set the basic parameters for a standard voyage in the Atlantic by a small whaler for *Industry*’s first voyage:

Sir – You having command of the Brig *Industry*, bound on a whaling voyage and now ready to sail, you will imbrace [sic] the first favorable opportunity to go to sea and make the best of your way for the Windward West Indie [sic] Islands and there cruse [sic] until the tenth of April next and if you have at that time obtained three hundred barrels of oil you will make out your voyage short of the Capedevarde [Cape Verde]. Otherwise you will from the same 10th of April proceed for the Capedevarde by way of the Western Islands, with liberty to go on the coast of Africa and provided

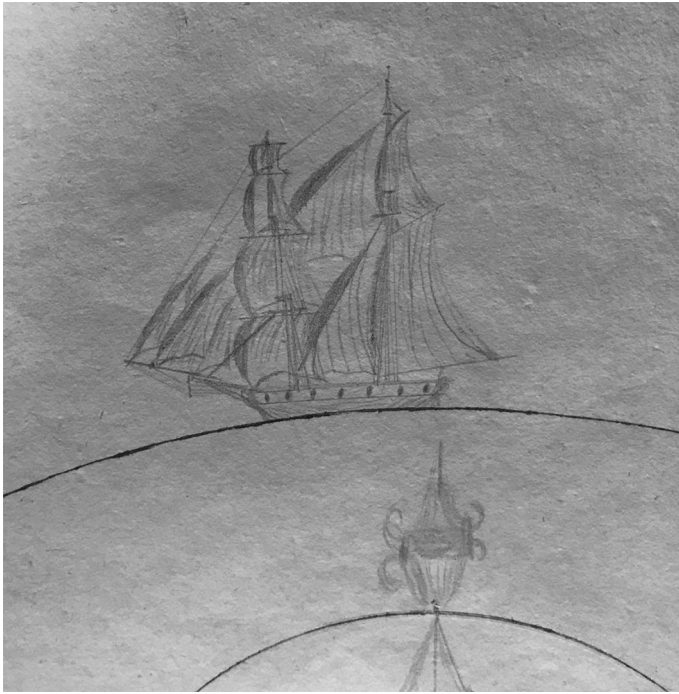


Fig. 15 Pencil sketch of the brig *Industry* from its 1828 logbook (New Bedford Whaling Museum/James P. Delgado photograph)

you do not go to the Capedevards, etc., you will not return to Westport without a full cargo of oil until your provisions are expended. Must recommend your keeping good order and regulations on board and to be particular in indevering [sic] to preserve the helth [sic] of the crew. Wishing you an agreeable and prosperous voyage, are yours, etc. (Hall and Sowle 1914, p. 30)

The voyage, “for the West Indies and elsewhere,” started on 31 January and ended with *Industry*’s arrival back at Westport on 12 November 1816 with \$5552.82 in net proceeds (Hall and Sowle 1914, p. 31). On 31 March 1817, Captain Clark received “eighty-three dollars toward my share of oil obtained in Brig *Industry*” (Hall and Sowle 1914, p. 32).

It was three brigs, “*Industry*, *Almy*, and *Mexico*, known as the father vessels” that “fostered the growth of the stores, and to these belongs the credit that Westport Point became a famous whaling town” (Hall and Sowle 1914, p. 27). Alexander Starbuck’s compendium in 1878 provides a succinct record of 21 voyages starting with the 1816 voyage with no details other than sailing under the command of Captain Clark (Starbuck 1878, pp. 218–291; Federal Writers’ Project 1938, p. 79). However, a contemporary newspaper account noted that the same-named “Schooner *Industry*...about two days ago, spoke brig *Industry*, with 670 bbls. Oil, from Cape de Verd Islands, blowing fresh, could not learn further particulars” (The Charleston *Daily Courier*, 16 November 1816, p. 2). An 1817 voyage under Captain Matthew Mayhew to the Atlantic grounds, departed 1 June and returned in May 1818 with 250 barrels of sperm oil (Starbuck 1878, pp. 224–225; Federal Writers’ Project 1938, p. 197).

Sailing again under Matthew Mayhew's command to "Cape de Verde" in July, *Industry* returned to Westport in May 1819 with 300 barrels of sperm oil (Starbuck 1878, pp. 226–227; Federal Writers' Project 1938, p. 197). Sailing to the Atlantic grounds under Captain [Robert?] Emery in August 1819, *Industry* returned on 10 May 1820 with only 12 barrels of sperm oil (Starbuck 1878, pp. 230–231; Federal Writers' Project 1938, p. 121). Reported sailing under Captain Cory in June 1820 for the Western Islands (the Azores), *Industry* returned on 24 March 1822 from "Cape De Verdes" (Starbuck 1878, pp. 234–235, 238–239; Federal Writers' Project 1938, p. 99).

Industry departed under the command of Captain Parker for the Western Islands (Azores) in May 1822 and returned on 9 July 1823 with 400 barrels of sperm oil (Starbuck 1878, pp. 244–245; Federal Writers' Project 1938, p. 235). The sale of *Industry*'s cargo was not as lucrative as hoped, according to a complaint made by the editors of the *National Gazette*:

Advance in the price of Oil – We understand that a sale of nearly 400 bbls. oil (cargo of brig *Industry*, just arrived) took place last week, at the advanced price of 45 cents per gallon, and was purchased by Mr. Samuel Judd of New York. We hope this necessary article will soon command its original prices. There have been brought into this port, since the 22d of February last – of whale, elephant and black whale oil, 23,846 bbls; of sperm oil, 11,595 bbls. – total of the whole, 35,411. Of the latter there are probably 10,000 bbls. On hand – the price of this has varied from 75 to 40 cents since October. That of whale commands about 25 cents, very little of which is now on hand. (*Philadelphia National Gazette*, 21 July 1823, p. 2)

Under the command of Captain Bennett, *Industry* departed for Africa in 1823, returning 11 November 1824 with 230 barrels of sperm oil (Starbuck 1878, pp. 248–249; Federal Writers' Project 1938, p. 52) (Fig. 16). This was reported in the press; "NEW BEDFORD...Nov. 11...brig *Industry*, Bennett, from coast of Africa, 230 bbls. oil" (*The New York Evening Post*, 15 November 1824, p. 2). Some of the cargo was offered for sale in an advertisement in the *Philadelphia National Gazette* on 7 December; "a large supply of Winter, Fall Drained, and Cape Horn Whale Oil. Landing from brig *Industry*, from New Bedford, and sloop *Hazard*. From Nantucket, and for sale by Shober & Bunting, No. 26, South Wharves" (*Philadelphia National Gazette*, 7 December 1824, p. 3).

Sailing again under Parker, this time for the "Africa" whaling grounds that were widely spread along that continent's coast, *Industry* was advertised by Shober & Bunting as a "substantial fast sailing vessel" that was "to be dispatched immediately; from one to two hundred barrels will be taken, if immediate application be made" for hands who wished to ship for the voyage (*Philadelphia National Gazette*, 11 December 1824, p. 1). *Industry* returned 16 September 1826 with 350 barrels (Starbuck 1878, pp. 256–257; Federal Writers' Project 1938, p. 235). The newspapers reported the arrival date as the 19th; "Arr. At New Bedford 19th brig *Industry*, Parker, fr. Cape de Verdes with 340 bbls oil" (*Nantucket Inquirer*, 28 October 1826, p. 3).

