2003 Season:

The 2003 season focused on material cultural study delineated in the Project methodology. A requirement in the title granted to PILHA and Serbousek by the Middle District Court in Orlando for the alleged *Commodore* wreck site stipulated PILHA conserve and preserve all recovered artifacts including those already recovered and those still on the site. The 2003 work sought to organize, number, photograph, document, stabilize, and assess the artifacts in PILHA's care. During the 2002 season a quick assessment of all artifacts currently in PILHA's possession showed problems with the collection. Two site dives were also planned for 2003 to assess the site's preservation and the amount of slump observed where the engine meets the propeller shaft; a problem first noted when 2002 photographs and video were compared with images taken ten years prior to the 2002 field season.

The following problems guided the 2003 work. First, the artifacts housed in wet storage were galvanically coupled with one another and their tags via stainless steel wire. Stainless steel wire was wrapped around each artifact and connected to the numbered tags. The rifle concretions, pipe concretions, and what is believed to be an electrical relay were degrading at an accelerated rate. The problem was rectified immediately, but the tags associated with many artifacts were missing and needed replacement (See Figure 14).

The artifacts in wet storage, those in the archives, and those on display were disintegrating. Visitors and staff routinely reported new damage to artifacts on display

Figure 14: Ship's frame, concreted rifle, and assorted ferrous concretions in wet storage at Battel Laboratory. Serbousek recovered these objects in the 1990s and have been in wet storage ever since. Many of the tags were missing prior to the 2003 assessment project. (Image courtesy Ponce Inlet Lighthouse Association 2002)

or in storage. At one point in 2003, a shellacked rifle fell apart inside a display case as a visitor was walking past. Artifact degradation needed resolution before further site work could be conducted.

The artifacts themselves lacked documentation when the 2003 season began. Few photographs, no drawings, and a minimal paper trail provided provenience or provenance information. Worse, many of the artifacts had never been identified making conservation impossible. Before conservation could begin or the artifacts could be displayed, documentation had to be resolved.

PILHA needed a conservation plan paired with an assessment process that could be handled by PILHA. A great deal of time was spent on this aspect of the process during the 2003 season. The artifacts in PILHA's collections had not been professionally assessed either at the time of their recovery from the *Commodore* site or since. In fact, no record existed showing how the artifacts had looked following their recovery or during the intervening decade.

When *Commodore* artifacts were brought to PILHA in 1996, they were delivered in cardboard boxes, empty paint cans, and Tupperware containers. In the intervening six years, the artifacts had never been studied by museum staff or moved to better storage. At the time of the 2002 field season, then curator Bud Solano was advised to begin moving all artifacts into an acid free environment. Curator Solano removed approximately half of the collection to museum quality containers prior to the 2003 documentation project.

Museum facilities at Ponce Inlet Lighthouse are less than ideal for stabilizing artifacts from a marine environment. The museum operates one of the few remaining complete light stations in the country. The 1887 outbuildings and major facilities originally associated with the tower are still on the grounds and used for exhibit spaces. The Principal Keeper's House has been PILHA's Museum of the Sea for almost twenty-five years. The house, built of brick with interior walls made of horsehair plaster laid directly on the brick, is highly susceptible to humidity and temperature changes. Adding to the problem are the 117-year-old windows, floors, and walls. Although the structure contains an HVAC system, the *Commodore* artifacts on display in the museum were degrading rapidly. The environmental conditions were being exacerbated by three things: first, the artifacts were displayed with brass hooks and nails; second, the artifacts underwent dramatic ultraviolet and heat fluctuations because of the case's proximity to a window; and third, some of the displayed artifacts were never conserved. The unconserved artifacts had been shellacked to demonstrate to visitors what "treasure" looked like before it was cleaned. An assessment of the artifacts in the display revealed the need to relocate most of them to a more stable environment while leaving them on display. Those that had not been conserved were removed from exhibit in 2003 and documented thoroughly (with the exception of the disintegrating rifle mentioned above) (See Figure 15).

Work in 2003 focused on resolving the problems associated with the artifacts already in PILHA's care. Archaeological staff completed artifact documentation photographs, scaled drawings, and artifact locations and assessments. During the first

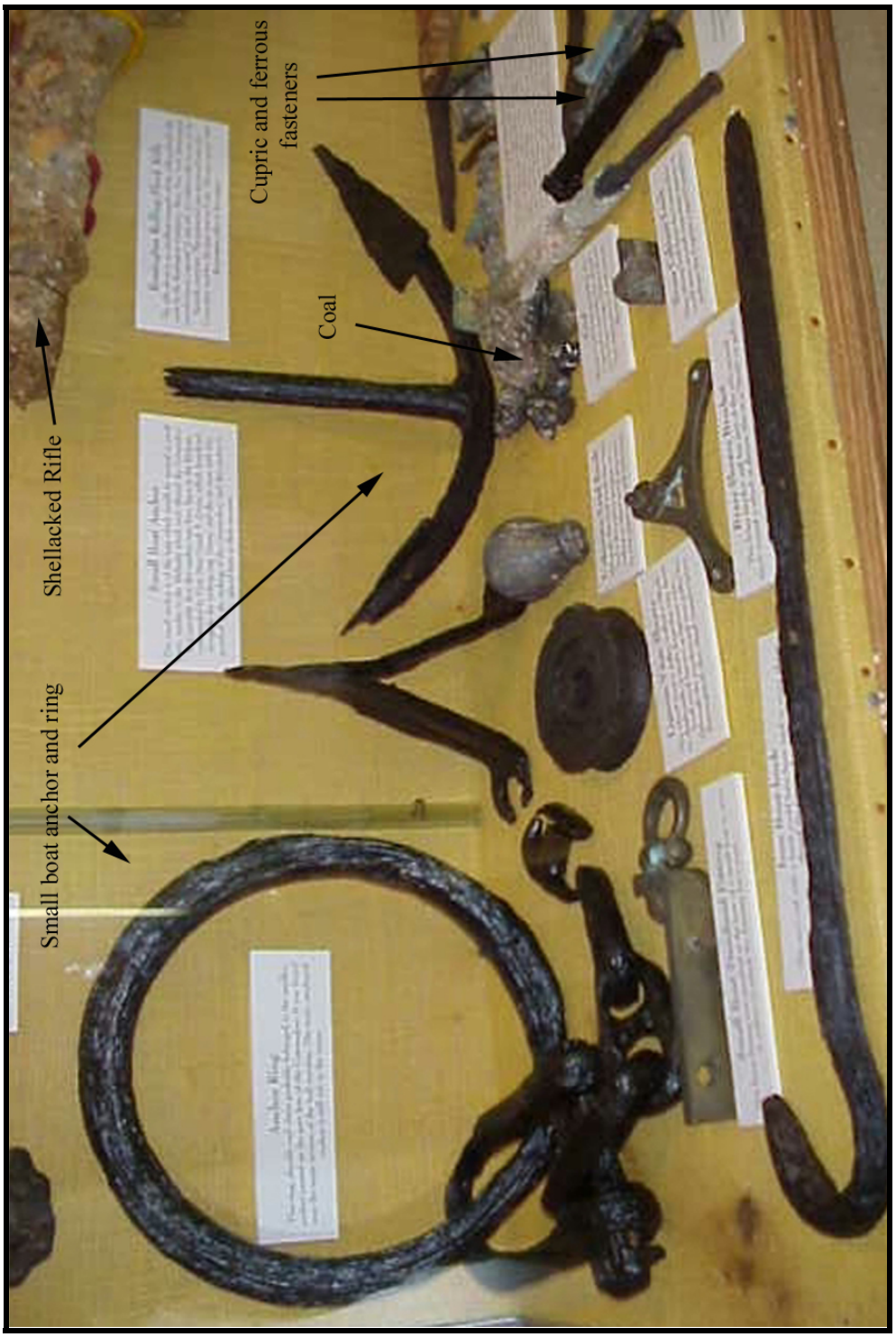

Figure 15: Prior to the 2003 assessment and survey, many of the site's recovered artifacts were displayed on acidic burlap without conservation or acid barriers. Note the shellacked rifle, anchor, and ring. (Author 2003)

week, approximately half of the collection in wet and archival storage was drawn, measured, labeled, photographed, stored appropriately, and its location noted. The second week project staff completed documentation of the wet storage artifacts and the remainder of the artifacts in archival storage.

Work focused primarily on identifying artifacts within concretions that should receive immediate conservation for preservation or display purposes. Degradation noted in 2002 had slowed dramatically in the intervening year. The removal of the stainless steel galvanic couple substantially slowed the artifact deterioration. Radiographs made by the Volusia County Sheriffs Bomb Squad in June 2002 proved several hypotheses true regarding concreted objects. The electrical relay, arguably the most complex artifact to conserve and document was radiographed at the same time that several rifles were x-rayed (See Figures 16, 17). These images have yielded better information about the internal workings of the Remington .43-caliber. For speed and accuracy the field crew first photographed each concretion or artifact taking care to record important features that would aid in tracking or identification in the future. These photographs were later downloaded to PILHA's digital archive for future use. The artifact or concretion was then drawn to scale, with the diagnostic surface being the one drawn. If an artifact presented several diagnostic surfaces, they were all drawn until a documentary record existed for the artifact. In the case of the electrical relay, for example, four views of the artifact were sketched in the hopes of preserving the piece when it is completely disassembled for conservation. Once the artifacts were photographed and drawn, the tag already included in the photo and drawing was attached to the artifact. The tag was made

Figure 16: Volusia County Sheriffs Office Bomb Squad technicians prepare to radiograph the electrical relay. Because of the artifact's complex construction information about its interior interested archaeologists and conservators. (Image Courtesy Ponce Inlet Lighthouse Association 2002)

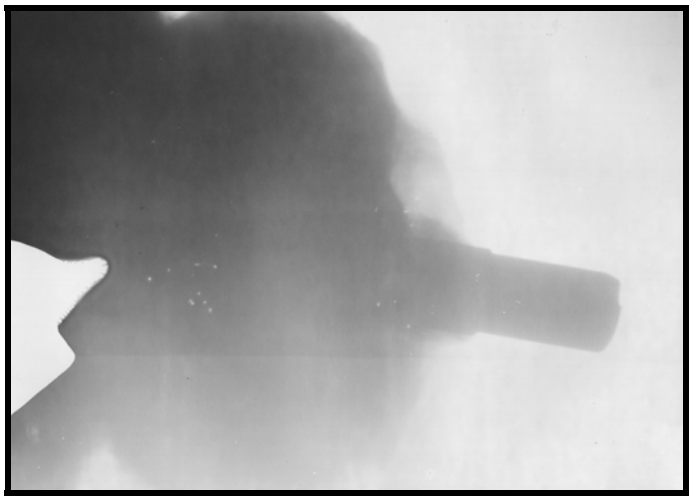

Figure 17: Radiograph of electrical relay. The denseness of the relay makes it impossible to view the inside, but a sleeve can be seen to the right where the shaft reenters the relay. Images like this will prove beneficial when conservation begins. (Image courtesy Ponce Inlet Lighthouse Association 2002)

of mylar and contained the new accession number for the collection, artifact, and date. Both the field logs and artifact database contain the artifact numbers so artifacts can be tracked in the future. These tags are still attached to the concretions in wet storage and the artifacts in curatorial storage. The two-week project resulted in 226 artifacts being assessed, 111 pages of field drawings and 254 individual drawings.

The research design called for one or two days of dives on the site believed to be the *Commodore*. The goal of the dives was to ascertain the state of site preservation by documenting major changes to the site through measured drawings, visual survey, locating the missing bower anchor, and measuring the height of the engine's reduction gears from the sand and comparing the measurement to the previous year's data. Survey to the aft of the engine and along the western edge of the debris field was dedicated to finding the anchor noted by Morrisette, Jan Neal, John Lane, and Don Serbousek over the years. Unfortunately, none of the divers relocated the bower anchor. The weather, fickle as always in May, cooperated for one day of dive operations allowing the author, Matthew Muldorf, and former Volusia County Reef Team diver Denise Morrisette to survey the site over the course of two dives.

