

**ANALYSIS OF THE PASS CAVALLO SHIPWRECK ASSEMBLAGE,
MATAGORDA BAY, TEXAS**

A Thesis

by

AMY ANNE BORGENS

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

May 2004

Major Subject: Anthropology

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ABSTRACT

Analysis of the Pass Cavallo Shipwreck Assemblage,

Matagorda Bay, Texas. (May 2004)

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A survey conducted in February of 1998 located an anomaly originally believed to be the remains of *L'Aimable*. *L'Aimable* was one of four ships utilized by Rene-Robert Cavelier, Sieur de La Salle, for his voyage to colonize the Gulf Coast in 1684. The anomaly, a wrecked vessel with a heavy iron signature, was located outside the entrance to the historic pass into Matagorda Bay, Texas. Artifacts were extracted from the wreck site to aid in the identification of the vessel, which was subsequently determined to be more recent in origin. A preliminary examination of the artifacts indicates that the shipwreck dates to the first half of the 19th century.

The survey recovered over two hundred artifacts. The assemblage of artifacts includes over 80 lead shot, over 40 examples of brass firearm furniture, over 15 firearm fragments, several pieces of copper sheathing, and iron bar stock. Almost two-thirds of the material is associated with small arms. The majority of the identifiable firearms are military arms of three patterns: the British Short Land Pattern, the British India Pattern, and the Model 1757 Spanish musket.

Historical research has determined that these arms were circulating in Texas, New Orleans, and Mexico, as early as 1815. The British pattern arms were both

purchased for the Mexican army in the 1820s and used by the British Infantry in the Battle of New Orleans in 1815. The 1757 Spanish musket was used chiefly by Spanish expeditionary forces in North America in the late 18th century.

Evidence garnered from the artifacts suggests that the firearms were shipboard cargo onboard a small, wood-hulled sailing vessel that wrecked between the years 1815 and 1845. Archival and historical research isolated nine wreck candidates for this period. Historical research and artifact analysis suggest the *Hannah Elizabeth* as the primary candidate for this wreck site. The *Hannah Elizabeth* was a small merchant schooner from New Orleans laden with a munitions cargo for Texas troops stationed at Goliad. The vessel wrecked at the entrance of the historic Pass Cavallo while evading capture from a Mexican brig-of-war in November of 1835.

I would like to dedicate this work to Nicholas Cramer, Gordon Young, and my mom.

Without their guidance and encouragement, I would probably still be a waitress.

ACKNOWLEDGMENTS

There are many people I would like to express appreciation to for their guidance and support with this project. Jim Bruseth and Steve Hoyt of the Texas Historical Commission, and Donny Hamilton, Helen Dewolf, and Jim Jobling of the Conservation Research Laboratory (CRL) at Texas A & M University, helped this project to become a reality. Helen Dewolf provided invaluable conservation direction and assistance, as well as constant encouragement and support. John Hamilton, also of the CRL, provided invaluable conservation assistance and persistent comic relief (especially necessary for the demands of this project).

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Incredibly important to this study was assistance from fellow archaeologists and scholars, Kevin Young of Texas Parks and Wildlife; Martin Pegler, Head Curator of Tower Arms at Leeds; Jay Blaine, field archaeologist and specialist in trade arms; and Greg Dimmick, Joe Hudgins, and Terry Keiler, vocational archaeologists who have worked on Mexican military sites in Texas. Appreciation is also extended to Richard Winder and Newton M. Warzecha, curators of the collections at the Alamo and La

Bahia, respectively, for discussion and overview of artifacts in the collections. Mike Lea of the Ohio Historical Society and Peter Stines were invaluable in the identification of the lone pistol from the survey.

Archival documentation was accessed through the use of the Center for American History at The University of Texas at Austin, the Cushing Memorial Library at Texas A&M University at College Station and through the DeGolyer Library at Southern Methodist University in Dallas, TX. Associate director David Chapman and director Russell L. Martin III of the Cushing and DeGolyer Collections, respectively, provided excellent assistance and enthusiasm with research associated with those collections.

As for my friends . . . Nicholas, Valerie, Michael, Jimmy, Brian, Chad, John (maaaaah), Lillie (my little sis), and Melanie . . .for the countless hours endured listening to me discuss this thesis – there is no thanks enough. Ya’ll, I am sure, rival my knowledge of Texas history, just through the osmosis of our constant discussions. Your wonderful friendship and support kept me going. To Nicholas, Valerie, and Michael, many kudos for editing assistance. Nicholas Cramer has the singular distinction of having provided unfailing emotional support for the duration of this project, in spite of difficulties. There is not enough gratitude for this gift. And for my mom, for just being mom. Thanks everyone.