Under the command of Owen Wilber, *Industry* sailed for the West Indies on 16 January 1827 and returned 13 September 1827 (Starbuck 1878, pp. 262–263; Federal Writers' Project 1938, p. 291). The arrival was noted in the papers; "NEW BEDFORD...Entered, brig *Industry*, Wilber, Gulf of Mexico," (*The Charleston Mercury*, 26 September 1827, p. 3). It returned to the Gulf in 1828 under Matthew Mayhew; "NEW BEDFORD, August 11—Arr. at Westport, in this district, on Saturday, brig *Industry*, Mayhew, from the Bay of Mexico" (*The Charleston Mercury*, 21 August 1828, p. 3).

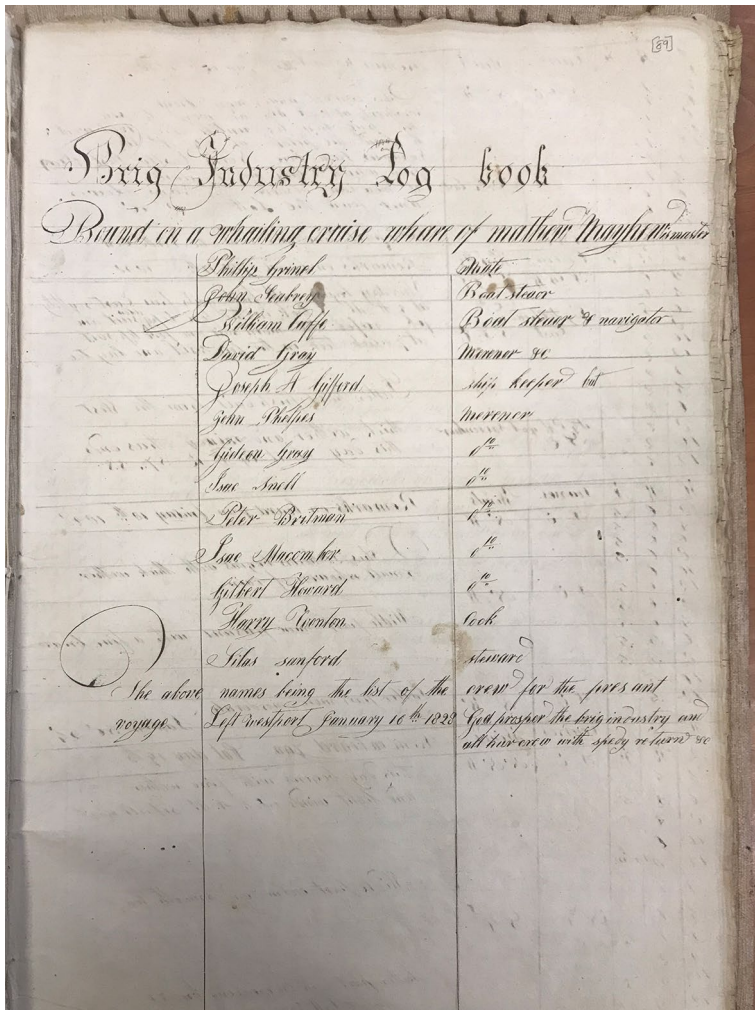


Fig. 16 Crew list from *Industry*'s 1823 logbook at the New Bedford Whaling Museum (James P. Delgado)

Again under the command of Matthew Mayhew, *Industry* sailed for the West Indies 4 January 1829 and returned 14 July with 160 barrels (Starbuck 1878, pp. 268–269; Federal Writers' Project 1938, p. 197). An abortive 1829 voyage under Captain Thomas C. Hammond, sailed for “Espirito Santo” (one of the Cape Verdes) on 17 August; however, *Industry* also sailed, this time under the command of John A. Cornell, to “Cape de Verdes” on 5 October, returning on 26 July 1830 with 240 barrels (Starbuck 1878, pp. 270–271; Federal Writers' Project 1938, pp. 98, 150). The aging *Industry* may have encountered problems on the first voyage, probably leaking, so Hammond put back for repairs, and was replaced by Cornell for a return to sea.

In August 1830, an account in the *National Gazette* noted that Captain Coffin of the ship *Lycurgus*, “from Liverpool for New Orleans” reported that while off the Florida coast they had “fell in” with a brig “showing American colors half mast as a decoy...a great many men about her deck, and one on each mast head looking out. She chased us about

five hours and then hauled close on the wind to the S.W.” (Philadelphia *National Gazette*, 6 August 1830, p. 1). Coffin feared that they had been chased by pirates. However, there was an explanation, “calculated in some measure to relieve the apprehensions of navigators in those latitudes,”

Capt. Cornell, of the whaling brig *Industry*, which arrived at Westport on Monday, states, that on the 3d. inst...the *Industry* leaking badly at the time, he saw a ship which he endeavored to speak for the purpose of being reported. After vainly attempting for several hours to get sufficiently near the ship, he relinquished his purpose. From the conformity of time and situation...there can be no doubt but that the *Industry* with her crew of *fourteen* persons [original emphasis] engaged in the pursuit of their honest avocation, was in the minds of those on board the *Lycurgus*, magnified into a force at least equal to that encountered by Sir John Falstaff at Gadshill. “A hundred upon poor 4 of us.” (Philadelphia *National Gazette*, 6 August 1830, p. 1)

Industry was clearly in need of more serious repairs than had evidently been done between the aborted voyage of Captain Hammond and that of Captain Cornell.

In 1831, *Industry* sailed, now under Captain George Soule, to “Cape de Verdes” and returned 4 November 1831 with 220 barrels (Starbuck 1878, pp. 284–285). On that voyage, in company with the brig *Mentor*, also of Westport, “after an unsuccessful cruise of several weeks,” were making their way “northward” from the Caribbean. The two vessels were not close to each other when *Mentor* was caught in a sudden squall and capsized. The captain and most of the crew escaped, but three of the crew were killed. The survivors, in two boats, made for *Industry*, but could not find it, which led the survivors to “fear she must have shared the same fate as the *Mentor*,” but in three days’ time were rescued by the ship *Panama* (The *Charleston Mercury*, 16 June 1831, p. 2).

The news account noted that *Industry* had been spoken at sea by another vessel while at sea on 31 May at “lat. 37, lon 74” some 95 nautical miles due east of the mouth of Chesapeake Bay and heading north. Following the usual pattern of North Atlantic whalers, *Industry* was likely heading for the Grand Banks to hunt before returning home. *Industry*’s return to Westport was reported in the papers, first with a brief mention “WESTPORT, Nov. 4 – Arr brig *Industry*, Soule, Cape de Verds” (The *Charleston Mercury*, 17 November 1831, p. 2) and then a more detailed report:

NEWPORT, Nov. 8 – Arr. Brig *Industry*, Sowle, of and for Westport, from a 5 months whaling voyage off the Cape De Verd Islands, and last from Isle of Sal 30 days, with 220 brls. sperm oil. (The *Charleston Mercury*, 12 November 1831, p. 2)

Again under Captain Sowle [Soule], *Industry* sailed at the end of March, 1832; “NEW BEDFORD, March 28...Cleared, brig *Industry*, Soule, Cape de Verds,” (Charleston *Daily Courier*, 7 April 1832, p. 3).

Industry returned on 19 October 1832, with 130 barrels (Starbuck 1878, pp. 292–293), with the arrival again noted in the press. “Arr at Westport, 19th inst. brig *Industry*, Seule [sic], from a whaling voyage, with 130 bbls. Oil” (Philadelphia *National Gazette*, 24 October 1832, p. 3). *Industry* sailed again under George Soule to the Atlantic on 4 April 1834, returning 14 November (Starbuck 1878, pp. 308–309; Federal Writers’ Project 1938, p. 259). The arrival was again duly noted; “WESTPORT Nov 14 – ar brig *Industry*, Soule, fm Western Islands with 210 bbls oil” (*Boston Post*, 19 November 1834, p. 2).