The archaeologists noted further boilerplate concretion damage where fresh rust blooms were starting. Comparison of sketches with the 2002 video also showed damage that was less than a year old. Indications of looting were also present on the site. Aft of the steam engine a square hole approximately 3 ½ feet on a side and 3 feet deep had been dug. Although the site is frequently used by fish for nests, the hole was clearly man made. The divers also used reels forward of the engine to search again for artifacts or

hull debris where the bow should be. Surveys in 2002 failed to discover any wreckage forward of the engine, but in 2003 a single piece of cuprous pipe was found 25 feet forward of the engine and was left *in situ* indicating the presence perhaps of ship's structure previously unrecorded. The only recovery of the expedition was the removal of monofilament line left on the site by sport fishers.

The 2003 fieldwork ended in May, but further work on the site and with the artifacts over the summer by the author corroborated an important hypothesis. Project personnel believed local recreational divers looted the *Commodore* site in May 2002. During the winter of 2002-2003, a noted deep-water diver and author contacted project staff to obtain the positioning numbers for the *Commodore* site and requested photographs for use in a new book. When denied the photos and GPS coordinates, the individual advised PILHA and project staff that the numbers were in his possession and would be published with whatever photos he took. Notified by PILHA and archaeological staff that he would be liable for damage caused by publishing the site's latitude and longitude coordinates, and be charged with trespassing, the diver backed off the publication. Unfortunately, it was clear that the site coordinates were in general circulation after twenty years of secrecy. PILHA and project staff feared evidence of looting would be discovered during their next dive in the spring of 2003. Neither PILHA nor project staff were wrong. Beginning in May 2003 and continuing through September, man-made holes were found on the site by archaeologists and Reef Team members alike. It is unknown what artifacts may have been removed from the site. This unfortunate consequence of archaeological enquiry on a site hidden in plain view for

decades is redefining how PILHA and archaeological staff educate the public and local dive shops about the site. Notably, the local dive shop owners are actively working with PILHA to protect the site and are stakeholders in conserving the site.

Despite a successful project in 2003 and copious documentation of the artifacts, little fieldwork at the site was accomplished. The 2003 project gave PILHA a much needed conservation baseline concerning the artifacts within its care. All the artifacts loaned or donated to PILHA since 1996 had been assessed, drawn, photographed, and assigned an accession number. Each artifact had been carefully studied, and the assessment was given to PILHA to guide future conservation efforts. Dives at the wreck site resulted in the knowledge that the site's coordinates were clearly known within the maritime community.

2004 Season:

With the close of 2003, PILHA and project staff believed two major goals needed to be met in 2004: engine mapping for site identification and conservation protocols. If possible, PILHA and project staff wanted to begin conservation of artifacts in 2004. The question of the site's identity had not been resolved; staff believed that if the engine could be matched to the ship's *Registry* specifications a good case could be made to identify the site as *Commodore* (See Figure 19). With those goals in mind, a 2004 proposal was made to PILHA and a research design crafted.

In 2004, one day was allotted to record the vessel's propulsion system. In April, three archaeologists from LAMP dived the *Commodore* site and focused on obtaining

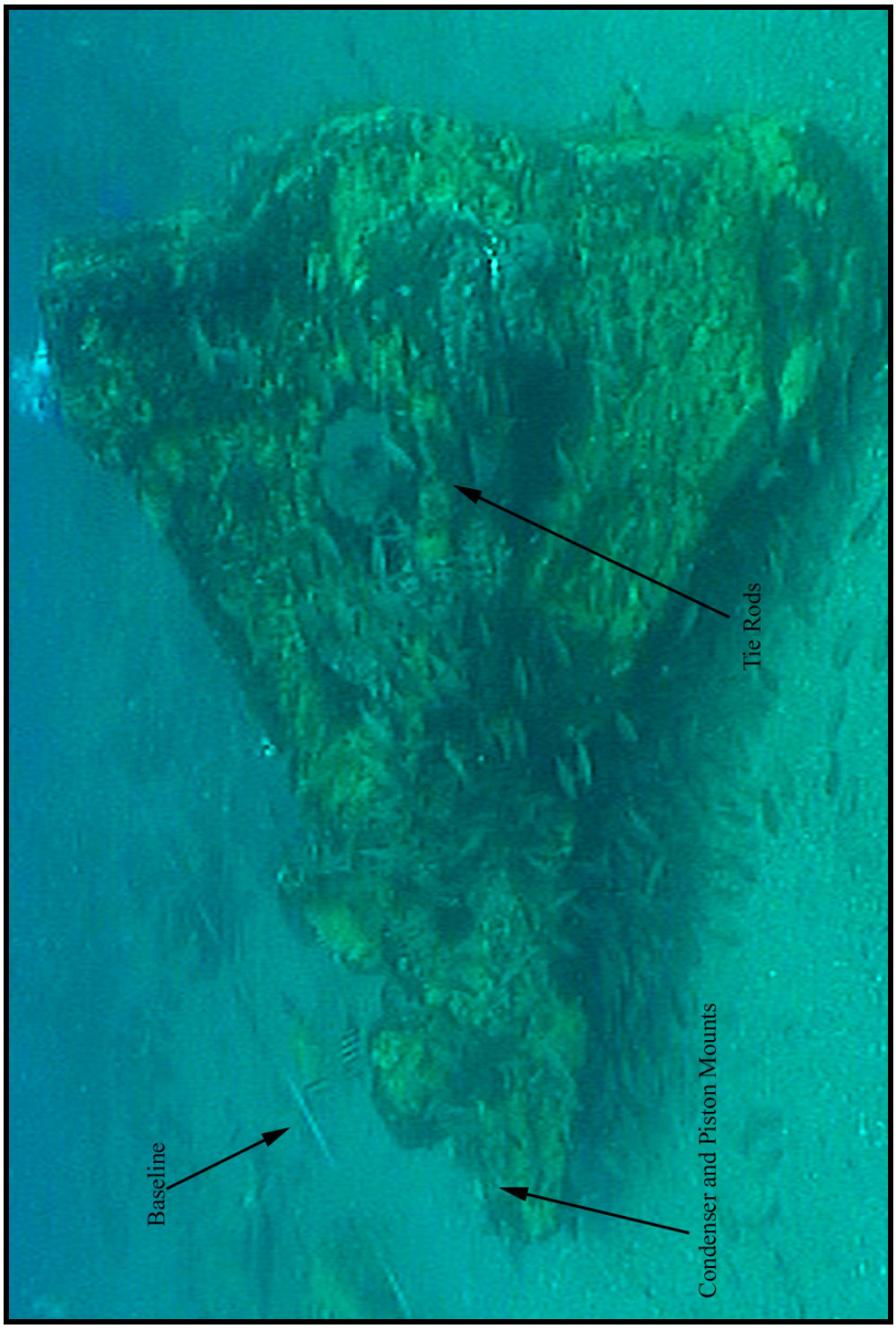

Figure 18: Looking aft to the engine. Note the engine's sideways orientation. The piston and condenser mounts lie to starboard. Note the angle the engine is leaning at on the sand. (Image courtesy Rick Allen, Nautilus Productions 2002)

detailed measured drawings of the engine, the propeller shaft, and the propeller. The three areas were drawn in detail that was impossible on prior expeditions to the site because of bottom time limitations. The outcome of the one-day dive assisted in confirming the identity of the site.

John W. Morris, III, executive director of LAMP and the engine expert on the team, was responsible for mapping the engine in detail. Previous measurements of the engine had relied on a combination of scaled sketches and video mosaics. Morris's measurements and drawing suggested a 36-inch stroke and a 24 to 27-inch bore. These measurements match closely with the *American Shipmaster's Record Association 1884 Registry*'s specifications of a 26-inch bore and a 30-inch stroke for *Commodore*'s engine.

Robin Moore, LAMP archaeologist and conservator, recorded the elevation and slump of the shaft, while drafting a detailed and accurate drawing of the shaft. Previous drawings of the shaft had been cursory sketches with minimal measurement. Moore's drawing focused heavily on the thrust bearings, stuffing box, and shaft. Since the 2002 field season the engine is under scrutiny by divers visiting the site. The angle between the sand and the engine continues to increase, and divers are asked to measure the "slump" for clues to the site's continuing degradation (See Figure 19). Moore's profile shaft view in conjunction with previous sketches allowed a better comparison point to study engine slumping.

The dive revealed a great deal of damage to the site apparently caused by anchoring activity. The site serves as an excellent habitat for game fish and a "sure spot" for the local charter fishermen. Anchoring activity between 2003 and 2004 damaged

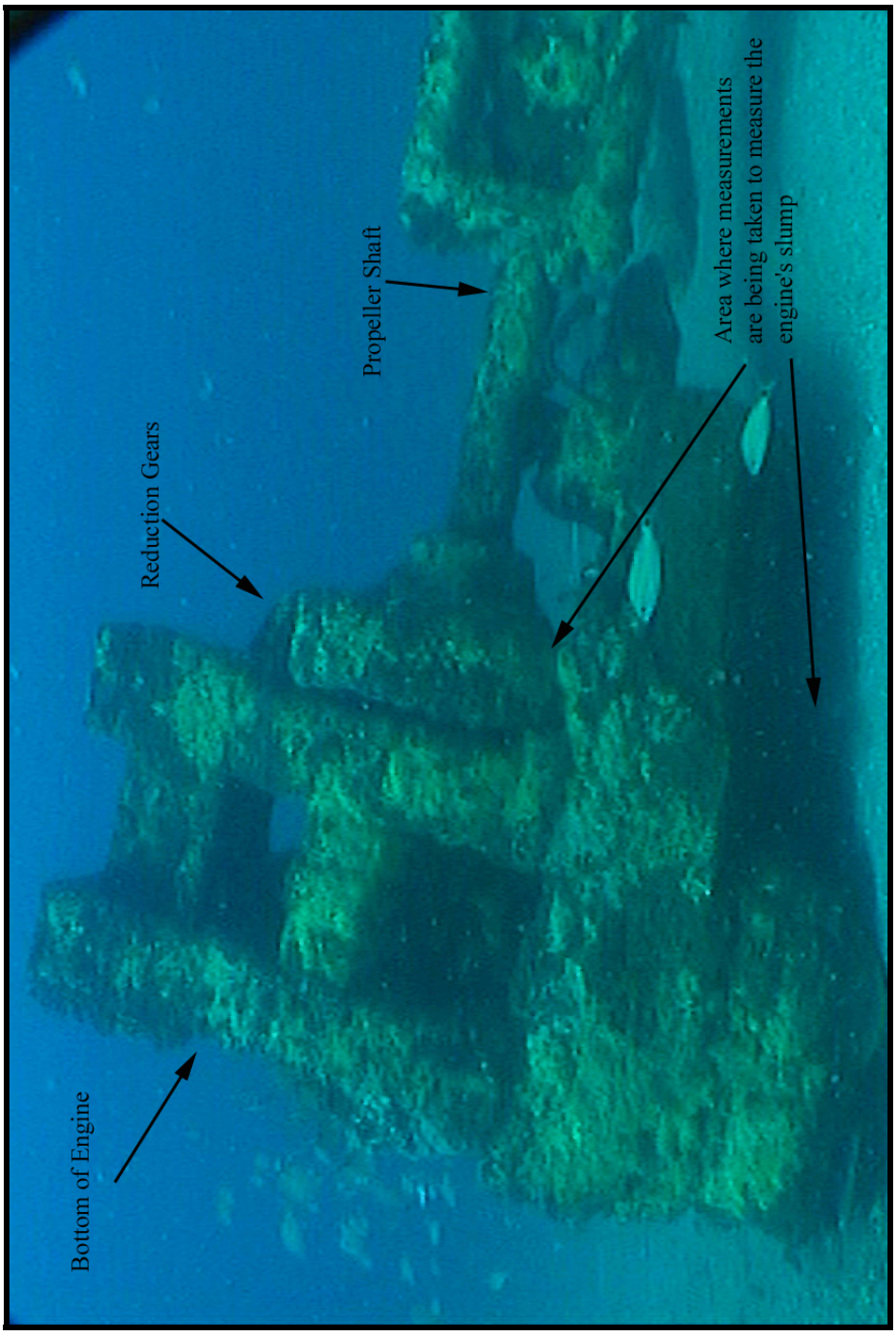

Figure 19: The engine and propeller shaft in side view looking to starboard. The area between the propeller shaft and engine shows evidence of the propeller shaft's collapse. Measurements of slumping are taken in this area. (Image courtesy Rick Allen, Nautilus Productions 2002)

much of the boilerplate. It appears that the damage is accelerating. Little looting damage was noted. It is possible that the dive was made too early in the season for looters to have been active on the site.