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CHAPTER I

INTRODUCTION

In the spring of 1998, a collection of artifacts was recovered from a shipwreck off of the Texas coast near Pass Cavallo, the historic entrance to Matagorda Bay. This area experienced an increase in maritime traffic in the 18th century and, during the mid-19th century, was considered to be one of the four greatest ports in Texas and the second best natural pass on the Texas coast.¹

Almost 200 artifacts were collected in two surveys of the site conducted in the spring and summer of 1998. The variety and number of arms materials recovered suggest the vessel was a gunrunner or military supply vessels for one or more of the presidios in south-east Texas. Three principal arms types, of known military patterns, were identified from the survey artifacts.

The wreck lies in Pass Cavallo, an access route to the ports in Matagorda and Lavaca Bays. These bays, in the 18th century, were significant in supplying both the mainland and inland settlements. The nearest fortified settlement, the presidio at La Bahía, was founded in 1722 on the former site of La Salle's Fort St. Louis.² The presidio was reestablished at Goliad in 1759.

Between the years 1782 and 1810, Matagorda Bay experienced an increase in

¹This thesis follows the style and format of the *Southwestern Historical Quarterly*.

maritime traffic.³ Ships so regularly called upon the ports at San Bernardo and Matagorda that native tribes would often lie in wait along the shorelines for ships in distress.⁴ At the peak of its growth in 1796, La Bahía had 1138 residents.⁵ In the years following 1796 the population at La Bahía declined steadily due to conflicts with indigenous tribes and a lack of irrigation.⁶

THE SURVEY

The wreck was discovered during a survey conducted by National Underwater and Marine Agency (NUMA) in the spring of 1998. A combined aerial and magnetometer survey was conducted of the Pass Cavallo area from December 1997 to August of 1999 in an attempt to locate the wreck of the French ship *L'Aimable*. The survey area covered 4.81 nautical miles north to south and 2.12 nautical miles east to west. The investigations located 66 potential targets, of which 18 were identified to be possible wreck sites. Ten of these sites are tentatively identified as 20th-century wrecks, five from the 19th century, two from the 18th century, and one could not be identified due to its depth under twenty-six feet of sediment. The wreck site which is the focus of this study, 41CL92, was isolated at POC 4 (Port O'Conner target 4) in February of 1998.⁷

Two artifacts, encased in concretions, were recovered for analysis and identification. These artifacts were x-rayed at the Conservation Research Laboratory



Figure 1. Pass Cavallo Survey. Steve Hoyt and Craig Lavink prepare the magnetometer during the 2001 survey. *Photography by A. Borgens.*

(CRL) at Texas A&M University. The identification of the concretions as a flintlock musket fragment and pistol encouraged a second survey during the summer of 1998.

A second site, Target 3, was located nearby and may be associated with the current shipwreck. Target 3 has evidence of a possible capstan and flat iron bar stock.⁸ The distance between the two sites is approximately 211 meters.⁹ This site has not been revisited and its connection to Target 4 is still unknown.

Personnel from the Texas Historical Commission (THC) and the Southern Underwater Archaeological Society (SUAS) conducted a third survey of the site in the August of 2001 (fig. 1). The objective of the survey was to check the condition of the site, which had lain exposed on the ocean floor. The location of the wreck site is within

a region constantly influenced by storm patterns and ocean currents. As of August of 2002, the site is no longer exposed and is buried under approximately four to six feet of sediment.

MODERN AND HISTORIC MATAGORDA SHORELINES

Through comparisons with aerial photos, old maps and recent charts, researchers involved in the 1997-1999 survey ascertained the relative location of the historic shoreline against the modern landscape. The eastern end of Matagorda Island has changed little in the last 300 years, whereas the southeastern tip of Matagorda Island has eroded substantially. The changes in the shoreline on the southwestern tip of Matagorda island vary from a few hundred feet in some areas to as much as 1000 feet westward in other areas. The channel into Matagorda Bay is hypothesized to have changed little from 1685 until after 1965. The channel width during this time appears to have been approximately 600 meters (1,968 feet).¹⁰ Over time the sand around Pelican Island accreted, connecting it to the eastern tip of Matagorda Island.¹¹

A study conducted in 1976 determined that the Matagorda area shoreline has chiefly been in an erosional state since 1846. According to this study the yearly erosional average was about 11 feet, with the total land loss for the 100 year period (1856-1956) being about 1,575 acres.¹² A series of storms in the late 1800s caused a