The next voyage, under Hiram Francis’ command, sailed for the Atlantic on 17 April, returned with unrecorded results. The outward bound manifest for *Industry*, dated 17 April, notes that the intent was a voyage of “Atlantic Ocean whaling,” and that *Industry* carried

seven casks of pilot bread, 40 barrels of provisions, 450 oil barrels and casks, three boats, towline, “and other articles sufficient for a whale voyage for fourteen months together with small stores” (National Archives). The crew list for the voyage survives with the notations as listed as written down at that time (Table 4).

Industry was “spoken” or hailed at sea in the Western Islands in late April with “50 bbls. Oil” (Nantucket *Inquirer*, 10 October 1835, p. 3). It was again spoken in mid-September by the brig *Thomas Winslow*, which reported it, under Hiram Francis’ command, with 125 barrels of oil (Nantucket *Inquirer*, 7 November 1835, p. 3). On 9 October, it was spoken with 140 barrels of oil.

Industry changed captains in late 1835 or early 1836 for at that stage David Sowle, the first mate, assumed command of *Industry*, replacing Hiram Francis. Francis, who had first crewed on *Industry* in 1831, had at last risen to command but it was brief; his departure from the command of *Industry* prior to its return to Westport suggests he either returned home on another ship or remained on *Industry* but not as captain. In late 1836, he was back in Westport and assumed command of the brig *Elizabeth* after it returned from its whaling voyage that sailed from Westport on 14 June 1835. On that earlier voyage, *Elizabeth* was under the command of Francis’ half-brother George Sowle. Back in Westport by mid-1836, Hiram Francis took *Elizabeth* back to sea under his command on 1 August 1836, and returned with it to Westport on 7 May 1837 (Starbuck 1878, pp. 332–333). Starbuck’s assumption that *Industry* may have returned to Westport in late 1835 and then sailed again under Sowle is therefore likely incorrect (Starbuck 1878, pp. 318–319; Federal Writers’ Project 1938, p. 132).

While still at sea under George Sowle, *Elizabeth* encountered *Industry* in the Gulf of Mexico, off the Balize, the prominent delta of the Mississippi River, and well known to mariners (Fig. 17). They were sailing in close proximity as many ships did:

For three weeks prior to the time of her loss she had experienced a season of beautiful weather...but on the evening of the 26th a violent squall came up, bringing a

Table 4 *Industry* crew list, 17 April 1835 (National Archives, RG36)

Name	Birthplace	Residence	Citizen	Age	Height	Complexion	Hair
Hiram Francis	Westport	Westport	U.S				
David Sowle	Westport	Westport	U.S	29	5' 8¾"	Light	Brown
Stephen Tripp Jr	Westport	Westport	U.S	26	5' 4½"	Light	Brown
Elijah R. Cartino	Westport	Westport	U.S	26	5' 3½"	Dark	Brown
Admiral W. Tripp	Westport	Westport	U.S	21	5' 7¼"	Dark	Black
Timothy Little	Westport	Westport	U.S	18	5' 8½"	Light	Brown
Ezra J. Gifford	Westport	Westport	U.S	22	5' 5¼"	Light	Brown
John L. Anthony	Westport	Westport	U.S	18	5' 5½"	Dark	Black
Peleg Tripp	Westport	Westport	U.S	15	5' 2½"	Dark	Brown
Jethro Sowle	Westport	Westport	U.S	16	5' 3½"	Light	Brown
Job B. Pitts	Westport	Westport	U.S	18	5"¾"	Light	Brown
Holden Tripp	Westport	Westport	U.S	22	5' 8"	Black	Curley
Charles Hall	Newport	Westport	U.S	39	5' 5"	Black	Curley
Samuel Sowle	Westport	Westport	U.S				
Milton H. Young		Westport	U.S				

severe gale...After beating the billows till midnight, the *Industry* was thrown upon her beam ends, and all her boats were carried away save one. The crew...all took to the remaining boat and pulled away for the lights of the brig *Elizabeth*...then about two miles distant, where they arrived in safety. They had been in company with the *Industry* for several days. (New Bedford Gazette, 20 June 1836, p. 3)

The next day, the two crews sighted *Industry* a mile distant, but with the gale still blowing, Capt. Sowle of *Elizabeth* “thought it imprudent to go nearer to her:”

She seemed to have righted, though her stern was stove-in, her bows wrench open, the mainmast entirely, and the foremast nearly gone. Nothing could be saved from the wreck. Had it not been for the company of the *Elizabeth*, no doubt all the crew of the *Industry* would have been swallowed up in the deep. This unfortunate brig sailed from Westport in April, 1835, had been out about thirteen months at the time of the disaster, and had taken 310 bls. of oil. (New Bedford Gazette, 20 June 1836, p. 3)

While *Elizabeth* did not approach and salvage from *Industry*, the brig *Harmony* and the brig *Thomas Winslow* did board the wreck, and the crew of *Harmony*, as previously noted, “took off 230 bbls. oil, part of sails and rigging, chain cable and anchor” (Charleston Daily Courier, 11 July 1836, p. 2). This account references a substantial stripping of the dismantled hulk.

Elizabeth, now crowded with two crews, quickly sailed from the Gulf to reach home port in Westport after the rescue. “At Westport 17th, brig *Elizabeth*, Soule, Bay of Mexico,



Fig. 17 Manuscript T-Sheet of the mouth of the Mississippi River, and the “Balize,” c. 1860. It was off the Balize, out to sea and northeast of the mouth of the river that *Industry* capsized, was stripped and subsequently sank (National Archives, 78116866)

375 bbls sp oil. Passengers Capt. Soule and crew of brig *Industry* of Westport, capsized May 26 off the Balize, with 310 bbl oil on board” (Nantucket *Inquirer*, 22 June 1836, p. 3).

In Bay of Mexico June 22, brig *Thos Winslow* of Westport, 140 sp 15 black fish oil. Spoke June 10, sch *Harmony*, Swain, Nant. 140 humpback – had fallen in 6 days previous with the hull of brig *Industry* of Westport (abandoned off the Balize, May 26) and after pumping out the water, took from her 230 bbl oil, sails, towlines &c. (Nantucket *Inquirer*, 13 July 1836, p. 3)

These final contemporary notices of *Industry* reflect the pragmatic business of whaling. The crew all returned home, as did all but 80 barrels of the oil rendered on the 13 month voyage, and a variety of valuable equipment and fittings that had salvaged by *Harmony*. Many of the crew returned to the sea; it was a living, and the accident that took *Industry* was a risk of the trade.

African Americans in the Whaling Trade and on *Industry*

In addition to *Industry*’s community ties, the brig, like many other American and local whalers of its time, was powerfully connected to the African-American maritime community. The voyages of *Industry* included African American crew members, a number of whom were children of marriages between enslaved and free blacks in the community and the neighboring tribes; there was a substantial Native American presence in the whaling industry, and this multicultural, multi-racial aspect must be recognized (see Button 2014). Among them was Pardon Cook of Westport, who participated as an officer and captain in at least 11 whaling voyages. Cook commanded “possibly more voyages as captain than any other man of color in the first half of the nineteenth century” (Gifford and Connors 2021; also see Putney 1987, p. 54). Cook first went to sea with his father-in-law, African-American whaling captain Paul Cuffe of Westport on *Traveller* in 1816 as second mate; he sailed with *Industry* as second mate in 1819 and again in 1821.