Findings:

A process of scouring and reburial is evident on the site. Minimal burial of major features on the site, and a greater exposure of the site in May 2002 and again in April 2004 indicate tremendous sediment transport. In February 2002 and May 2003, less of the site was exposed in comparison to the features observed in May 2002 and April 2004. At this time, it is impossible to say whether this is the result of winter storms, a particularly bad storm, or simply seasonal sediment transport. If there is a seasonal sediment transport over the site then portions of the site will be more readily accessible during particular times of the year. Studies of the sediment transport may help determine what artifacts are at higher risk. Certainly, the greater scouring around the engine, boiler, and propeller indicate current movement strong enough to carry sediment, but minimal current has been observed during three years of dives.

A minimal amount of wood was observed on the site during the 2002 and 2003 dives. The wood averaged 4 inches molded and sided. The wood has a close grain resembling oak and the exposed pieces have a great deal of deterioration from terredo worms. Unfortunately, because the wood is rarely visible and it is so poorly preserved it is difficult to know whether the remains represent framing components of the ship's lower hull.

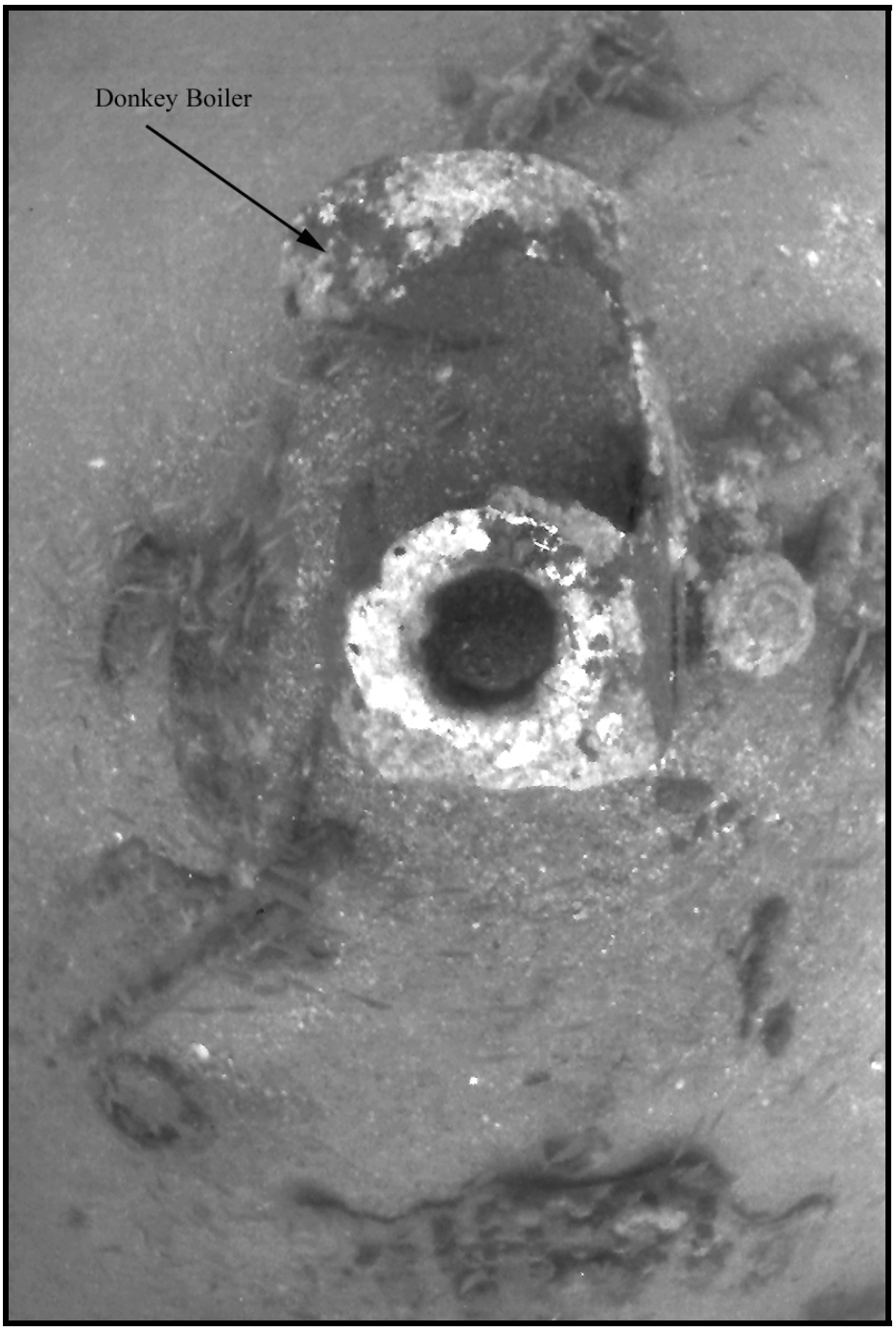

Figure 20: Plan view of the donkey boiler. Unlike the ship's main boiler which exploded when the ship sank, the donkey boiler shows no damage from the wrecking event. The donkey boiler sits surrounded by boiler debris. (Image courtesy Cindy Burnham, Nautilus Productions 2002)

The boiler found on site is too small to have supplied the necessary steam for the engine (See Figure 20). The small boiler is most likely a donkey boiler, which was used to power the windlass, pump, or heavy lifting equipment. The intact structure of the boiler may indicate it was not in use at the time the ship sank.

Other large iron plate found in large quantities near and aft of the engine may be the engine boiler's remains. The plate is riveted, and sections appear to have fire tubes running through them. All plate is heavily concreted with iron corrosion and marine growth except those pieces hammered by sport divers and anchors. If the ship sank during a winter storm in icy waters with a full head of steam as reported, it is likely the boiler exploded.

The engine and propeller assembly are the dominant features of the site. The propeller shaft is iron and appears sheathed in lead. The shaft supports both the engine and propeller remains. The shaft measures 28 feet from the engine to the propeller bushing. Sheathing is peeling from the shaft on the base and has collapsed at the propeller bushing. The propeller itself is a four bladed Loper wheel, a design prevalent on Philadelphia-built and Great Lakes vessels. The propeller's design allowed wooden vessels to be fitted with steam engines without damage to the hull. Discovery of this propeller paired with the absence of hull structure indicates the wreckage is associated with a wooden vessel.

The engine assembly is still under investigation. The largest feature on the site, the engine is 12.7 feet long by 10.4 feet high and 5 feet wide. The engine is a direct acting, single expansion engine. An engine plate identifying manufacture has yet to be

found and may exist beneath the sands surrounding the site. Compensating for concretion growth, corrosion, and the difficulty of measuring inside the engine, Morris agreed that his measurements matched the 26-inch bore and 30-inch stroke reported in the *American Shipmaster's Record Association 1884 Registry*. Much as modern day engines have unique specifications, so too did marine engines from different companies. The matching stroke and bore measurements between the archaeological site and the building specifications indicate that this engine belonged either to *Commodore* or to another Neafie and Levy engine. While extremely doubtful that another Neafie and Levy engine was lost off Daytona Beach, confirmation of the site's identity required matching the material culture to *Commodore*'s historical record. For the first time, proof beyond anecdotal material culture existed to confirm that the site is the lost filibuster SS *Commodore*.

Pieces of iron railing were found during the 2002 survey. The two sections are both located on the port side of the baseline between the engine and baseline. They are located near the 15 feet and 30 feet marks on the baseline. Both sections of railing are curved with supports dividing the railing. Their use is unknown, but the two sections may be part of a deck rail or part of a railing around the engine.

A partially concreted windlass was located on site at the 100-foot baseline mark. The windlass is still intact and may have pawls for stud link chain but no note was made during the 2002 survey. Observation of the windlass and the anchor chain nearby will occur during the next series of reconnaissance dives in 2005. The only anchor located on

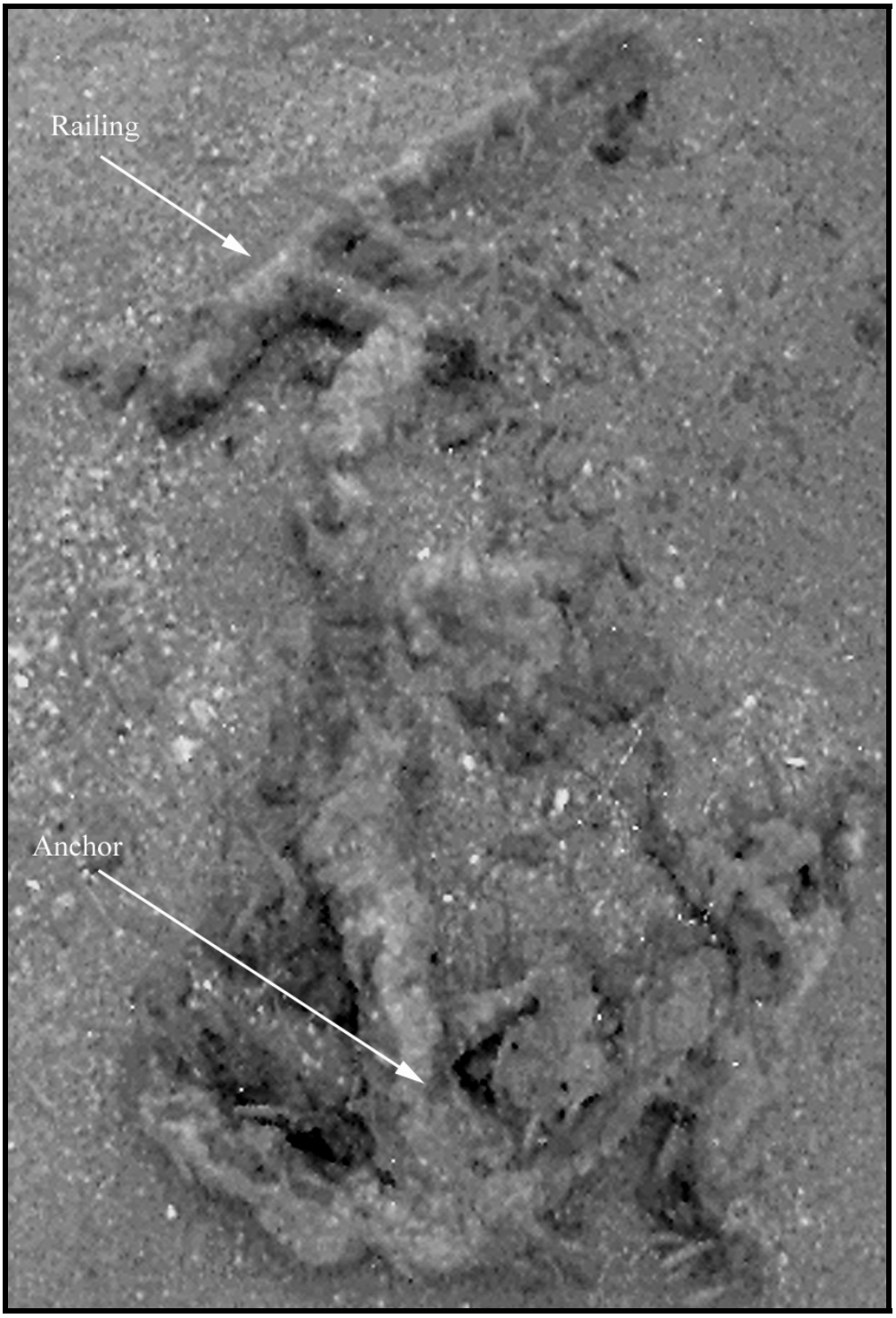

Figure 21: Small anchor and railing in plan view. The anchor lies on concreted chain in the center of the debris field. The large anchor seen by Reef Team members lies southeast of the site. (Image courtesy Cindy Burnham, Nautilus Productions 2002)

the site appears to be of wrought iron manufacture. The anchor measures 7 feet in length and approximately 4 feet across the crown (See Figure 21). The anchor is lightly concreted and lies on what may be anchor chain. Despite concretion growth, the anchor appears to be similar in form to an Admiralty anchor, but without a stock.