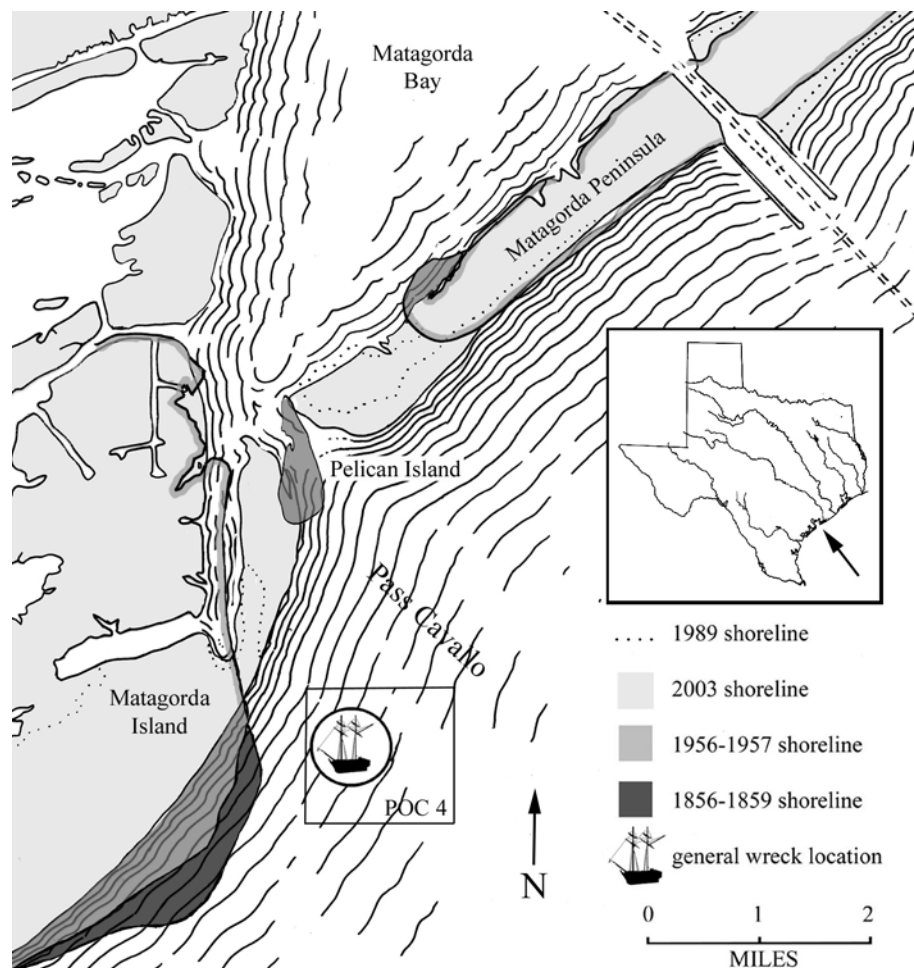


Figure 2. Pass Cavallo Shoreline. Indication of changing shoreline and target survey area. *Illustrated by A. Borgens after NOAA chart 11316 (1989, 2003) and Matagorda Bay System: Marsh Distribution 1856-1859 and 1956-1957 in McGowen and Brewton, Historical Changes, insert.*

tremendous amount of erosion at the north end of Matagorda Island. Erosion in this area varied from 600 to 1,300 feet and was responsible for the final demise of Fort Esperanza as well as some local housing.¹³ Construction of a jetty was proposed to protect the island from further erosional damage. Though 1,325 feet of the jetty was completed by 1882, a storm in 1886 damaged part of the jetty and destroyed the town of Indianola, the

only major port in Matagorda Bay. With the destruction of the city, commercial shipping interests greatly declined thus negating the continued construction of the jetty. Renewed interests in the area forced the dredging of the pass in 1949 wherein the pass was widened to 135 feet (bottom width) and deepened to 17 feet.¹⁴

Difficulty in controlling the physical characteristics of the Pass led to the creation of the Matagorda ship channel that commenced in 1962 and concluded in 1966.¹⁵ At the time of these studies, the dredging of a ship channel in the Matagorda Peninsula (in 1965) had not greatly altered the shoreline for inclusion in the study, though it was observed that the Pass had begun to shoal.¹⁶ It is apparent, even from modern maps, that the creation of the ship channel in the Matagorda Peninsula has altered the shoreline, especially on the eastern perimeter of Matagorda Island.