In all, Cook made 11 whaling voyages, “almost all as officer or captain...he was a major figure in the extended Afro-Indian community that supported each other to succeed in a society and economy that marginalized them” (Gifford and Connors 2021). Paul Cuffe’s whaling career began in 1775 when he shipped, “at the age of 16, as a common hand on board of a vessel destined to the Bay of Mexico, on a whaling voyage” (Cuffee 1811, p. 7). Another member of the Cuffe family, William Cuffe sailed on *Industry* in 1828 and 1832. He was Paul Cuffe’s youngest son. The “Cuffe dynasty” were actively engaged in whaling as well as other maritime enterprises (Malloy 1990, p. 6). Isaac Cory, Sr. and the Cory family were partners with Paul Cuffe in ventures with two of his vessels, *Hero* and *Traveler*, with Cory and Cuffe as part owners of each vessel.

The second to last known crew list for *Industry* offers details on the crew who shipped aboard the brig toward the end of its two-decade career. That having been said, this does not necessarily mean the same crew, in whole or in part, sailed on the second voyage in 1835 when the brig was lost in 1836. Throughout the lists available from 1816 to 1834, diversity among the crew is denoted by contemporary terms such as “dark” or “black,” with other individuals described as “yellow,” “black,” and “mulatto,” with “black,” “curley,” or “woolly” hair (see Malloy 1990, p. 3). These details, as well as the relatively young age of the crews, with many of the hands shipping being teenagers (but counted as “men” in that period) provide insight into the human side of the vessel and its crews and especially of the

diversity noted by contemporary authors and historians (Putney 1987; Bolster 1997; Finley 2020).

It is also important to note that the context of the multi-racial crewing of whalers like *Industry* was a powerful haven for African-Americans. As Button (2015, p. 76) notes:

In addition to mobility and independence, whaling also gave Native American and African American men alternative experiences of race, citizenship, and identity, which sometimes contrasted with the political marginalization of people of color at home. Whalers' experiences of diversity at sea could not be contained within familiar American stereotypes...For African Americans and Native Americans who were officially denied the full rights and responsibilities of citizenship in New York, maritime contexts were among the only spaces in which they could be recognized as Americans.

The question now follows: is Wreck 15563 the brig *Industry*, which storm-damaged, dismantled, and abandoned, was subsequently boarded and partially stripped of equipment, gear and many of its barrels of whale oil in June 1836 “off the Balize” east of the mouth of the Mississippi? Shipwreck 15563 lies in 1829 m of water off the mouth of the Mississippi River. This location, as will be noted later, is approximately 72 nautical miles (133 km) from the last logged position of the drifting and sinking whaling brig *Industry* in June 1836.

A Possible Identity: The Whaling Brig *Industry*

Based on the existing data, the evidence suggests that Shipwreck 15563 is a vessel lost in the Gulf within the first half of the nineteenth century. The seemingly unique aspect of the camboose *could* suggest a tie to whaling. The other characteristics of the vessel itself place it within the age and size of the only whaling vessel known to have been lost while in service as a whaler in the Gulf: the brig *Industry* of Westport, Massachusetts. What is documented about *Industry* conforms to the available data from Shipwreck 15563:

- (a) The hull form, lack of copper or yellow metal fasteners, and no copper sheathing are consistent with a vessel of that era and as a product of a small yard. *Industry*, built locally in the small shipyard of its principal owners, was constructed in 1815 as American shipbuilding and maritime trade began to slowly rebound from the disastrous impacts to them by the War of 1812.
- (b) *Industry* was not copper sheathed and the brig's logbooks and newspaper references often refer to its “leaky” nature as a result. There is no evidence of copper sheathing on Shipwreck 15563.
- (c) The wreck closely conforms to *Industry*'s length and beam.

Wreck 15563 L: 63 ft (19.2 m), *Industry*: L 64.4 ft (19.66 m)

Wreck 15563 B: 20 ft (6.1 m), *Industry*: B 20.2 ft (6.147 m)

- (d) The form of what appears to have been a shallow hull is consistent with a vessel with a tonnage (cargo capacity) like *Industry* at 94 26/95 tons. The cant frames at the stern are also indicative of a vessel built early in the nineteenth century, as this method of

hull construction declined in the U.S. during the first two decades of the nineteenth century and had disappeared by mid-century.

- (e) The wreck is that of a two-masted vessel with at least one topmast as indicated by the chainplates. *Industry* was a brig with two masts. The “chain” noted in the report of salvage from the drifting wreck of *Industry* likely reflects the recovery of some of them, as the standard at that time was hemp cable, and “cable” is noted in the salvage account.
- (f) *Industry* foundered in the Gulf of Mexico after being abandoned in a storm in May 1836. The abandoned wreck, still adrift and water logged, was boarded by the crew of the whaler *Harmony* of Nantucket on 3 June 1836 at “lat. 27, 28 lon. 89, 20,” which is 72 nautical miles (133 km) from the location of Shipwreck 15563.
- (g) The proximity of the wreck (72 nautical miles) to the last recorded location of the water-logged *Industry* might reflect the ultimate sinking through a water column over a mile deep of a drifting, gradually flooding vessel, but partially kept afloat by the cargo of whale oil, caught in the loop current in this part of the Gulf. This reported location is south-southwest of the position of Wreck 15563 on the seabed. The loop current runs north through the strait between the Yucatan Peninsula and Cuba into the Gulf toward the mouth of the Mississippi where it turns sharply east and runs back south along the edge of the Florida Escarpment before moving out through the Strait of Florida. Variations and loop eddies shift this pattern seasonally. However, the general pattern of the loop current does suggest that a drifting vessel at the reported location is likely to have been pushed north by this dominant current.
- (h) One anchor is missing, and the wreck has few visible portable artifacts. One cask’s outline was spotted in the silt, along with the anchors, which are out of place as they are not at the bow, the bottles and the minute glass. While some artifacts are doubtless obscured or buried in the silt, this is a strikingly empty wreck. *Harmony*’s captain reported that after his crew had pumped out or “freed” *Industry*, they “took off 230 bbls. oil, part of sails and rigging, chain, cable and anchor,” and noted that one of the brig’s boats was missing, and that while the ship’s papers were left on board, “one compass only was found in her binnacle.” The lack of artifacts and the misplaced anchors can be the result of burial and shifting during the sinking process, or the result of the efforts of *Harmony*’s crew to salvage what they could from a sinking *Industry*.
- (i) The visible alcoholic beverage bottles, while not collected, appear to be black glass spirits, ale/porter/cider glass beer bottles with bulged heels and lips, indicative of cylindrical bottles of the late eighteenth to early nineteenth century that lasted into the 1830s (Jones 1986, p. 91).
- (j) *Industry* was fitted with an iron camboose in 1827. The camboose on the wreck is of a type contemporary to that time period. It is, based on the available material archaeological evidence, unique and while small, its configuration resembles that of a tryworks. This is both peculiar and fascinating.

On smaller vessels, the limited deck space, especially for whalers, saw the placement of cambooses and tryworks on the larboard (port) side of the foredeck to accommodate the placement of the windlass aft of the foremast to assist in hauling a whale alongside for flensing and rendering (Dyer 2022). This arrangement is shown in an 1830s water-color of a small whaling ship underway. The location of the camboose on the wreck is on the port side and directly adjacent to the chainplates for the foremast. This indicates that the wreck’s forward configuration is like that shown in the painting. While this in

itself does not indicate that the wreck is that of a whaler, it is another piece of evidence in a chain of observations in the material record that suggest that this could be a wreck of a small whaling vessel.