Two boxes of rifle cartridges were found during the May 2002 two-week field project. Both boxes were examined *in situ*, mapped and left undisturbed partially buried. The bullets match those already recovered from the site, but were found in new locations. Later site dives in 2003 and 2004 did not relocate the boxes suggesting perhaps that the boxes are either still safely *in situ* or have been removed by looters.

The *Commodore*'s material culture is primarily military or mechanical in nature. The *in situ* material culture is more diverse than the material culture housed at PILHA. The collection housed at PILHA contains the artifacts turned over to PILHA following the court ruling in 1998. Artifacts still *in situ* were either too large to recover (i.e. the engine), or had not been located by Serbousek. *In situ* material culture of interest for identification purposes are the engine, the propeller and shaft, the boiler remains, the donkey boiler and windlass, and the two crates of packaged ammunition. Material culture of particular interest for site identification housed in PILHA's collection includes rolling block rifles, bullets and cartridges, an Alfred Meakin plate, a clay pipe stem, and an A.B. Babbit bronze ship's block. The vessel and artifacts are addressed below.

Vessel Discussion:

The Neafie & Levy Yard built the tug *Commodore* with a wooden hull and steam propulsion. A tugboat needs to be sturdy and powerful. Although built of wood instead of steel, *Commodore* had a powerful direct acting single expansion steam engine. According to the registry information, the engine had a piston with a 26-inch bore and a 30-inch stroke and a single boiler (*American Shipmasters' Association 1888*:208). These dimensions match those of the engine at the *Commodore* site. Although the engine has been turned on its side either as part of the wrecking or as a function of storm surge (there is wear along a section of the engine suggesting the engine may rock on the sand), the piston and internal workings are intact. Matching the stroke and bore on the engine *in situ* with the engine specifications from the Neafie & Levy Yard corroborates the hypothesis that the site is *Commodore*. The April 2004 expedition proved the engine *in situ* matches the 1882 Neafie and Levy engine built for *Commodore*.

Commodore's wooden hull required a balanced propeller and shaft to avoid damage to the ship's hull. A four-bladed loper wheel (or Philadelphia Fly Wheel) was selected. Vessels are strained by the forces exerted upon the hull by the means of propulsion (Desmond 1999:35). Whether the vessel's means of propulsion is sail or steam, there are specific points where the ship will experience greater strain (Desmond 1999:35). *Commodore*'s screw propeller was designed to cause little to no transverse strain on the hull (Desmond 1999:35). Instead, the strain *Commodore*'s hull underwent related to the balancing of both the engine and the propeller. If either the engine or the

propeller were unbalanced, the effect on the hull would be similar to the transverse strain associated with sailing vessels (Desmond 1999:35).

The Philadelphia Flywheel or Loper Wheel was designed to bridge the gap between wooden hulls and steam technology. Using a four bladed propeller on a wooden ship provides a balanced propeller and one less likely to cause vibration. The propeller remains *in situ* at the *Commodore* site match the loper wheel design. The propeller's maximum preserved diameter measures 6 feet 1 inch. The measurement cannot be verified without uncovering the remains of the buried blades. Non-disturbance mapping and survey indicated that at least two and possibly three of the propeller's blades are sheared away, leaving approximately 20 percent of the blades available for study (See Figure 21).

The boiler remains, and small donkey boiler at the site support the documentary record. According to the registry records and merchant shipping lists, *Commodore* had a single boiler with its engine (*Sixteenth Annual List of Merchant Vessel of the United States for the year ended June 30, 1884*). Boilerplate remains litter the site around the engine and propeller shaft. The violent explosion causing the boiler to shatter requires extreme heat, poor workmanship, or the sudden cooling of a hot boiler. *Commodore*'s sinking in a January nor'easter provided water cold enough to shatter and explode a hot boiler. According to documentary sources, Captain Murphy ordered wood, alcohol, and coal into the boiler to keep it burning as he tried to get to Mosquito Inlet, assuring the boiler would have been exceptionally hot when the sea finally overwhelmed the pumps. Although no survivors discuss an explosion at the time of the ship's sinking, the

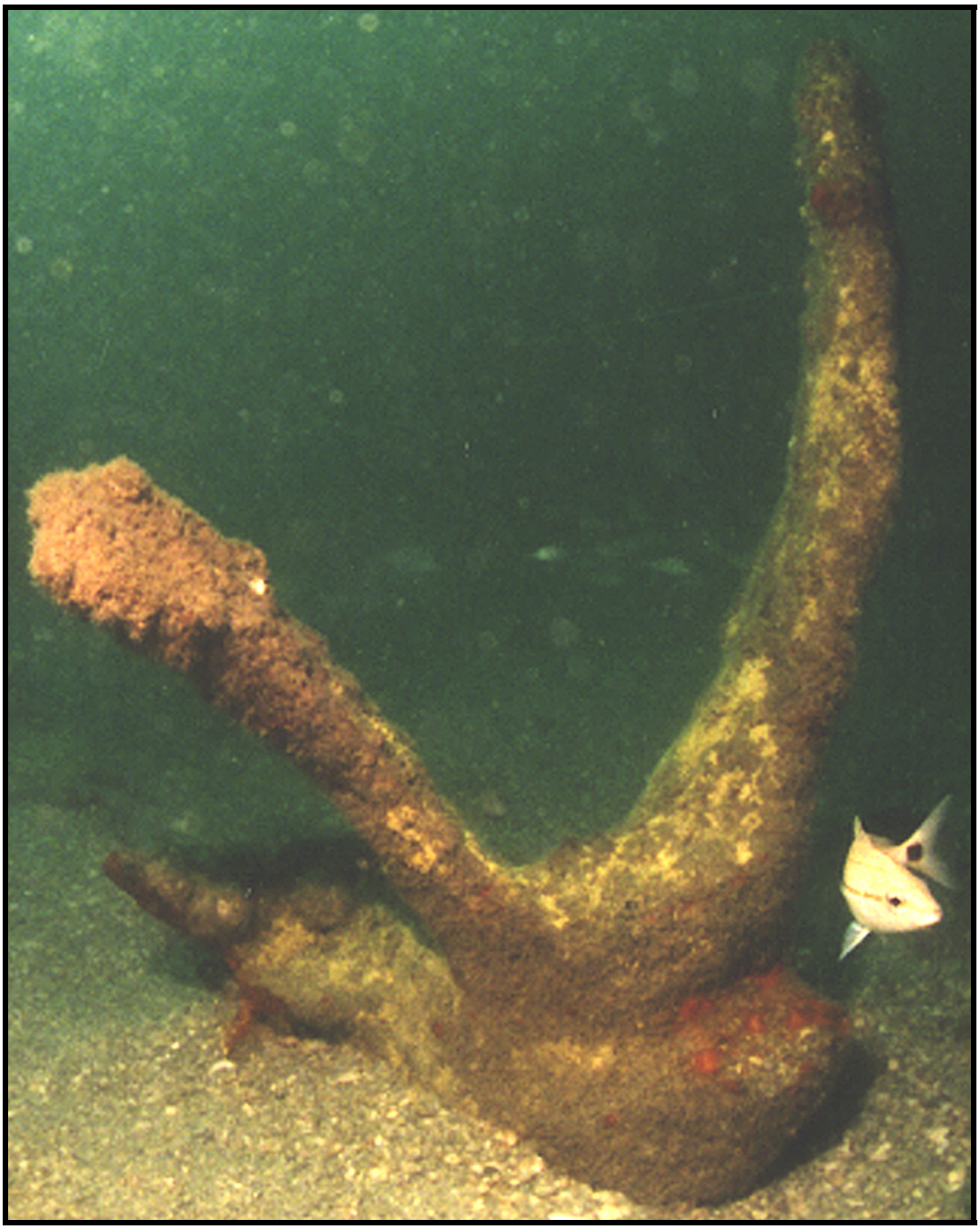

Figure 22: Two of the four blades on *Commodore*'s propeller, looking forward. Note the broken blade to the upper left and lack of hull structure in background. (Image courtesy Cindy Burnham, Nautilus Productions 2002)

survivors do mention the final whistle from the vessel as it began to sink beneath the waves. Debris at the wreck site appears to support the hypothesis that there was an explosion as the vessel sank.

The small donkey boiler and the windlass are also of interest for site identification (See Figure 22). Use of donkey engines and boilers to run deck machinery aboard sailing vessels dates from the early 1860s (*The Persistence of Sail in the Age of Steam: Underwater Archaeological Evidence from the Dry Tortugas*, Donna J. Souza 1998:50). The presence of a donkey boiler and steam-powered windlass suggests the ship sank after 1860.

Material Culture: Small Artifacts

Discovery in 2002 of two intact wooden crates of ammunition *in situ* was a particularly important find. Although several hundred bullets and cartridges were recovered from the wreck site in the 1980s, no further recoveries or sightings of ammunition had been reported for several years. The crates are still packed as they would have been when they left the factory. Their manufacture and the matching size of the cartridges with those in the collection at PILHA leave little doubt that the crates contain .43 caliber shot. *Commodore* sank with 15 tons of munitions aboard including:

> a half ton of dynamite
> 40 bundles of Remington rolling-block rifles
> a number of bundles of Mauser and Winchester rifles
> 204,000 rifle cartridges
> 1,000 Hotchkiss cannon rounds
> 2,000 dynamite cartridges for the dynamite gun
> barrels of clothing
> boxes of drugs and medical supplies (Taylor 2)

Figure 23: Side view of the windlass beneath the baseline during the May 2002 season. Although the windlass was mapped *in situ*, concretion layers make it difficult to ascertain whether the pawls allowed the use of stud link chain. (Image courtesy Rick Allen, Nautilus Productions 2002)

Although the list does not reveal how many cartridges of each caliber were shipped, we do know from archaeological research that the Remington's were .43-caliber.

Among the artifacts recovered from the *Commodore* site prior to 1998 is a group of pieces, concretions, and parts of .43-caliber Remington rolling-block rifles (See Figures 24, 25, 26). The rolling block mechanism was a remarkable advance over previous bolt mechanisms. The design was simple and meant to decrease jamming. The design worked on the premise of interlocking sections that pivoted off one set of pins. The hammer and breechblock both rolled on pins that allowed the back thrust of the fired shot to be taken by the breechblock (Stebbins 1958:2). The presence of several rifles of this type on the wreck site matches the cargo list printed in the newspapers following the sinking. Many rifles recovered from the site have fallen apart, but many pins, hammers, and internal pieces to the rolling block have survived. Several hundred bullets and cartridges were recovered at the same time as the rifles. The match of the rifle caliber with the ammunition supports the identification of the site as *Commodore*. Few ships traveled this route, at this time, with several crates of ammunition aboard.