The change in the shoreline, and the location of the site compared to the modern and historic map interpretations are reflected in figure 2. This map only illustrates shoreline changes that occurred in the areas adjacent to Pass Cavallo. It is immediately apparent that the creation of the ship channel has dramatically altered the Matagorda area coastline. The southeast corner of Matagorda Island has eroded away substantially as the northeast corner has accreted into Pelican Island. Matagorda Peninsula has accreted westward. The continuation of the coastal changes at Matagorda Island and Peninsula should eventually cause the historic pass to vanish altogether. The location of the wreck, historically, was approximately $\frac{3}{4}$ of a mile southeast of the southwest corner of Matagorda Island.

THE WRECK SITE

The surveyed site lies on the ocean floor, at a depth of approximately six and a half meters. When initially located, the site was exposed unlike many other sites found in this area.¹⁷ Since the discovery of the wreck and the second survey, a subsequent visit to the site in September of 2001 has shown that the remnants of the vessel are buried under two to four feet of sediment. A total of ten datum points were established around the wreckage. The outlying areas were visually surveyed which determined that the entirety of the shipwreck was located within the perimeter of the datum points.¹⁸ The site perimeter is relatively small, being only about 52 feet (16 meter, the distance between datums 1 and 5) at its greatest length with an 'east' to 'west' directional emphasis.

The sand underlying the wreck was prodded to locate possible hull remains, if any, which may have been buried under the artifacts. This search yielded no apparent structural hull remains, however, a fragment of planking was found still attached to its copper sheathing (artifact 14925).

Artifacts were collected from within a half-meter radius of each of the established datum points (fig. 3).¹⁹ The distribution of the artifacts does not appear to demonstrate any sort of pattern. Most of the artifacts collected were located around datums 1, 2, and 3. The two rigging elements were recovered on the 'west' side of the wreckage, at datums 1 and 2. The assorted firearm pieces were dispersed all around the wreck site, not appearing to have been congested in any single area.