In summary, the wreck's characteristics indicate a small, locally built, economically constructed and maintained vessel in a hard-worked trade. That is consistent with *Industry's* documented career. Out of 214 documented whaling voyages into the Gulf of Mexico from the late eighteenth to the late nineteenth century, only one ended in shipwreck and loss in the Gulf of Mexico. That was *Industry's* last voyage in 1835–1836. The accounts of the loss and subsequent salvage are few, but they do suggest that the dearth of artifacts, as well as the size, form, and dating of the visible hull structure and fittings may be an archaeological signature of the stripping of Wreck 15563 as the possible *Industry*.

The account of *Harmony* when it encountered the wreck of *Industry* afloat, drifting in the Loop Current, indicates that *Industry* did not capsize, and this is shown in that ship's papers, a compass in a binnacle, and other items and equipment were found on the wreck that would have fallen free had the vessel capsized. As well, the crew of *Harmony* "took off 230 bbls. oil, part of sails and rigging, chain cable and anchor" (*Charleston Daily Courier*, 11 July 1836, p. 2). It is not known if this is a comprehensive record of what was salvaged. Another account, in the *Nantucket Inquirer and Mirror*, reported that the brig *Thomas Winslow* had spoken *Harmony* on 10 June 1836, and Captain Swain of *Harmony* reported that they had "fallen in 6 days previous with the hull of brig *Industry* of Westport, (abandoned off the Balize, May 26) and after pumping out the water, took from her 230 bbls oil, sails, towlines, etc." (*Nantucket Inquirer and Mirror*, 13 July 1836, p. 3).

These few details include a key observation of boarding the "hull," which means *Industry* had been dismantled by the storm that wrecked it. Taking off 230 of 310 barrels of whale oil hastened the end of the wrecked brig. The buoyancy of the oil, in its casks, and trapped below deck, had kept it afloat even when flooded. When the hull reflooded, there was not much left to keep *Industry* afloat. When *Industry* finally sank, likely not long after *Thomas Winslow* boarded it at an unknown position, but drifting in the Loop Current, it sank as a somewhat stripped vessel, shorn of its masts, chain plates possibly torn free in some places, one anchor removed, and a variety of gear also undoubtedly rescued. Again, this is likely what is reflected in Shipwreck 15563, with few visible artifacts.

If Wreck 15563 is *Industry*, the camboose's close association, lying on the bricks would suggest that it was encapsulated by tryworks bricks, suggesting intense heat with usage, even if only at certain times. In an otherwise seemingly stripped hull, the presence of the camboose is an anomaly. A camboose on its own would have been too tempting an item to not salvage, given it wouldn't have been much heavier than a bower anchor and chain; which are not on the site. Given the encapsulation of the camboose, regardless of whether it is or is not *Industry*, if this wreck was partially salvaged, recovering the camboose would have been too labor intensive—and possibly dangerous, given the vessel's listing hull—to dismantle the entire assembly. The archaeological evidence suggests the assemblage of bricks was indeed associated with the camboose, and argues for it being used either exclusively as a tryworks, or as a dual-use stove/tryworks.

All of the evidence is sufficient to posit a *preliminary working hypothesis* that Wreck 15563 could be the wreck of *Industry*. Separate from that working hypothesis, the shipwreck's remains represent a direct physical link to American maritime trade on the Gulf of Mexico of the early to mid-nineteenth century. While the majority of the wooden hull has been consumed by natural site formation processes, the archaeological documentation suggests an intact lower hull, as well as visible remains of the vessel, rigging, anchors, ballast, and other features that include the unique camboose.

Whaling Ships in the Maritime Archaeological Record

Despite the large number of American ships engaged in offshore (pelagic) whaling from the late eighteenth through the end of the nineteenth century, with a smaller number of whaling ships engaged in the industry in the early twentieth century, very few American-built, and American-flagged whaling ships have been identified in the archaeological record. These include whalers lost in foreign waters; off Western Australia, and documented by the Department of Maritime Archaeology at the Western Australian Museum, the whalers *North America* (1840), *Samuel Wright* (1840), *Cervantes* (1844), and *Day Dawn* (1886) (McCarthy 1980; McAllister 2013; also see Lawrence and Staniforth 1998; Raupp 2015, p. 22), three possible American whalers at Pohnpei, potentially destroyed there by the CSS *Shenandoah* in 1865 (Raupp 2015, p. 23), the former China trader, later whaler *Niantic*, built in 1835, converted into a whaler and subsequently converted to a beached storeship in Gold Rush San Francisco, where it burned in 1851, leaving the lower hull intact (Delgado 2009, pp. 114, 121–160) the previously mentioned *Lydia* in San Francisco, *Stamboul*, at Benicia, California (Delgado 1988), *Two Brothers* (1823) and *Parker* (1842) in the Northwestern Hawaiian Islands, and the fragmentary remains of perhaps as many as six whalers lost off the North Slope of Alaska in 1871 (Barr et al. 2016).

The maritime archaeology of whaling and whalers has focused not only on the characteristics of the whaling ship as a class of vessel, but also on the differences inherent in whaling ships as opposed to other vessels. Whalers were essentially floating factories that evolved from smaller to larger craft that in time spent a year or more at sea, housing the crew, who lived and worked within the confines of the ship, and on the water as they pursued, hunted, killed, and processed whales into oil, baleen, and on occasion whale bone:

Of course, in elementary form whalers are like other wooden sailing vessels of the period; solidly-built wooden hulls, sturdy masts and spars, extensive standing and running rigging, and expansive sail patterns all provided their basic features. But the difference between wrecked whaleships and other vessels lies in the interpretation of their function and purpose. Early nineteenth-century whaleships were often purpose-built, housed specific technological features that clearly distinguished them from other ships and they performed the function of catching and processing whales; thus, they present an opportunity to investigate a specific industrial process and workplace as opposed to another merchant vessel or warship. (Raupp 2015, p. 25)

Beyond this, and the particulars of maritime industrial technologies inherent in whaling shipwreck sites, such as the evolution of the devices used to hunt and process the whales, such as harpoons, flensing tools, and tryworks, is a focus not only on the particularism of past approaches to maritime archaeological sites, but also to the aspects of whaling ships as floating communities and workplaces.

The interpretation of shipwreck sites specifically as ‘maritime industrial workplaces’ has the potential to contribute a new approach to maritime archaeological research. As a research concept the industrial workplace incorporates the technical and social components of industrial sites in its analyses and attempts to provide the most complete picture possible through the use of documentary and archaeological sources. By looking at associations between sources of raw materials, methods of processing, transportation, and the social context of production, a holistic understanding of the relationship between the various components of sites can be gained. (Raupp 2015, pp. 26–27, citing Palmer and Neaverson 1998, pp. 4–5)

Through this lens, Raupp, in assessing the archaeology of *Two Brothers* and *Parker*, has adopted an industrial archaeological approach in addition to the maritime, and assesses the maritime industrial workplace, maritime resource extraction, and maritime industrial seascapes, drawing on Palmer and Neaverson (1998) but also archaeological approaches to extractive industries such as Hardesty's work on mining (Hardesty 1988, 2010). A key element of this approach is "research agendas that are more considerate of industrial culture and which attempted to explain sites as places where people performed work rather than simply as the remnants of production" (Raupp 2015, p. 33).