An ironstone plate was recovered from the site and donated to PILHA in 1996. The plate measures 10 inches in diameter with a white glaze finish. The back of the plate is inscribed with the words "ROYAL IRONSTONE CHINA" above the Meakin crest of a winged lion, unicorn, and coat of arms. Beneath the crest are the words "ALFRED MEAKIN ENGLAND." Alfred Meakin was a registered trademark from 1875-1897 when the company changed names to Alfred Meakin Ltd. With the date range of 1875 to

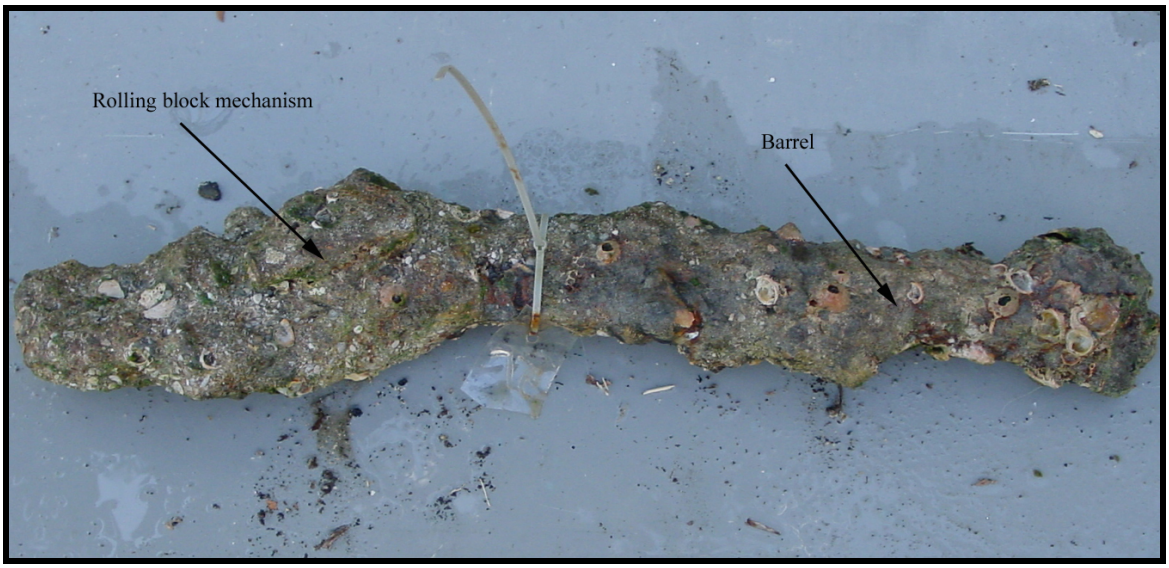

Figure 24: Concreted rifle with rolling block mechanism still intact beneath concretion. This artifact is one of several rifles still in wet storage and radiographed for analysis. (Image courtesy Ponce Inlet Lighthouse Association 2002).

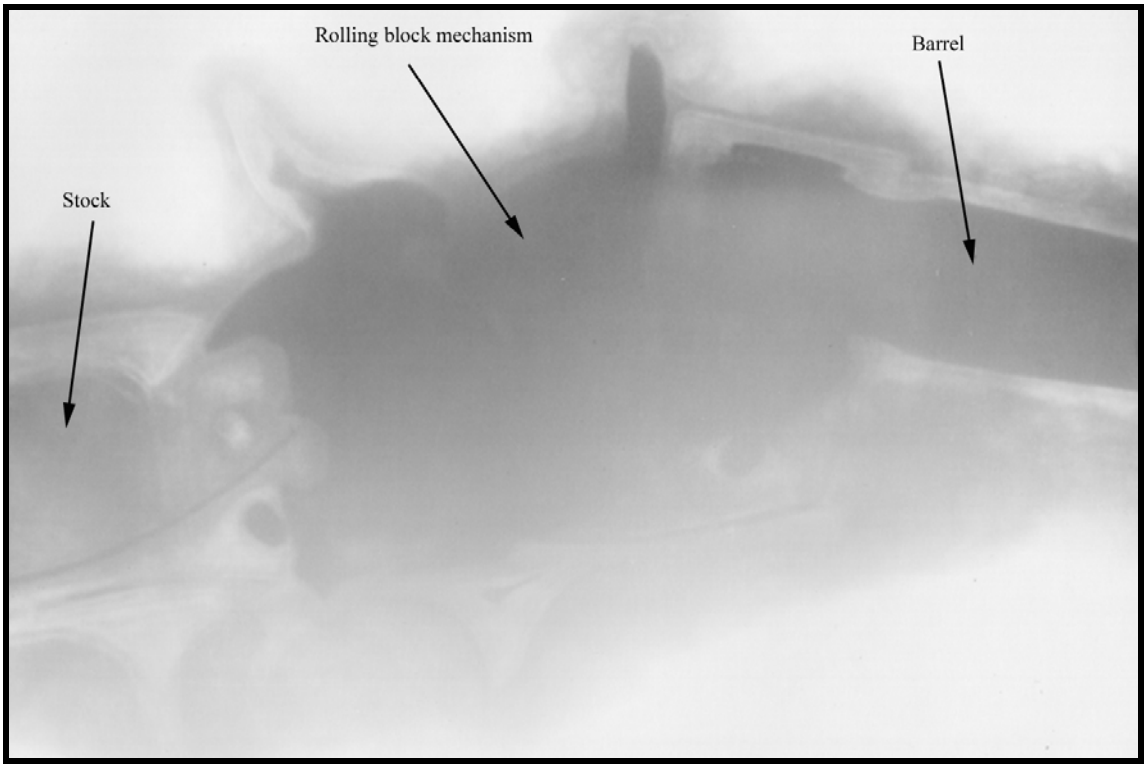

Figure 25: Remington rolling block rifle radiograph showing the interior of Figure 22. Note the degraded areas of the rifle's trigger, trigger guard, hammer, breech, and barrel seen here as lighter areas. (Image courtesy Ponce Inlet Lighthouse Association 2002)

Figure 26: Two Remington rolling block examples. To the left is a Remington Argentine Model 1879, 11mm rifle, and to the right a Spanish Oviedo Arsenal 11mm musketoon. (*Shooting the .43 Spanish Rolling Block*, Croft Barker 2003:16)

1897, a possible time frame for the site is established. SS *Commodore* was built in 1882 and lost in 1897. This may place the plate's use date range at the later half of the life of Meakin's trademark.

One of the few personal artifacts recovered from the wreck site is a white clay pipe stem, inscribed with the words "W. MASTERS" on one side and the number "352" on the other. The pipe stem is broken in two and requires conservation. Archival research for information about the maker has failed to uncover any information.

When divers with Serbousek recovered a bronze snatch block in 1996, they had no idea it would be a datable artifact. Once the artifact was cleaned and displayed, the words "A.B. Babbitt 1885" were visible. The date and name gave a date after which the block could have been placed aboard the vessel and before which the ship could not have sunk. The snatch block is one of the best datable artifacts from the wreck site (Figure 27).

The cultural material collected from the wreck site and still *in situ* matches the period for *Commodore*'s sinking. The engine's bore and stroke matching the *1884 List of Merchant Vessels of the United States*, and *Tonnage Admeasurements of Steam Tug* Commodore *of District Philadelphia* is validation of the site's identity. The engine's distinct form matches a later example of a triple expansion Neafie and Levy engine curated by the Mariner's Museum in Virginia. Based on the wreck site engine's stoke, bore, and design it is highly likely that this engine represents the one from the lost SS *Commodore*. Matching Remingtons and shells fit the list of supplies documented in newspaper stories and help to prove the hypothesis that the vessel lying at the wreck site

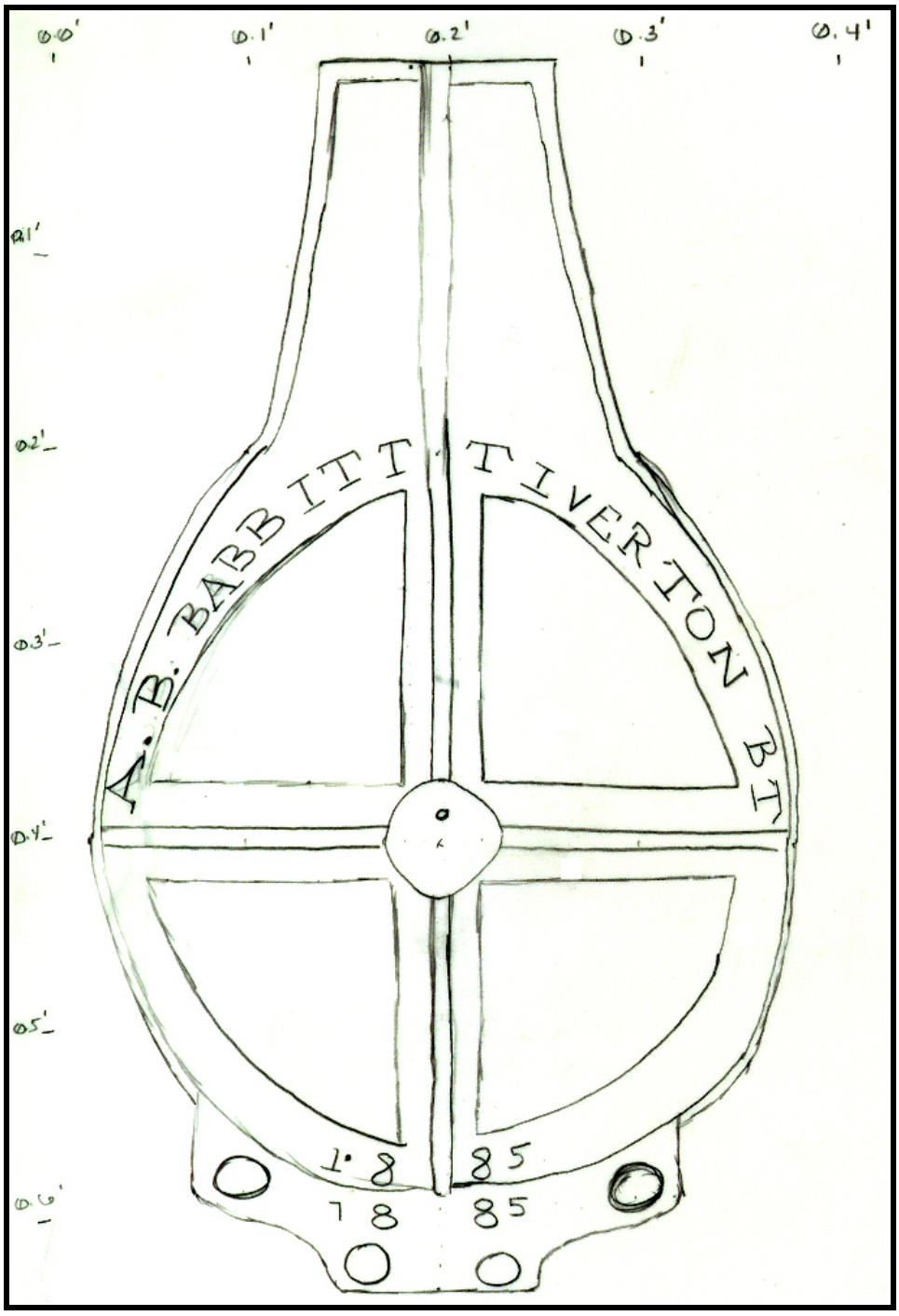

Figure 27: A.B. Babbitt Tiverton bronze block rear view. The block is one of the few datable artifacts recovered from the *Commodore* site at this time. (K. Eslinger field drawing May 2003)

was carrying an unusual amount of weapons. The fact that these rolling block rifle concretions are Remington-style rolling blocks and are listed in the shipwreck documents further corroborates the site's identification. The Alfred Meakin plate with its date range of 1875-1897, and the A.B. Babbit block, with 1885 stamped into it, help narrow the range of the wrecking. With the data from the site, engine, the rifles, the block and the plate it can be stated with some confidence that the wreck site to which PILHA and Serbousek hold claim is a late nineteenth century, single expansion, wooden-hulled, steam ship. The evidentiary trail from newspaper articles and survivors also corroborates the hypothesis that the site is indeed Steamship *Commodore* lost in the early morning hours of January 2, 1897.

CHAPTER VII:
CONCLUSIONS*:*

The *Commodore* Project and the site represent the end of Crane's "Open Boat" now the vessel and the men have come back into port. Archaeologists, historians, and staff at PILHA can tell the story of the men who never had the opportunity to tell theirs. The legacy of the Mosquito/Ponce Inlet lighthouse as a beacon to the shipwrecked crew and the assistance of Keeper O'Hagan in rescuing many of the crew who arrived in Mosquito Inlet in 1897 is carried forward today by archaeologists and staff at Ponce Inlet Lighthouse. *Commodore* has proven to be a valuable teaching tool with local divers, students and visitors to the lighthouse.

This study focused on a single question: are the wreck site remains held under joint titles by the Ponce Inlet Lighthouse Association and Norman Serbousek those of SS *Commodore* sunk on January 1, 1897? Based on historical data, archaeological survey, and artifact study the wreck PILHA and Serbousek own is indeed *Commodore*. The original Tonnage Admeasurements for *Commodore* from May 5, 1882, list the vessel with a length of 122.5 feet (Tonnage Admeasurements of Steam Tug *Commodore* of District Philadelphia, May 5, 1882). The wreckage of the engine, propeller shaft and propeller stretches for almost forty feet thereby accounting for almost a third of the vessel's original length – a measurement consistent with the machinery to hull size ratio of the time. The 1884 *American Shipmaster's Association Record* lists *Commodore* with an engine having a 26-inch bore and a 30-inch stroke. Archaeological survey in 2004 suggests a 24 to 27-inch bore with a 36-inch stroke. Accounting for calcareous deposits

and marine growth, the bore and stroke of the engines are comparable. This finding clearly identifies the alleged *Commodore's* remains as the lost Steamship *Commodore*.