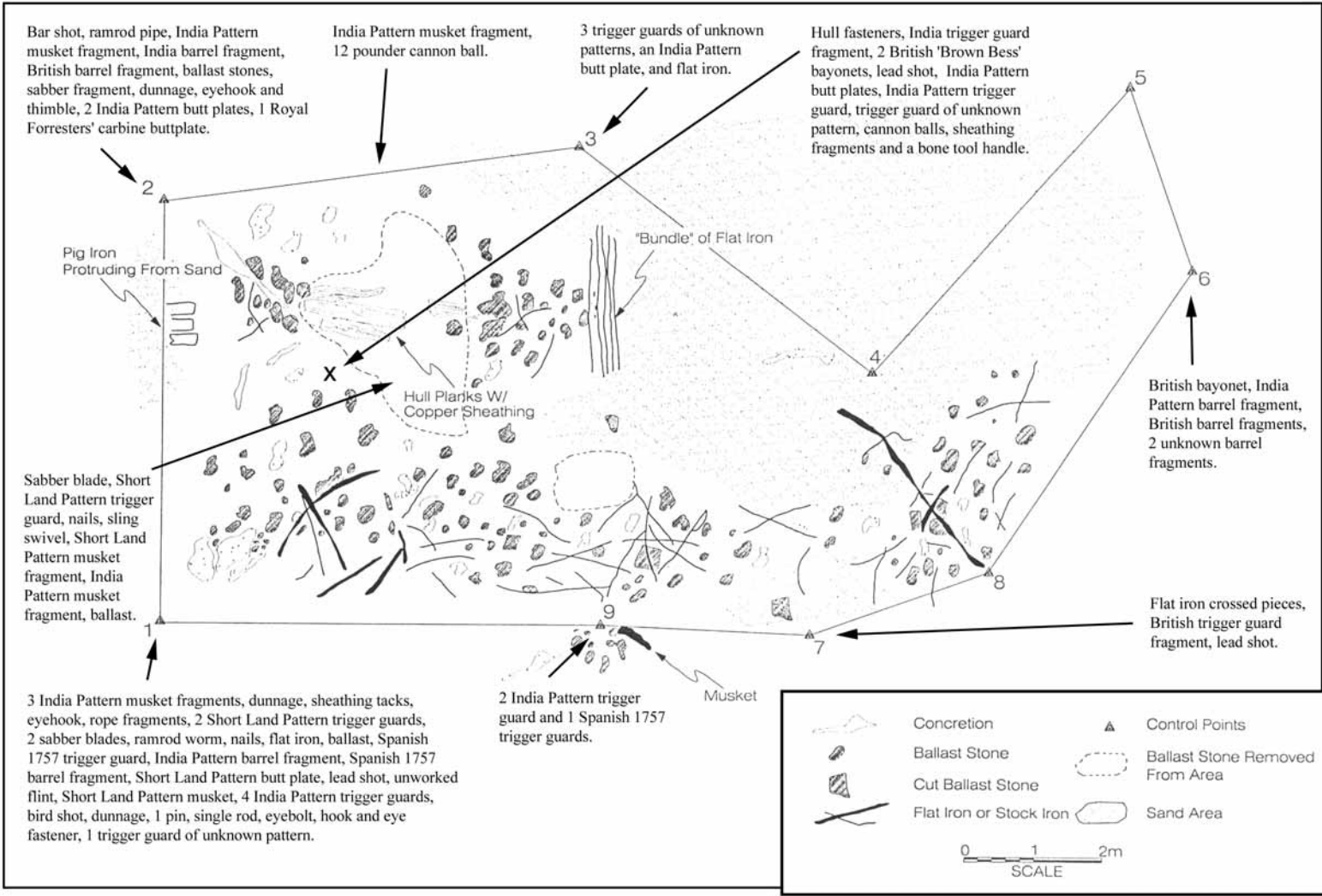


Figure 3. Site Map. Rough map of the wreck site with the established datum points. Map also shows general distribution of artifacts. Artifact distribution information added by A. Borgens. *Map provided courtesy of the Texas Historical Commission.*

The artifacts recovered during the survey were examined to provide a date and/or identification for the wreck. Many of these artifacts were encrusted conglomerations of firearm pieces. Trigger guards, lockplates, locks, barrels, ramrod fittings, and sideplates were sometimes all contained within a single concretion. These pieces often did not comprise a single weapon, but were rather parts from multiple firearms. If these composite artifacts are considered in terms of the number of firearm parts they encompass, then the majority of artifacts recovered from the Pass Cavallo shipwreck are firearms or weaponry. Other artifacts recovered from the wreck include stone and iron ballast, iron bar stock, rigging implements, cannonballs, and lead shot.

NOTES

¹ An observation made by Francis Sheridan, a traveler to Texas who provided detailed descriptions of the Texas ports, in 1838 - 1839. Richard V. Francaviglia, *From Sail to Steam, Four Centuries of Texas Maritime History* (Austin, Tex.: University of Texas Press, 1998), 145 and Robert A. Morton and Mary J. Pieper, *Shoreline Changes on Matagorda Island and San Jose Island (Pass Cavallo to Aransas Pass): An Analysis of Historical Changes of the Texas Gulf Shoreline* (Austin, Tex.: University of Texas Press, 1976), 11.

² La Bahía is the Spanish name for Matagorda Bay. Donald E. Chipman, *Spanish Texas 1519 - 1821* (Austin, Tex.: University of Texas Press, 1992), 124, 126.

³ Kieth Guthrie, *Texas' Forgotten Ports*, vol. 1, *Mid Gulf Coast Ports from Corpus Christi to Matagorda Bay* (Austin, Tex.: Eakin Press, 1988), 114.

⁴ *Ibid.*, 37.

⁵ Chipman, *Spanish Texas*, 206.

⁶ *Ibid.*

⁷ Ralph L. Wilbanks, Wes Hall, and Gary E. McKee, *Search for L'Aimable* (Scottsdale, Ariz.: National Underwater and Marine Agency, 2000), 1.

⁸ *Ibid.*, 28.

⁹ Steve Hoyt, conversation with author, 4 February 2003.

¹⁰ Wilbanks et al, *Search for L'Aimable*, 5.

¹¹ *Ibid.*

¹² J. H. McGowen and J. L. Brewton, *Historical Changes and Related Coastal Processes, Gulf and Mainland Shorelines, Matagorda Bay Area* (Austin, Tex.: University of Texas, 1975), 16.

¹³ Morton and Pieper, *Shoreline Changes on Matagorda Island*, 12.

¹⁴ *Ibid.*

¹⁵ *Ibid.*

¹⁶ McGowen and Brewton, *Historical Changes*, 20.

¹⁷ Steve Hoyt, conversation with author, March 1999.

¹⁸ *Ibid.*

¹⁹ Steve Hoyt, letter to the author, Aug. 19, 1999.

CHAPTER II

PROCUREMENT AND USE OF ARMS IN TEXAS

The assortment of small arms from the Pass Cavallo wreck represents a range of manufacturing dates and origins. All of the identifiable weapons collected from the wreck site, with one exception, were produced in Spain and Britain. The earliest dateable firearm from the artifact collection is the Spanish military longarm, the Model 1757 military musket. This weapon was continuously manufactured, with few changes, until the reversion to the miquelet lock in 1791.