Raupp's (2015, p. 37) explanation of how this translates into practical and theoretical application of maritime archaeology to whaling shipwreck sites is succinct and apt:

As with frontier mining, pelagic whaling required a high degree of organization, effort, and coordination at all stages to succeed in extracting raw materials and transporting them to markets. At its center, shipboard whaling involved a series of complex and interconnected processes that were conducted by a crew who lived and worked within the close confines of a relatively small platform for several years at a time. The industrial technologies employed on these ships were specific to whaling and the ships themselves can be considered as one technological component.

Specifically, whaling vessels were tightly encapsulated industrial work spaces:

Early nineteenth-century whaleships were unlike other contemporary ships in that they were working platforms on which technological and social processes combined to allow for the extraction of raw materials from the marine environment. Much like the site complexes associated with primary resource extraction industries on land, in order to achieve commercial success they relied on sets of interrelated and standardized practices specific to the industry. Thus, analysis of a pelagic whaleship as a maritime resource extractive industry requires an understanding of the ship and how it provided the platform on which whaling operations took place, as well as the gear needed to carry out the specific processes involved in hunting and capturing sperm whales, processing blubber, storing whale oil, and transporting it. (Raupp 2015, p. 37)

The type of hull for American whaling ships evolved in the early nineteenth century. The well-preserved, intertidal, and later buried in beach sand wrecks of the early nineteenth century whalers *Samuel Wright* (1840), *North America* (1840), and *North America* (1843) in Koombana Bay, Australia, excavated and studied in 2011, with comparative data from other wreck sites provided significant data for nineteenth-century American built whalers, which by c. 1840 were larger, three-masted, broad-beamed, bluff bowed, heavily built vessels (McCarthy 1982; McAllister 2013, pp. 81–83).

Within the context of a floating industrial facility the archaeological potential of a site such as Wreck 15563, as the possible *Industry*, would be diminished due to a set of extractive filters that saw the removal of certain aspects of its industrial use and function. If it is *Industry*, a flooded hold would also make extraction by salvagers difficult. Excavation of this site is the only means by which to answer questions about what this wreck represents. The excavation of what lies beneath the sediments in the lower hull of Wreck 15563, if it is *Industry*, could include casks or barrels, as the outline of one is visible in the sediment. Excavation might reveal other tools. Additionally, the archaeologically intact nature of the lower hull offers opportunities for assessment of the allotment of space for various functions, and social, hierarchal analysis of shipboard organization and function.

To Be Or Not To Be?

From an industrial archaeological perspective, the question remains as to what the camboose on Wreck 15563 represents. It is not a traditional tryworks, defined by conventional wisdom of the period as the term for a large construction of two pots or kettles encased in brick with large fires built with wood on grates that the pots were suspended above to render blubber into oil. The amount of brick on Wreck 15563 is insufficient for that style of tryworks which usually required as many as 3000–3500 common bricks to build. There is no trace of the two large trypots or other hardware.

The papers of the Cory family, the majority owners of *Industry*, include records of expenditures and purchases and one expenditure shows that they leased two cambooses from Peter Grinnell & Son for 11 months at \$45 and \$55 each in June 1822 and returned the \$45 leased camboose on 3 August. Another indicates that in July 1825, they paid William West \$29.30 for “building try works” with 3000 bricks. In 1827, the outfitting for *Industry* notes it was fitted with an iron camboose (Cory Family Papers, New Bedford Whaling Museum). As the records for the brig do not date past 1829, the final configuration of *Industry*’s tryworks in 1835–1836 is unknown.

They may have been a brick and trypot combination, possibly with one 200 gallon pot. Tryworks were constructed for a single voyage; at the conclusion of a voyage, with the bricks cracked and soaked with whale oil residue, the tryworks was dismantled and the bricks thrown into the sea, leaving only the trypots. No strangers to iron “cambooses,” it is also possible that the Cory family, drawing on the experimental, diverse nature of iron stove design and manufacture in the period, fitted *Industry* with an iron tryworks in 1827, perhaps as a more permanent investment that gave them two trypots on a smaller, efficient but outdated whaler. This is, however, entirely speculative.

If this is *Industry*, was the tryworks one of the things taken apart and salvaged when *Industry* was boarded and stripped twice by different vessels? If so, why was the camboose not taken? Occasionally the whaling logbooks reference the term “try camboose.” The Nantucket Historical Association holds some 400 logs of whalers, and 13 of them reference a try camboose. The sense is that they are referring to the brick encased iron try pots and not a separate cast iron stove. However, is there the possibility that smaller whalers might have used a small cast-iron stove?

Is it strictly a shipboard stove that is merely configured like a tryworks? Is it a hybrid tryworks? If so, with its small size, it could be used to cook and when needed would be an effective means for trying out smaller catch. As noted previously, Gulf whalers hunted blackfish, or “pilot whales,” and oceanic dolphins “on an opportunistic basis,” the killing and trying out of these smaller marine mammals was “a typical feature of whaling for sperm whales in the Gulf” (Reeves et al. 2011, p. 50). Some 400 of these animals were struck, processed, and added to the stores of oil in each whaler’s hold full of barrels as determined by a modern analysis of their logbooks because they were a frequent target of Gulf whalers (Reeves et al. 2011, p. 50).

Would the amount of labor and fuel to get a large, traditional tryworks with two large capacity pots going be worth it for a single porpoise? The historical record is silent other than to note that whalers had tryworks *and* cambooses. The reality is that in the age of iron, by 1840 over 20,000 patents had been issued for stoves, and most of the records of those patents are lost. As well, the whaling ports, especially Nantucket and New Bedford, were both centers of ship-smiths—blacksmiths and machinists—who

while not casting try-pots (which came from iron foundries) did a variety of other smith-work for whalers (Lytle 1984, pp. 161–162).

In 1860, a cast-iron “Mechanical Try-Works” was patented by J. Morrison Hunter of New York:

While the blubber was held at high heat in a boiler, a press contained within the boiler applied pressure to expel the oil. The invention was to yield a higher percentage of oil and to try it out more rapidly. Hunter’s tryworks was constructed with a sheet-iron furnace into which was horizontally placed a semi-cylindrical boiler. The furnace had a fireplace at one end, a flue that ran under the length of the boiler, and a smoke pipe at the end opposite the fireplace...two large iron doors at the top of the boiler allowed access for introducing blubber...Inside the boiler was a crib made of metal bars or tubes...The crib also acted to confine the blubber while it was being pressed...The pressing arrangement inside the boilers, also claimed as a patented feature...consisted of a threaded shaft running through the length of the boiler and press heads. (Lytle 1984, pp. 162–164).

While “there is no record of a whaleship using Hunter’s mechanical try-works,” the patent and its surviving patent model speak to the ongoing innovation of ship-smiths and machinists in the age of iron (Lytle 1984, p. 165).

The original supposition that led to the examination of Wreck 15563 was the possibility that the feature that looked like a tryworks might be tryworks. Prior to the public (and media-observed) dive assessment, the science team ashore asked that any discussion of whaling or specifically of *Industry*, which at that time research had shown was the only whaler known to have been lost in the Gulf, not be mentioned. Unfortunately, an enthusiastic and well-meaning member of the team mentioned the name and whaling. For the public, and the ensuing media, while we had consistencies, this was likely *Industry*. But the wreck may not be *Industry*.