The presence of rolling block rifles on the wreck site is another important indication of the site's identity. The confirmation of the caliber of the ammunition and rifles as .43 caliber matches the preference of the Cuban revolutionaries for Remington .43s (Musicant 1998:55). Cases of ammunition and several rolling block rifles located in the sand suggest the vessel was gun running. Few vessels traveled the east coast of Florida in the 1890s with weaponry. Vessels carrying arms and munitions were either naval vessels or filibusters.

Taking into account Florida's close association with Cuba and its political sphere, it is not surprising that Floridians assisted Cuban revolutionaries at the end of the nineteenth century. The use of *Commodore* to run guns for the Jacksonville *junta* in 1895 and 1896 was a wise move for the Cubans. *Commodore* was fast, maneuverable, and able to clear port without filing a destination. There can be little doubt that the shipwreck site identified by Don Serbousek in the 1980s as the *Commodore* is indeed the final resting place of the *Commodore* and eight of her crew. The machinery, the munitions, and the artifact assemblage match the historical documentation. The wreck matches the remains of a wooden steamer lost in a storm. Despite lying hidden for almost a century, the wreck site can finally be identified as the Steamship *Commodore* and take its place in national and international history.

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Appendix A:
SERBOUSEK'S 1996 ARTIFACT INVENTORY

Appendix A:
SERBOUSEK'S 1996 ARTIFACT INVENTORY[10]

Donor	2003 No.	1996 No.	Description	Tag No.
Serbousek	2003-2-115	96COM001	Riveted metal plate 6 ½" x 3 ¼"	N/A
Serbousek	2003-2-65	96COM002	Encrustment, possible box corner concretion w/ 5/8" bullet	N/A
Serbousek	N/A	96COM003	Metal chunk, 11 ¼" x 5 ¾"	N/A
Serbousek	N/A	96COM004	Coal 3 ½" x 3 ¼"	N/A
Serbousek	2003-2-166	96COM005	Iron rod with hook end, 26" long	#5
Serbousek	N/A	96COM006	Chunks? 2 each	N/A
Serbousek	N/A	96COM007	Wood piece w/metal rod protruding, 11 ½"	#7
Serbousek	N/A	96COM008	Wood chunks, 4 each	N/A
Serbousek	N/A	96COM009	Metal chunks & rods, 6, largest 17 ½"	#9
Serbousek	N/A	96COM009a	Wood piece with metal protruding, 9 ¾"	#9
Serbousek	N/A	96COM010	Pipe section, 3 ½" long, 3" diameter	N/A
Serbousek	N/A	96COM011	Plate w/stanchion [sic] 8 ½" long, 7 ½" high	N/A
Serbousek	N/A	96COM012	Encrusted gun remnant, 9" x 2 ½"	N/A
Serbousek	N/A	96COM013	Chunks, 2 each, 12" long	N/A
Serbousek	N/A	96COM014	Large metal ring (Bull nose) ~22" diameter, 7" thick	#14
Serbousek	2003-2-162	96COM015	Steam pump	N/A
Serbousek	N/A	96COM016	Pipe	N/A

[10] All information comes from the document created by Tom Taylor, Don Serbousek and John Lane in 1996. Descriptions are quoted from the "ACCESSION NUMBERS FOR *COMMODORE* ARTIFACTS LOANED BY DON SERBOUSEK, JAN NEAL, JOHN LANE, BRUCE ZARAJCJYK, AND TOM TAYLOR (Using the tag numbers with which he identified the artifacts and located where they were found on the wreck. Where not tagged, numbered in order of the "Item List" developed by the Lighthouse Association.)."

Donor	2003 No.	1996 No.	Description	Tag No.
Serbousek	2003-2-120	96COM017	Metal chunk, 8”	#17
Serbousek	2003-2-66	96COM018	Broken pieces of threaded pipe,	N/A
	2003-2-67		2 each, 3 & 4” long	
	2003-2-68			
Serbousek	N/A	96COM019	Chunk, 11 ½” x 8”	N/A
Serbousek	N/A	96COM020	Chunks, 5 each, < 2 ½” long	N/A
Serbousek	2003-2-94	96COM021	Leather pieces, 3 each, 10” & 11” long	N/A
	2003-2-96			
	2003-2-98			
Serbousek	N/A	96COM022	Rod (pipe or gun?), 6 ½” long	N/A
Serbousek	N/A	96COM023	Gun, 25 ½” long	#23
Serbousek	N/A	96COM024	Metal, curved, 4” wide	N/A
Serbousek	N/A	96COM025	Metal rod, 7 ½” long	N/A
Serbousek	N/A	96COM026	Metal rod, 7” long	N/A
Serbousek	N/A	96COM027	Encrusted gun, 22 ¼” long, 6” wide	#27
Serbousek	N/A	96COM028	Wood chunks, 4 each	#28
Serbousek	N/A	96COM029	“Half-moon” metal, 4 ½”	N/A
Serbousek	N/A	96COM030	Coal, 6, each less than 4 ½”	N/A
Serbousek	N/A	96COM031	Iron, 15, each less than 6”	N/A
Serbousek	N/A	96COM032	Wood, 5, each less than 7”	N/A
Serbousek	N/A	96COM033	Metal, 4, each less than 3”	N/A
Serbousek	N/A	96COM034	Encrusted gun, 20” long, 5” wide	#34
Serbousek	2003-2-179	96COM035	Pipe with flange, “L” shaped, 19” long,	#35
			flange side cross section 21”	
Serbousek	2003-2-158	96COM036	Metal rod, 19 ½” long	#36
Serbousek	2003-2-185	96COM037	Anchor, small boat, double fluke	#37
			12 ½” shank, 19 ½” between flukes	
Serbousek	N/A	96COM038	Block of wood, 9 ½”x5”x4”	N/A
Serbousek	2003-2-52	96COM039	Two lead sheeting mast collars	#39
	2003-2-54		12” diameter	
Serbousek	1996-75-2	96COM040	Ship’s turnbuckle, 29” long	#40

Donor	2003 No.	1996 No.	Description	Tag No.
Serbousek	2003-2-56	96COM041	Curved pipe, 10” long, 1” diameter	#41
Serbousek	N/A	96COM042	Metal rod, less than 9” long	#42
Serbousek	N/A	96COM043	Curved metal rod, ~40” long, 1 ¾” diameter	N/A
Serbousek	N/A	96COM044	Pipe, 19” long, 6” wide	N/A
Serbousek	2003-2-146	96COM045	Chunk? 17 ¼”x5”	#45
Serbousek	N/A	96COM046	Metal chunks, 6, each 7”	N/A
Serbousek	1996-75-4 2003-2-139	96COM047	Two “V” shaped brackets, 11”x8” & 13”x10 ½”	N/A
Serbousek	2003-2-157	96COM048	Metal rod, 14” long	#48
Serbousek	N/A	96COM049	Metal rod, 16 ½” long	#49
Serbousek	N/A	96COM049a	Metal rod, 12” long	#49
Serbousek	N/A	96COM050	Metal rod, less than 9” long	#50
Serbousek	N/A	96COM050a	Encrusted gun with bullets encrusted Measures 24”	#50
Serbousek	N/A	96COM051	Pipe section, 8”x4”	N/A
Serbousek	2003-2-172	96COM052	Head of anchor chain with ring, 42”	N/A
Serbousek	N/A	96COM053	Coal and metal, “T” shaped chunk, 10” long	N/A
Serbousek	2003-2-79	96COM054	Metal pipe, 6 ½” long	N/A
Serbousek	1996-75-1	96COM055	Metal, machete blade, 25” long	N/A
Serbousek	N/A	96COM056	Ammo crate board with encrusted Bullets, 13” long	N/A
Serbousek	2003-2-150	96COM057	Encrusted gun with shell casing on side 22”x4 ½”	#57
Serbousek	2003-2-127	96COM058	Metal chunk, 7”	#58
Serbousek	2003-2-116	96COM059	Metal rod, less than 9” long	#59
Serbousek	N/A	96COM060	Wood pieces, 2, each less than 9” long	N/A
Serbousek	N/A	96COM061	Coal chunk encrustment, 13” long	#61
Serbousek	2003-2-78	96COM062	Chunk? 6 ½”	N/A
Serbousek	2003-2-149	96COM063	Chunk, 16”	#63

Donor	2003 No.	1996 No.	Description	Tag No.
Serbousek	N/A	96COM064	Metal chunk, 9 ½" long	N/A
Serbousek	2003-2-104	96COM065	Metal rod	#65
Serbousek	2003-2-73	96COM066	Metal rod, 9" long	#66
Serbousek	2003-2-72	96COM067	Metal rod, 13"	#67
Serbousek	N/A	96COM068	Metal pipe, 15" long	N/A
Serbousek	N/A	96COM069	Chunks, 2	N/A
Serbousek	N/A	96COM070	Metal (?) chunk, 10"	N/A
Serbousek	N/A	96COM071	Thick metal object with truncated Triangular shape cut-out, 12"x7"	#71
Serbousek	2003-2-95	96COM072	Leather, 8" [its actually rubber]	N/A
Serbousek	N/A	96COM073	Metal chunks, 18, each less than 5"	N/A
Serbousek	N/A	96COM074	Wood chunks, 24, each less than 10" long, many with holes (bolt holes?), one with square brass rod in wood	N/A
Serbousek	N/A	96COM075	Metal rods, 4, each 12", 8", 5 ½", 5 ½"	N/A
Serbousek	N/A	96COM076	Chunk, 14"	N/A
Serbousek	N/A	96COM077	Chunk, 6 ½"	N/A
Serbousek	N/A	96COM078	Chunks, 13, each less than 18"	N/A
Serbousek	N/A	96COM079	Chunk, 6"	N/A
Serbousek	N/A	96COM080	Pipe, 20"	N/A
Serbousek	N/A	96COM081	Pipe, 6"	N/A
Serbousek	N/A	96COM082	Chunks, 4, each less than 5"	N/A
Serbousek	N/A	96COM083	Chunks, 2, each less than 9"	N/A
Serbousek	N/A	96COM084	Large chunk, 26" long, 6-7" thick	N/A
Serbousek	N/A	96COM085	Metal pipe, 90 degree joint, ~5" diameter	N/A
Serbousek	N/A	96COM086	Copper pipe, ~70" long, ~3" diameter	N/A
Serbousek	N/A	96COM087	Copper pipe, ~60" long, ~2 ½" diameter	N/A

Donor	2003 No.	1996 No.	Description	Tag No.
Serbousek	N/A	96COM088	Copper pipe, ~30" long, 2 ½" diameter, "L" shape	N/A
Serbousek	N/A	96COM089	Copper pipe, ~50" long, ~2 ½" diameter	N/A
Serbousek	N/A	96COM090	Copper pipe, curved, ~51" long, ~2 ½" diameter	N/A
Serbousek	N/A	96COM091	Large copper tubing with flange on one end, "L" shaped, 7" diameter, 122" long	N/A
Serbousek	1996-75-6	96COM092	Barrel fragment for Remington rolling block, .43 caliber rifle, preserved	N/A
Serbousek	1996-75-13	96COM093	Wood stock fragment for Remington rolling block, .43 caliber rifle, preserved	N/A
Serbousek	1996-75-7	96COM094	Barrel butt crew plate from Remington rolling block, .43 caliber rifle, preserved	N/A
Serbousek	1996-7-11	96COM095	Lock ring from lock mechanism of Remington rolling block, .43 caliber rifle, preserved	N/A
Serbousek	1996-7-8	96COM096	Lock mechanism, part B, for Remington rolling block .43 caliber rifle, preserved	N/A
Serbousek	1996-75-9	96COM097	Lock mechanism part C for Remington rolling block, .43 caliber rifle, preserved	N/A
Serbousek	1996-75-10	96COM098	Trigger release mechanism, part D From Remington rolling block, .43 caliber rifle, preserved	N/A
Serbousek	1996-75-19	96COM099	Bullets and partial shells in paint bucket	N/A
Serbousek	2003-2-184	96COM100	Bronze ship's block engraved with "A.B. Babbitt, Tiverton, RI, 1885"	N/A