The assortment of British arms represents two primary patterns: the Short Land Pattern, produced in the second half of the 18th century, and the India Pattern, produced at the end of the 18th century and into the early 19th century. British and Spanish arms acquired during the 18th century were all still in use in Mexico during the Mexican-American War in 1846. The firearms represented by those from the Pass Cavallo wreck were collectively manufactured over a period of 75 years and in many cases individual arms were in use for an equal or longer duration. To find the most probable period for the use of the arms in Mexico and Texas, an overview of the supply of arms to these regions is henceforth provided.

ARMS IN NEW SPAIN

The arrival of arms in New Spain was necessitated by the establishment of the presidio system and the need for protection from the hostile frontier environment. The Spanish frontier soldier, occupying the presidio, originally relied heavily on shields and edged weaponry: primarily the lance and a short sword called *espada ancha*.¹ These soldiers were outfitted in heavy leather jackets, which acted as protection against projected arrows.²

The introduction of firearms into northern New Spain was slow and not without trepidation.³ The reliance on the traditional edged weapons was commonplace as the firearms were often unusable due to neglect and poor maintenance.

Attempts to reform and improve the frontier military are exemplified in the regulations of 1772. In addition to the establishment of military procedures in New Spain, was the adoption of specific standardized arms. According to Title Four of the Regulations, each presidio soldier was to be armed with a broad sword, lance, shield, musket, and pistols. The regulation musket was to have a 38 ½ inches (97.44 centimeters) barrel of .66 caliber with a Spanish-style (miquelet) lock.⁴ The pistol was to have a barrel not exceeding 10 inches (20.5 centimeters) in length, of .66 caliber, and was to also be equipped with a Spanish-style lock.⁵ According to Faulk, despite the regulation's insistence on weapons with Spanish locks, weapons of French and British manufacture were commonplace.⁶

The regulations were stated on paper, but not necessarily carried out in practice.

The weapons described in the regulations were only just arriving in Sonora in 1780 and by the 1790s many presidios still had not received the new model.⁷ Despite appearances, the presidio soldier was often under-equipped, ill trained, and impoverished. In 1780, Commandant General Croix stated in a decree that soldiers were selling their rifles and pistols in order to supplement for goods they had been cheated on.⁸

The predominant firearm used by the presidio soldier was the Spanish escopeta. There were many variations in barrel length and stock design but frequently this weapon was a smoothbore muzzle-loading musket or carbine with a Catalan stock and a Spanish (miquelet) lock.⁹ The Catalan or *trabucos* was the name for an escopeta with a miquelet lock, a stock with a hook at the bottom, and a gracefully tapering barrel.¹⁰ Another variation of the escopeta was equipped with a special lock manufactured in Madrid. This type of lock appeared French in design but its internal mechanism was closer to the Spanish style lock.¹¹ The production of this lock was so closely associated with its production in Madrid that it was termed the Madrid lock. Escopetas with Madrid locks were also different from the *trabucos* as they had flat heavily fluted stocks.¹² Invariably the escopetas could be manufactured in a variety of styles and sizes. Another description of the escopetas used in New Spain describes this weapon as a .69 caliber, 54 ½ inch long firearm, with an octagonal barrel weighing 7 pounds, and with brass furniture. The flintlock lockplate on this firearm measured 5 ½ by 1 ½ inches.¹³

Many of the regiments in New Spain were armed with the Model 1757 and 1791 military muskets. Spanish expeditionary forces, colonial regiments, and militia in

Mexico, Louisiana and Florida were equipped with these longarms.¹⁴ The 1757 musket was an almost direct copy of the French Model 1756 military musket.¹⁵ The Model 1757 longarm was a .69 caliber weapon with an overall length of 59 ¼ inches. The barrel was octagon in shape at the breech but tapered to round. The flat lockplate was French in design with a ring jaw screw. The lockplate on the musket measured 6 ½ by 1 ⅜ inches.¹⁶

French and British weapons were also purchased by the Spanish government for the soldiers in New Spain. An example of an English military carbine of about 1812 recovered in Arizona has a short smoothbore barrel measuring 22 inches in length with a caliber of .80.¹⁷ The flintlock is stamped with the mark of the Tower of London (TOWER).¹⁸