There was and there remains no smoking gun, but the camboose might be more than the standard camboose. The camboose may be a simpler design that coincidentally was configured as a tryworks and not a hybrid. The subject of camboose patents, designs and variations on ships is little studied. There is simply not sufficient information or comparative archaeological data on cambooses. The hypothesis of *Industry*, which was the size and age of the wreck, and not yet proved nor disproved, nonetheless opens a virtual door into an historical aspect of American maritime endeavor in the Gulf of Mexico in the nineteenth century, as well as the complexities of interracial crews on American whaling ships. These are worthy topics for research and discussion regardless of what future archaeology and archival research might say about Wreck 15563. A return to this site and test excavation is warranted, as it is for other sites in the amazing deep-sea museum of nineteenth-century shipwrecks in the Gulf of Mexico.

Acknowledgements We thank the original teams that led the work on these wrecks, our colleagues from Fugro, C-Innovation, and BOEM. We also thank NOAA’s Office of Ocean Exploration and Research, the Global Foundation for Ocean Exploration, and the various team members from various agencies who participated as “doctors on call” for the telepresence mission to Wreck 15563. We are particularly grateful to the team at BOEM, especially Scott Sorset, Doug Jones, Chris Horrell, and Melanie Damour, and now-retired friend and colleague Jack Irion. The reanalysis we did on Wreck 15563 was completed as part of a BOEM-funded study of nineteenth-century shipwrecks in the Gulf, and is drawn from an historical context study and National Register of Historic Places nominations for that wreck. Research on *Industry* and Gulf whaling can only follow in the wake of the extensive research of Judith Lund and colleagues; we are grateful to Judy for her support and guidance as we researched the specifics of *Industry*. Michael Dyer, Curator at the New Bedford Whaling Museum, and the library and archives staff were exceptionally helpful, as was

Paul O'Pecko, Vice President of Collections and Research at Mystic Seaport, who opened the archives and library as well as a return to *Charles W. Morgan* to again examine its tryworks. Robin Winters of the Westport Free Public Library conducted extensive research and became a valued member of the Wreck 15563 team, and her ongoing research at the Nantucket Whaling Museum was exceedingly helpful. We are grateful to Jenny O'Neill of the Westport Historical Society, to local historian Ray Shaw of Westport, Nathaniel Wiltzen, Archivist at the National Archives at Boston, and the staff at the Hagley Museum and Library in Wilmington for their opening the archives to access records of early iron founding and cambooses. The anonymous peer reviewers of this article also provided excellent feedback, additional observations and sources for which we are very grateful.

Author contributions James Delgado wrote the majority of the article; Michael Brennan made substantive edits and added text.

Declarations

Conflict of interest The authors have no competing interests as defined by Springer, or other interests that might be perceived to influence the results and/or discussion reported in this paper.

Open Access This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

- Anonymous (1840) Awful calamities: Or, the shipwrecks of December, 1839, being a full account of the dreadful hurricanes of December 15, 21 & 27, on the coast of Massachusetts; in which were lost more than 90 vessels, and nearly 200 dismasted, driven ashore or otherwise damaged, and more than 150 lives destroyed, of which full statistics are given; comprising also a particular relation of the shipwreck of the following vessels; Barque Lloyd, Brigs Pocahontas, Rideout & J. Palmer, and Schrs. Deposit, Catherine Nichols and Miller. And also of the dreadful disasters at Gloucester, 3rd edn. Press of J. Howe, Boston
- Arthur Y (1863) Nautical dictionary defining the technical language relative to the building and equipment of sailing vessels and steamers, seamanship, navigation, nautical astronomy, naval gunnery, maritime law and commerce, general and particular average and marine insurance, and other terms relating to maritime affairs, 2nd edn. Longman, Green, Longman, Roberts & Green, London
- Ashley CW (1926) The Yankee whaler. Houghton Mifflin Company, Boston
- Atwood NE (1887) The whale fishery of Provincetown. In: Goode GB (ed) The fisheries and fishery industries of the United States, section V, volume II. Government Printing Office, Washington, DC, pp. 144–145
- Barr B, Delgado JP, Lawrence MS, Van Tilburg HK (2016) The search for the 1871 whaling fleet of the Western Arctic: writing the final chapter. *Int J Naut Arch* 46(1):149–163. <https://doi.org/10.1111/1095-9270.12205> Accessed 12 March 2022
- Biddlecomb Capt G (1848) The Art of Rigging, Containing an Alphabetical Explanation of Terms and Phrases, and Directions and Operations; To Which Are Added, Tables of the Relative Strength of Chain and Hempen Cables; Also, the method of progressive method of rigging together with copious tables of the quantities and dimensions of the standing and running rigging, expressly adapted for merchant-shipping and Yachts. Charles Wilson, London
- Bolster WJ (1997) Black Jacks: African American seamen in the age of sail. Harvard University Press, Cambridge
- Braddock-Rogers K (1930) The bog ore industry in South Jersey prior to 1845. *J Chem Educ* 7(7 July):1493–1519

- Brennan ML, Cantelas F, Elliott K, Delgado JP, Bell KLC, Coleman D, Fundis A, Irion J, Van Tilburg HK, Ballard RD (2018) Telepresence-enabled maritime archaeology in the deep. *J Mar Arch* 13:97–121
- Brewer PJ (2000) From fireplace to cookstove: Technology and the domestic ideal in America. Syracuse University Press, Syracuse
- Brown JR (1850) Etchings of a whaling cruise, with notes of a sojourn on the island of Zanzibar. To which is appended a brief history of the whale fishery, its past and present condition. Harper & Brothers, New York
- Burström M (2017) Ballast: Laden with history. Nordic Academic Press, Lund
- Button E (2014) A family affair: whaling as native American household strategy on eastern Long Island. *New York. Northeast Hist Arch* 43, Article 6. <http://orb.binghamton.edu/neha>. Accessed 2 Mar 2022
- Button E (2015) Navigating difference: the archaeology of identities at an American whaling port. Ph.D. dissertation, Department of Anthropology, Brown University
- Clifford H (1997) Patents for portability, cooking aboard ship, 1650–1850. In: Walker H (ed) *Food on the move: Proceedings of the Oxford symposium on food and cookery 1996*. Prospect Books, Blackawton, Devon, pp 52–63
- Cory Family Papers, Mss. 80, Group 1, Series 1, Sub-Series 14, Industry (Brig) Records, New Bedford Whaling Museum
- Cotsell G (1856) *A treatise on ships' anchors*. John Weale, London
- Crapo HH (1836) *The New-Bedford directory, containing the names of the inhabitants, their occupations, places of business, and dwelling houses. And the town register, with lists of the streets and wharves, the town officers, public offices and banks, churches and ministers, physicians and surgeons, and other useful information. To which is added the by-laws and ordinances of said town. Also, a list of whale ships, belonging to the United States*. J.C. Parmenter, Printer, New-Bedford
- Cuffee P (1811) *Memoir of Captain Paul Cuffee, a man of colour*. Egerton Smith & Company, Liverpool
- Curryer BN (1999) *Anchors: an illustrated history*. Naval Institute Press, Annapolis
- Davis LE, Gallman RE, Gleiter K (1997) In pursuit of Leviathan: technology, institutions, and profits in American whaling, 1816–1906. University of Chicago Press, Chicago
- Diman GW (1896) *Autobiography and sketches of my travels by sea and land*. Press of the Semi Weekly Bristol Phoenix, Bristol
- Delgado JP (1988) National Register of Historic Places Inventory/Nomination Form. Stamboul/Whaling Bark Stamboul, Benicia
- Delgado JP (2009) *Gold rush port: the maritime archaeology of San Francisco's waterfront*. University of California Press, Berkeley
- Dyer MP (2022) Curator of Maritime History, New Bedford Whaling Museum, personal communication to Judith Lund, 11 Mar 2022
- Federal Writers' Project (1938) *Whaling masters: American guide series*. Old Dartmouth Historical Society, New Bedford
- Finley S (2020) *Whaling captains of color: America's first meritocracy*. Naval Institute Press, Annapolis
- Gifford R, Connors T (2021) Captain Pardon Cook of Westport. <https://paulcuffee.org/2018/02/23/captain-in-pardon-cook-westport-richard-gifford-tony-connors/>. Accessed 2 Mar 2022
- Goode GB (1887) *The fisheries and fishery industries of the United States, section V, history and methods of the fisheries, volume II*. Government Printing Office, Washington DC
- Hall KS, Sowle MH (1914) *The village of Westport Point, Massachusetts*. E. Anthony & Sons, New Bedford
- Hardesty DL (1988) *Mining archaeology in the American West: a view from the silver state*. Society for Historical Archaeology, Pleasant Hill
- Hardesty DL (2010) *The archaeology of mining and mining Sites: a view from the silver state*. University of Nebraska Press, Lincoln
- Harris HJ (2008) Inventing the U.S. stove industry, c. 1815–1875: making and selling the first universal consumer durable. *Bus Hist Rev* 82(1):701–733
- Harris HJ (2009) "The stove trade needs change continually:" Designing the first mass-market consumer durable, 1810–1930. *Winterthur Portfolio* 43(4):365–406
- Hawes CB (1924) *Whaling*. Doubleday. Page & Company, Garden City
- Hegarty RB (1964) *Birth of a whaleship*. New Bedford Free Public Library, New Bedford
- Horrell CE (2017) Analysis of the Mardi Gras shipwreck ship's stove. *Hist Arch* 51(3):359–378
- Irion J, Cantelas F, Delgado JP, Borgens A, Hanselmann F, Horrell CE, Kiene W, Gittings S, Brennan ML, Caporaso A (2014) The Monterrey Wrecks: characterization of three early 19th century shipwrecks in the Gulf of Mexico. *Oceanography* 27(1):30–31
- Jones OR (1986) *Cylindrical English wine and beer bottles, 1735–1850*. National Historic Parks and Sites Branch, Parks Canada