Donor	2003 No.	1996 No.	Description	Tag No.
Serbousek	2003-2-169	96COM101	Glass sight glass from ship's boiler	N/A
Serbousek	2003-2-186	96COM199	Remington, rolling block, .45 caliber In good condition	N/A
Neal	N/A	96COM200	Brass pulley fitting, 8" long with angled end with ring	N/A
Neal	1996-74-5	96COM201	Lead knob	N/A
Neal	1996-74-6	96COM202	Brass sheave bracket from block	N/A
Neal	1996-74-7	96COM203	Brass cabinet lock	N/A
Neal	1996-74-2	96COM204	Lignum vitae block sheave	N/A
Neal	1996-74-3	99COM250	Brass sheave wheel axle	N/A
Neal	1996-74-4	99COM251	Brass sheave wheel for 96COM200	N/A
Lane	1996-73-2	96COM300	Rifle cleaning brush core segment brass	N/A
Lane	1996-73-1	96COM301	Port (red) running light lens fragment	N/A
Lane	1996-73-3	96COM302	Sextant fragment, wood and ivory (?)	N/A
Lane	1996-73-4	96COM303	Ship's spikes, 6, iron and bronze	N/A
Zarajcjyk	1996-72-1	96COM400	Clay pipe stem	N/A
Taylor	1996-71-1	96COM500	Dinner plate, marked with coat of arms "Royal Ironstone China, Alfred Meakin, England," found July 10, 1996	N/A
Taylor	N/A	96COM501	3 Remington, rifle .43 caliber shells encrusted together	N/A

Appendix B:
2003 ARTIFACT INVENTORY

Appendix B:

2003 ARTIFACT INVENTORY

Accession No.	Old No.	Artifact	Dimensions	Drawing No.	Donor
1996-71-1	96COM500	Ironstone plate	See drawing	9	Taylor
1996-72-1	96COM400	Clay pipe stem	0.22’ long, 0.04’ diameter	98	Zarajcjyk
1996-73-1	96COM301	Red running light fragment	N/A	N/A	Lane
1996-73-2	96COM300	Brass rifle cleaning brush	N/A	N/A	Lane
1996-73-3	96COM302	Sextant fragment	see drawing	8	Lane
1996-73-4	96COM303	Ship’s spikes, 6	N/A	N/A	Lane
1996-74-2	96COM204	Lignum vitae block sheave	N/A		Neal
1996-74-3	99COM250	Brass sheave wheel axle	N/A		Neal
1996-74-4	99COM251	Brass sheave wheel for 96COM200	N/A		Neal
1996-74-5	96COM201	Lead knob	see drawing	1	Neal
1996-74-6	96COM202	Brass sheave bracket	see drawing	2	Neal
1996-74-7	96COM203	Brass cabinet lock	0.17’ long, 0.1’ wide, 0.17’ high	98	Neal
1996-75-1	96COM055	Machete blade	see photo	N/A	Serbousek
1996-75-2	96COM040	Ship’s turnbuckle	29” long	N/A	Serbousek
1996-75-4	96COM047	V shaped bracket	see photo	N/A	Serbousek
1996-75-6	96COM092	Conserved rifle barrel fragment	see photo	N/A	Serbousek
1996-75-7	96COM094	Conserved barrel butt plate	see photo	N/A	Serbousek
1996-75-8	96COM096	Conserved lock mechanism	see photo	N/A	Serbousek

Accession No.	Old No.	Artifact	Dimensions	Drawing No.	Donor
1996-75-9	96COM097	Conserver lock mechanism	see photo	N/A	Serbousek
1996-75-10	96COM098	Trigger release	see photo	N/A	Serbousek
1996-75-11	96COM095	Lock ring from rifle	see photo	N/A	Serbousek
1996-75-13	96COM093	Conserved wood rifle fragment	see photo	N/A	Serbousek
1996-75-19	96COM099	Bullets and shells	assorted	N/A	Serbousek
2003-2-3		White ironstone plate	0.85’ diameter, 0.15’ tall	9	Zarajcjyk
2003-2-4		Bronze spike	square head .056’ wide, 0.45’ long, 0.035’ wide	10	
2003-2-5		Curved bronze spike	0.05’ high, 0.465’ long, 0.04’ wide	11	
2003-2-6		Bronze spike in wood fragment	0.5’ high, 0.37’ long, 0.15’ wide	12	
2003-2-7		Bronze bolt in wood fragment	0.62’ high, 0.17’ long, 0.1’ wide	13	
2003-2-8		Concretion with trigger	0.25’ high, 0.45’ long, 0.21’ wide	13	
2003-2-9		2 barrel concretions with packing material attached	see photo	N/A	
2003-2-10		16 pieces red rubber	Assorted sizes – see drawings	14	
2003-2-11		Rolling block rifle piece	0.03’ high, 0.13’ long	15	
2003-2-12		Bronze spike fragment	0.25’ long, 0.035’ wide	16	
2003-2-13		Clay ceramic fragment	see photo	N/A	
2003-2-14		Concreted rolling block	0.42’ high, 0.94’ long, 0.2’ wide	N/A	
2003-2-15		Bronze spike	0.42’ long, 0.03’ wide	17	
2003-2-16		2 brass shell caps	0.05’ diameter	17	

Accession No.	Old No.	Artifact	Dimensions	Drawing No.	Donor
2003-2-17		Bronze spike fragment	0.19’ long, 0.04’ wide	17	
2003-2-18		Metal washer	0.12’ diameter, 0.02’ thick	17	
2003-2-19		White ironstone fragment	0.2’ long, 0.03’ wide	17	
2003-2-20		Box fragment	0.14’ high, 0.07’ long, 0.03’ wide	17	
2003-2-21		Metal nut fragment	0.08’ diameter,0.04’ wide	17	
2003-2-22		Concreted rolling block	0.2’ high, 2.24’ long, 0.25’ wide	N/A	
2003-2-23		12 pieces of coal	assorted sizes	N/A	
2003-2-24		Copper sheet metal	0.1’ thick, 0.8’ long, 0.47’ wide	18, 19	
2003-2-25		Rifle block concretion	see photo	N/A	
2003-2-26		Part of wooden fore stock	0.45’ long, 0.07’ wide	20	
2003-2-27		Concretion with 16 shells	0.38’ long, 0.14’ high	20	
2003-2-28		2 percussion caps	0.05’ diameter	20	
2003-2-29		One lead bullet	0.1’ long, 0.03’ diameter	21	
2003-2-30		One concreted shell casing	see photo	N/A	
2003-2-31		One crushed shell with bullet	0.14’ long, 0.04’ diameter	21	
2003-2-32		Concreted rolling block	see photo	N/A	
2003-2-33		7 breech concretions	assorted – see photo	N/A	
2003-2-34		Bronze dump	0.8’ long, 0.05’ diameter	22	
2003-2-35		Iron spike fragment	0.42’ long, 0.04’ wide	21	
2003-2-36		Rifle retaining plate & pin	see drawing	21	
2003-2-37		Lead strip with ridge	0.16’ long, 0.04’ wide	21	

Accession No.	Old No.	Artifact	Dimensions	Drawing No.	Donor
2003-2-38		Lead strip with ridge	0.17’ long, 0.04’ wide	21	
2003-2-39		Bronze dump fragment	0.68’ long, 0.05’ diameter	22	
2003-2-40		Bronze dump fragment	0.96’ long, 0.05’ diameter	22	
2003-2-41		Cupric pipe fragment	0.25’ long, 0.04’ diameter	23	
2003-2-42		Bronze dump in wood frag.	0.805’ long, 0.48’ wide, 0.04’ diameter	24	
2003-2-43		Bronze spike in wood frag.	0.48’ long, 0.35’ wide, 0.21’ high	25	
2003-2-44		Concreted cow bone w/spike	see photo	N/A	
2003-2-45		Cow bone fragment	see photo	N/A	
2003-2-46		Framing component	3.0’ long, 0.5’ wide	26	
2003-2-47		Curved framing component	2.75’ long, 0.5’ wide	27	
2003-2-48		Wooden block	0.8’ long, 0.4’ wide	28	
2003-2-49		Pyramidal ferrous concretion	1.0’ long, 1.0’ wide, 1.25’ high	29	
2003-2-50		Pin in iron plate concretion	0.6’ long, 0.4’ wide, 0.57’ high	30	
2003-2-51		Iron shackle	0.84’ long, 0.4’ wide, 0.314’ high	31	
2003-2-52	96COM039	Lead mast sleeve	see photo	N/A	Serbousek
2003-2-53	96COM039	Lead mast sleeve	see photo	N/A	Serbousek
2003-2-54	96COM039	Lead mast sleeve	see photo	N/A	Serbousek
2003-2-55		4 concreted rolling blocks	assorted, see photo	N/A	
2003-2-56	96COM041	Pin in concretion	0.66’ long, 0.06’ high	32	Serbousek
2003-2-57	96COM072	L shaped concretion	0.7’ long, 0.5’ high	29	Serbousek
2003-2-58		Iron spike fragment	0.55’ long, 0.26’ wide, 0.31’ high	33	

Accession No.	Old No.	Artifact	Dimensions	Drawing No.	Donor
2003-2-59		Iron spike fragment	0.24’ long, 0.15’ wide	35	
2003-2-60		Iron pin concretion	0.5’ long, 0.12’ wide	34	
2003-2-61		Iron spike concretion	0.38’ long, 0.15’ wide	34	
2003-2-62		Small iron concretion	0.16’ long, 0.18’ wide	35	
2003-2-63		Iron concretion with wood	0.24’ long, 0.15’ wide	34	
2003-2-64		Concretion with dump and spike cavities	0.6’ long, 0.4’ high	35	
2003-2-65	96COM002	Wooden box corner	0.51’ long, 0.17’ high	36	Serbousek
2003-2-66	96COM018	Wrought iron pipe fragment	0.31’ long, 0.18’ high	36	Serbousek
2003-2-67	96COM018	Wrought iron pipe fragment	0.25’ long, 0.21’ wide, 0.24’ high	37	Serbousek
2003-2-68	96COM018	Wrought iron pipe fragment	0.38’ long, 0.21’ high	37	Serbousek
2003-2-69		Concreted iron pin	0.6’ long, 0.12’ wide	36	
2003-2-70		Concreted iron pin	0.49’ long, 0.16’ wide	36	
2003-2-71		Concreted iron pin	0.62’ long, 0.14’ wide	37	
2003-2-72	96COM067	Concreted iron pin with wood	1.06’ long, 0.22’ wide	38	Serbousek
2003-2-73	96COM066	Concreted iron pin	0.63’ long, 0.14’ wide	39	Serbousek
2003-2-74	96COM119	Concreted iron pin	0.72’ long, 0.2’ wide	39	Serbousek
2003-2-75	96COM052	Iron concretion	0.75’ long, 0.35’ wide	40	Serbousek
2003-2-76		Rifle barrel concretion	1.3’ long, 0.2’ wide	41	
2003-2-77		Small concretion with wood	0.5’ long, 0.25’ wide	42	
2003-2-78	96COM062	Small concretion	0.52’ long, 0.25’ wide	43	Serbousek