In addition to the soldiers recruited for the presidios, most of who were of native decent,¹⁹ on occasion Spain also sent expeditionary troops to New Spain. The Spanish company of Catalonian volunteers, comprised of officers and 100 men, was sent to Northern New Spain in 1767.²⁰ By the end of the 18th century, these troops had withdrawn from California and relocated to Mexico.²¹ The first company of Catalonian volunteers disbanded in 1810 following the first Mexican revolution.²² The Catalonian volunteers were affected by shortages in military arms. The new arms mandated in the 1772 Regulations were only just being delivered, on the frigates *Princes* and *Aranzazu*, in March of 1790.²³ The new muskets and bayonets were supplied on the condition that the older arms be returned for repairs.²⁴ Weapons for the presidio soldiers in New Spain were stored in four arsenals: San Blas, Arispe, Chihuahua, and San Luis Potosi.²⁵

It is likely that many of the Spanish expeditionary soldiers could have been carrying British military arms. The Spanish army was ill-equipped to resist the French invasion of Spain during the Peninsular War of 1808-1814. Great Britain supplied aid to Spain in the form of military weapons and uniforms. During the period from May 1808 to May 1809 alone, Great Britain supplied Spain with, among other items, 200,277 muskets, 61,391 swords, 79,000 pikes, and 921,000 uniforms.²⁶ Military arms and edged weapons collected during Peninsular military campaigns could have been carried to New Spain through the deployment of expeditionary forces in the early 1800s.

In the first two decades of the 19th century the Native American threat in New Spain was exacerbated by foreign intrusions in the form of filibuster expeditions and an internal revolt. A coup organized by Juan Bautista de las Casas in January of 1811 resulted in a series of raids in San Antonio, Nacogdoches, and La Bahia.²⁷ Las Casas was arrested and later executed after 400 Mexican troops surrounded and captured him at the governor's mansion in San Antonio.²⁸ In January of 1812 more Spanish troops arrived in Veracruz to suppress a civil uprising lead by José María Morelos y Pavón.²⁹

Filibustering expeditions in 1812-1813 led by Bernardo Gutiérrez de la Lara and Augustus Magee inspired several military encounters with the Spanish military, principally at Salcado River and at the battle of Medina, in Texas.³⁰ Another filibuster expedition in 1817, this time organized by Henry Perry and Xavier Mina, in cooperation with the pirate Louis Aury, focused on the regions of Texas and Soto de Marina, Mexico.³¹

The increased military activity in Texas brought with it increased requests for arms supplies. Antonio Martínez, the last Spanish governor of the province of Texas, constantly requested munitions as he closely watched the Native American and filibuster movements. Even a cursory perusal of the letters written by Martínez demonstrates the phenomenal lack of equipment and sundry supplies encountered in the presidios of the northern frontier. Martínez made repeated requests for iron, arms, and clothing, even stating that some men are “absolutely unclothed”.³² One of Martínez’s earliest observations of the troop’s condition, stated in a letter written four days after assuming the position of provincial governor, described the men as “not really soldiers, since they are afoot without supplies . . . so that not only do they suffer from lack of food but their families likewise go hungry”.³³ The inability of the Spanish government to keep the presidio soldiers adequately supplied led to frequent desertions. In June of 1820, 311 men were reported to have deserted the campaign division.³⁴

A few arms were acquired from the defeat of Perry’s expedition in June of 1817, but the requests for weapons went unabated.³⁵ Three months later, in September of 1817, Martinez was notified of Arredondo's remittance of 100 new English weapons with 30,000 shot, and 1,200 flints.³⁶ This shipment of supplies was acquired from the stores at the Rio Grande and arrived on September 20th, though Martinez was shorted 90 cartridges.³⁷ In January of 1818, an additional 100 guns (specifics not indicated) were sent from the Rio Grande though they were not new nor in good condition, as advertised.³⁸

Occasionally firearms were gained from encounters with the native tribes. These

arms often were not usable to the presidio soldier, due to their smaller caliber size, and were in many cases redistributed to the local residents.³⁹

NATIVE AMERICAN TRADE GUNS IN NEW SPAIN

The dependency on the traditional weapons, combined with ineffectual training, and the poor condition of arms often left the frontier soldier at the disposal of the Native tribes.⁴⁰ Since the Native American tribes were supplied with superior arms from traders, they were frequently much better armed than the presidio soldier. Prior to 1763 and the defeat of the French in North America, trade guns were French in manufacture, however after 1763, British traders supplied the trade arms.⁴¹

The Spanish supplied the Native Americans with Spanish arms in 1786 under deceitful auspices. It was believed the tribes, unfamiliar with the Spanish trade guns, would not be as effective with the arms. The supply of munitions, in addition to maintenance of the arms, could only be acquired from the Spanish. Spain was determined not to provide these services once the arms were traded. This did not work in practice, as the tribes refused the arms. By the 1790s, Spain traded weapons of English manufacture.⁴²