- Kirby HS (1860) Memorandum of whaler's outfits. A. Taber & Brother, New Bedford
- Lawrence S, Staniforth M (1998) The archaeology of whaling in Southern Australia and New Zealand. The Australian Institute for Maritime Archaeology, Special Publication 10:7
- Lever D (1819) The young sea officer's sheet anchor; or a key to the leading of rigging and to practical seamanship. With an appendix containing several figures illustrative of novelties and improvements in rigging &c &c. M Carey and Sons, Philadelphia
- Lund JN, Josephson EA, Reeves RR, Smith TD (2010) American offshore whaling voyages 1667–1927. Old Dartmouth Historical Society New Bedford Whaling Museum, New Bedford
- Lytle TG (1984) Harpoons and other whalecraft. The Old Dartmouth Historical Society Whaling Museum, New Bedford
- Malloy M (1990) African Americans in the maritime trades: a guide to resources in New England. Kendall Whaling Museum Monograph Series No. 6, The Kendall Whaling Museum, Sharon, Massachusetts
- McAllister M (2013) "Stout, Sturdy and Strong": a construction typology for early nineteenth-century American whalers. M.A. thesis, Department of Archaeology, Flinders University
- McCarthy M (1982) Koombana Bay Wrecks: an investigation of wrecks in the bay, for the State Energy Commission of WA. Western Australian Museum, Fremantle
- McCarthy M (2005) Ships' fastenings: from sewn boats to steamship. Texas A&M University Press, College Station
- McCarthy M (1980) Excavation of the Barque Day Dawn: The excavation and identification of the wreck of an ex-American whaler in Cockburn Sound by the Maritime Archaeological Association of WA 1976–1977. Western Australian Museum, Fremantle
- Murphy JM, Jeffers WN (1849) Nautical routine and stowage, with short rules in navigation. Henry Spears, New York
- Ossowski W (ed) (2008) The General Carleton shipwreck, 1785. The Polish Maritime Museum in Gdańsk, Gdańsk
- Palmer M, Neaverson P (1998) Industrial archaeology: principles and practice. Routledge, London
- Putney M (1987) Black sailors: Afro-American merchant seamen and whalers prior to the Civil War. ABC-CLIO, Santa Barbara
- Raupp JT, Gleason K (2010) Submerged whaling heritage in Papahānaumokuākea Marine National Monument. *Bull Aust Inst Mar Arch* 34:66–74
- Raupp JT (2015) "And so ends this day's work:" industrial perspectives on early nineteenth-century American whaleships wrecked in the Northwestern Hawaiian Islands. Unpublished Ph.D. dissertation, Department of Archaeology, Flinders University
- Reeves RR, Lund JN, Smith TD, Josephson EA (2011) Insights from whaling logbooks on whales, dolphins, and whaling in the Gulf of Mexico. *Gulf of Mexico Science*. <https://doi.org/10.18785/goms.2901.04>
- Ritter A (1860) Philadelphia and her merchants, as constituted fifty @ seventy years ago, illustrated by diagrams of the river front, and portraits of some of its prominent occupants, together with sketches of character, and incidents and anecdotes of the day. Published by the Author, Philadelphia
- Schultz CR (1967) Costs of constructing and outfitting the ship Charles W. Morgan, 1840–1841. *Bus Hist Rev* 41(2):198–216
- Soper SR (1860) Logbook. Journal kept by Hiram Holmes aboard the schooner S.R. Soper of Provincetown, MA; Hiram Holmes, Master; 2 April 1860 to 11 Nov. 1860. Research Library, New Bedford Whaling Museum, New Bedford, MA. KWM 581
- Starbuck A (1878) History of the American whale fishery. Published by the Author, Waltham
- Steffy JR (1994) Wooden ship building and the interpretation of shipwrecks. Texas A&M University Press, College Station
- Stone EM (1860) Mechanics' festival. An account of the seventy-first anniversary of the Providence Association of Mechanics and Manufacturers, held in Howard Hall, on Monday evening, February 28, 1860, together with a sketch of the early history of the association, embracing its early proceedings in relation to manufactures, its action in reference to public schools, savings institution, temperance, and reform school, and brief notices of deceased officers. Knowles, Anthony & Co., Providence
- Survey of Federal Archives (1940) Ship registers of New Bedford, Massachusetts, vol 1: 1796–1850. Works Progress Administration/The National Archives Project, Boston
- Tower WS (1907) A history of the American whale fishery. John C. Winston Co. for the University of Pennsylvania, Philadelphia
- Underhill HA (1946) Masting and rigging: the clipper ship and ocean carrier. Brown, Son & Ferguson, Glasgow

- Weiss HB (1974) Whaling in New Jersey. New Jersey Agricultural Society, Trenton
- Wilde-Ramsing M, Anglely W, Lawrence RW, Scofield GJ (1997) The Rose Hill Wreck: historical and archaeological investigations of an eighteenth century vessel at a colonial river landing near Wilmington, North Carolina. Underwater Archaeology Branch, Division of Archives and History, North Carolina Department of Cultural Resources, Kure Beach
- Wilkes C (1844) Narrative of the United States exploring expedition, during the years 1838, 1839, 1840, 1841, 1842, Vol. V. C. Sherman. Philadelphia

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.