Accession No.	Old No.	Artifact	Dimensions	Drawing No.	Donor
2003-2-79	96COM054	Small concretion	0.54’ long, 0.25’ wide	43	Serbousek
2003-2-80	96COM056	Small iron concretion	0.43’ long, 0.19’ wide	43	Serbousek
2003-2-81		Iron pin concretion	0.6’ long, 0.25’ wide	42	
2003-2-82		Small ferrous concretion	0.37’ long, 0.17’ wide	42	
2003-2-83		Large concretion	1.62’ long, 1.6’ wide	44	
2003-2-84		Lead pipe concretion	3.16’ long, 0.3’ wide, 0.4’ diameter	45	
2003-2-85		Crushed lead mast collar	see photo	N/A	
2003-2-86		Cupric pipe with threading	2.0’ long, 0.2’ wide, 0.7’ high	47	
2003-2-87		Crushed cupric pipe	2.2’ long, 02.’ wide, 1.6’ high	46	
2003-2-88		Iron strapping rod	4.96’ long, 0.11’ wide	48	
2003-2-89		Small block GMC piston	0.29’ long, 0.25’ high, 0.26’ diameter	96, 97	
2003-2-90		Iron pin concretion	0.6’ long, 0.21’ wide	49	
2003-2-91		Iron pipe, rod concretion	0.6’ long, 0.4’ wide, 0.35’ high	50	
2003-2-92		Concretion with wood	0.5’ long, 0.5’ wide	49	
2003-2-93		Bullet and iron pin concretion	0.6’ long, 0.5’ wide	51	
2003-2-94	96COM021	Rubber sheet 1	0.5’ long, 0.4’ wide	52	Serbousek
2003-2-95	96COM072	Rubber sheet 2	0.63’ long, 0.44’ wide	52	Serbousek
2003-2-96	96COM021	Rubber sheet 3	1.3’ long, 0.2’ wide	53	Serbousek
2003-2-97		Rubber sheet 4	0.93’ long, 0.7’ wide	54	
2003-2-98	96COM021	Ferrous plate concretion	0.32’ long, 0.16’ wide	51	Serbousek
2003-2-99		Iron square spike concretion	0.27’ long, 0.18’ wide	51	

Accession No.	Old No.	Artifact	Dimensions	Drawing No.	Donor
2003-2-100		Iron pipe concretion	0.44’ long, 0.2’ wide	55	
2003-2-101		Iron concretion with bullets	0.4’ long, 0.25’ wide	55	
2003-2-102		Small iron plate concretion	0.4’ long, 0.23’ wide	55	
2003-2-103		Concretion with stone	0.41’ long, 0.32’ wide	56	
2003-2-104	96COM065	Iron concretion with pin	0.81’ long, 0.25’ wide	57	Serbousek
2003-2-105		Rifle barrel concretion	1.0’ long, 0.15’ wide	58	
2003-2-106		Bolt hole concretion	0.3’ long, 0.21’ wide	56	
2003-2-107		Ferrous concretion	0.25’ long, 0.24’ wide	56	
2003-2-108		T-shaped concretion	0.79’ long, 0.65’ wide	60	
2003-2-109		Concretion	0.85’ long, 0.4’ wide	59	
2003-2-110		Pin from relay	0.5’ long, 0.1’ wide, 0.5’ diameter	59	
2003-2-111		Small iron concretion	0.38’ long, 0.2’ wide	61	
2003-2-112		Small iron pipe concretion	0.37’ long, 0.28’ wide	62	
2003-2-113		Iron plate concretion	0.33’ long, 0.32’ wide	61	
2003-2-114		Iron rod concretion	0.64’ long, 0.2’ wide	62	
2003-2-115	96COM001	Iron plate with rivets	0.39’ long, 0.26’ wide	61	Serbousek
2003-2-116	96COM059	Iron pipe	0.4’ long, 0.14’ wide, 0.12’ diameter	62	Serbousek
2003-2-117		Ferrous plate concretion	0.29’ long, 0.24’ wide	61	
2003-2-118		Shell concretion	0.22’ long, 0.17’ wide	62	
2003-2-119		Small concretion	0.22’ long, 0.17’ wide	62	
2003-2-120	96COM017	Ferrous concretion	0.7’ long, 0.25’ wide	63	Serbousek

Accession No.	Old No.	Artifact	Dimensions	Drawing No.	Donor
2003-2-121		Small concretion	0.28’ long, 0.16’ wide	63	
2003-2-122		Iron plate	0.58’ long, 0.5’ wide	64	
2003-2-123		Iron plate	0.57 long, 0.53’ wide	65	
2003-2-124	96COM055	Small concretion	0.55’ long, 0.16’ wide	66	Serbousek
2003-2-125	96COM060	Concretion	0.36’ long, 0.3’ wide	66	Serbousek
2003-2-126		Small concretion	0.6’ long, 0.18’ wide	66	
2003-2-127	96COM058	Coal and iron plate	0.5’ long, 0.42’ wide	67	Serbousek
2003-2-128		Small ferrous concretion	0.56’ long, 0.15’ wide	66	
2003-2-129		Iron concretion with strap	0.39’ long, 0.17’ wide	67	
2003-2-130		Iron pin concretion	0.89’ long, 0.33’ wide	69	
2003-2-131		Iron plate concretion	0.4’ long, 0.2’ wide	68	
2003-2-132		Small ferrous concretion	0.2’ long, 0.2’ wide	68	
2003-2-133		Iron and coal concretion	0.51’ long, 0.18’ wide	69	
2003-2-134		Ferrous screw from relay	0.41’ long, 0.05’ diameter	68	
2003-2-135		Percussion cap concretion	0.23’ long, 0.17’ wide	69	
2003-2-136		Small concretion	0.25’ long, 0.13’ wide	68	
2003-2-137		Concretion	0.37’ long, 0.17’ wide	70	
2003-2-138		Small iron concretion	0.4’ long, 0.2’ wide	68	
2003-2-139	96COM047	Engine mount	0.9’ long, 0.62’ wide	71	Serbousek
2003-2-140		Iron pin concretion	0.69’ long, 0.1’ wide	70	
2003-2-141	96COM019	Iron concretion	0.33’ long, 0.3’ wide	70	Serbousek

Accession No.	Old No.	Artifact	Dimensions	Drawing No.	Donor
2003-2-142		Iron concretion w/2 cavities	0.49’ long, 0.62’ wide	72	
2003-2-143		Ferrous pipe/gun barrel	0.95’ long, 0.26’ wide	73	
2003-2-144	96COM047	Iron concretion	2.1’ long, 0.18’ wide	75	Serbousek
2003-2-145	96COM008	Iron and coal concretion	0.83’ long, 0.34’ wide	74	Serbousek
2003-2-146	96COM045	Ferrous concretion	1.58’ long, 0.4’ wide	76	Serbousek
2003-2-147		Iron concretion	1.75’ long, 0.4’ wide	77	
2003-2-148		Iron concretion	1.15’ long, 0.65’ wide	78	
2003-2-149	96COM063	Iron plate concretion	1.2’ long, 0.7’ wide	79	Serbousek
2003-2-150	96COM057	Concreted rifle	1.81’ long, 0.4’ wide	80	Serbousek
2003-2-151		Concreted iron pipe/rod	1.34’ long, 0.14’ wide	81	
2003-2-152	96COM009	Concreted iron rod	1.6’ long, 0.4’ wide	82	Serbousek
2003-2-153	96COM036	Concreted iron pipe	1.04’ long, 0.26’ wide	83	Serbousek
2003-2-154		Small iron pin	0.46’ long, 0.13’ wide	84	
2003-2-155		Coal	0.22’ long, 0.09’ wide	84	
2003-2-156		Concreted pin	1.15’ long, 0.18’ wide	85	
2003-2-157	96COM048	Concreted iron barrel	1.14’ long, 0.27’ wide	86	Serbousek
2003-2-158	96COM036	Iron connecting rod	4.2’ long, 0.6’ wide	87	Serbousek
2003-2-159		Pipe and flange fitting	1.2’ long, 0.2’ wide	88	
2003-2-160		Coal piece	0.16’ long, 0.19’ wide	84	
2003-2-161		Small concretion	0.14’ long, 0.07’ wide	84	
2003-2-162	96COM015	Engine relay (?)	1.75’ long, 1.5’ high, 0.7’ diameter	89- 92	Serbousek

Accession No.	Old No.	Artifact	Dimensions	Drawing No.	Donor
2003-2-163		Cupric steam pipe	4.2’ long, 0.06’ wide	93	
2003-2-164		Crushed copper pipe	3.5’ long, 0.4’ wide	94	
2003-2-165		Crushed copper pipe	5.6’ long, 0.2’ wide	95	
2003-2-166	96COM005	Retaining plate and pin	0.09’ long, 0.05’ wide	21	Serbousek
2003-2-167		10 assorted coal pieces	assorted, see photo	98	
2003-2-168		Concreted bronze dump	1.14’ long, 0.1’ wide	99	
2003-2-169	96COM101	Glass boiler sight glass tube	see photo	N/A	Serbousek
2003-2-170		5 brass shell casings	see photo	100	
2003-2-171		11 lead bullets	assorted, see photo	100	
2003-2-172	96COM052	Anchor ring, shackle, chain	1.4’ long, 0.1’ wide, 1.1’ diameter	101	Serbousek
2003-2-173	96COM027	Concreted rolling block rifle	see photo	N/A	Serbousek
2003-2-174		Concreted. iron stone plate	0.84’ diameter	102	
2003-2-175		3 pieces of coal	assorted	103	
2003-2-176	96COM007	Dump in wood fragment	0.6’ long, 0.2’ wide, 0.91’ high	104	
2003-2-177		Concreted copper pipe	0.5’ long, 0.38’ high	105	
2003-2-178		Wood fragment	0.74’ long, 0.31’ wide	106	
2003-2-179	96COM035	Concreted iron pipe w/flange	2.0’ long, 0.6’ wide, 1.4’ high	107	Serbousek
2003-2-180		Cap and shell casings	assorted, see photo	N/A	Serbousek
2003-2-181		Large cupric steam pipe	7.0’ long, 0.7’ wide, 9.5’ high	111	Serbousek
2003-2-182		Air chamber	1.25’ long, 1.65’ wide	108	
2003-2-183		Marine head	0.6’ long, 0.6’ wide, 0.65’ high	109, 110	

Accession No.	Old No.	Artifact	Dimensions	Drawing No.	Donor
2003-2-184	96COM100	AT Babbit block	see drawing	7	Serbousek
2003-2-185	96COM037	Small boat anchor	see drawing	6	Serbousek
2003-2-186	96COM199	.45 caliber Remington rifle	see photo	N/A	Serbousek
2003-2-187		Bronze spike fragment	0.28’ long, 0.04’ wide	16	
2003-2-188		Bronze spike fragment	0.45’ long, 0.04’ wide	16	
2003-2-189		Bronze spike fragment	0.17’ long, 0.03’ wide	16	
2003-2-190		Bronze spike fragment	0.085’ long, 0.04’ wide	16	
2003-2-191		Bronze spike fragment	0.14’ long, 0.04’ wide	16	
2003-2-192		Bronze spike fragment	0.2’ long, 0.035’ wide	16	

Appendix C:

TITLE JUDGEMENT

UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF FLORIDA
ORLANDO DIVISION

"IN ADMIRALTY"

PONCE DeLEON INLET LIGHTHOUSE PRESERVATION ASSOCIATION, INC. and DON SERBOUSEK,

Plaintiffs,

-against-

THE UNIDENTIFIED, WRECKED, AND ABANDONED VESSEL, HER TACKLE, ARMAMENT, APPAREL AND CARGO, LOCATED AT COORDINATES 29° 12.23' N. LATITUDE AND 80° 46.44' W. LONGITUDE, BELIEVED TO BE THE STEAM VESSEL COMMODORE,

Defendant.

Case No: 98-1299-CIV-ORL-18A

ORDER THAT: (1) VESSEL BE STORED WITHOUT KEEPERS; (2) PLAINTIFF PONCE DeLEON INLET LIGHTHOUSE PRESERVATION ASSOCIATION, INC. BE APPOINTED SUBSTITUTE CUSTODIAN OF ARTIFACTS RECOVERED FROM THE VESSEL

It is hereby

ORDERED, that after seizure of the defendant Vessel in accordance with the *In Rem* Warrant of Arrest issued by the Court, the United States Marshal for the Middle District of Florida shall permit the Vessel to be "stored without keepers,", i.e., there is no

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need for the marshal, his deputy, a security guard, or any other person to guard the Vessel during the period of its arrest; and it is further

ORDERED, that plaintiff Ponce DeLeon Inlet Lighthouse Preservation Association, Inc. (the "Association") is hereby appointed substitute custodian of any artifacts that it recovers from the Vessel, and that the Association is to keep such artifacts in its custody and safekeeping until further order of this Court, preserving and protecting them in the manner described in the Verified Complaint.

Dated: December 28, 1998

Kyle R. Spaulding
United States ~~District~~ Judge
Magistrate