The Spanish government issued permits to traders such as The Company of Explorers of Upper Missouri (in 1795) and Auguste Choteau for the establishment of trading posts in New Spain.⁴³ Surplus Brown Bess carbines and muskets were

frequently sold and used by the Spanish.⁴⁴ According to Hanson, these firearms furnished much of the supply for the Southwest.⁴⁵ He feels that it is also unlikely the traders of New Spain would contract for English “Northwest guns” which were manufactured for trade in the New World. These weapons were new and thus were governed by import restrictions and would have sold best where there was a ready market.⁴⁶

Firearms produced for trade with the North America tribes were very distinct in character, often decorated with serpentine sideplates and of a smaller caliber. Trade guns manufactured for distribution in the northern colonies by the British Board of Ordnance also conformed to this more decorative appearance.⁴⁷ They were a departure from similar weapons produced by the Board for British military use.

MEXICAN ARMS

Immediately following The Mexican Revolution of 1821, Mexico acquired a quantity of arms from U.S. interests in the early 1820s. Texas governor Trespacios negotiated a contract with Hawkins & Hanna, in October of 1822, for the purchase of guns, ammunition and clothing in the United States.⁴⁸ These supplies could possibly have been the items shipped on board the American frigate *Fortina*. The *Fortina* departed for Mexico in 1823 with a cargo of artillery, muskets, and naval stores for the Mexican fleet.⁴⁹

The purchase of new arms for independent Mexico was conceived as part of an initiative to gain financial assistance from England. Dr. Patrick Mackie, an envoy of the British government, arrived in Mexico in July of 1823 in order to establish commercial activity between the two countries.⁵⁰ Acting on behalf of Minister (of foreign affairs) Almán, General Guadalupe Victoria requested an advance of £150,000 each month for a year and equipment for 50,000 infantry and 22,000 cavalry.⁵¹

Concurrent with this development was the offer by a representative of the London House of Barclay, Herring, Richardson, and Company to extend to Mexico a 6% loan. The Mexican government would receive £2,500,000 at the rate of £100,000 a month.⁵² Despite Mackie's attempt to organize the original proposal through the B. A. Goldschmidt & Company, the Barclay proposal was accepted on August 18, 1823.⁵³ The final redrafted contract was ratified and signed on August 25, 1824.⁵⁴ A draft of the contract for the purchase of fusils, carbines, pistols, and swords from Barclay, Herring, Richardson & Company was sent to Bartolome Viogor Richards on December 5, 1823.⁵⁵ The ships and arms discussed in the 1823 contract cost nearly £1,400,000.⁵⁶

In 1824, Mexico began to acquire the new arms. Of the arms contracted with Barclay, Herring, Richardson, & Co., 7,500 muskets and 200 swords were to depart from England on July 29, 1824.⁵⁷ On August 15, 1824 Michelena was informed of the departure of the ship *Prince of Wales* from Antwerp (Belgium) for Alvarado (Mexico) laden with 30 boxes of muskets consigned to Ruess and Kirchhoff.⁵⁸

The muskets purchased in the Barclay contract were described as the best that Mexico had yet acquired and that they were comparable to those of the Tower of

London. A similar shipment of the arms received in Columbia was described as excellent.⁵⁹ The model and make of these arms is not identified. British, Spanish, and French arms were already present in Mexico as they were purchased for military use during Spanish domination.⁶⁰ The superior arms indicated in the contract were most likely surplus military arms or unused discontinued patterns, such as the British Short Land Pattern muskets, British India Pattern muskets, and/or East India Co. Windus Pattern muskets. These patterns were rendered obsolete by the introduction of the New Land Pattern in 1815.⁶¹

The importance of these early flintlocks was further diminished by the introduction of percussion arms in the 1830s. The British Royal Navy ordered the conversion of flintlock arms to percussion locks in 1832.⁶² Even the older Short Land Pattern might be seen as superior to the earlier British pattern firearms being used by some presidio soldiers.

By November of 1817 the Board of Ordnance was offering surplus India Pattern arms for sale to the East India Company. The East India Company refused the offer.⁶³ Though documentation regarding the sale of Board of Ordnance arms have not been discovered, it is probable that by 1823 these arms were reduced in price and were thus affordable to the economically pressed Mexican government.⁶⁴

The British Short Land Pattern musket was the most generally used military musket until this pattern was superceded by the India Pattern produced in 1791. The East India Company had been producing this particular pattern for the British troops in India since 1771.⁶⁵ With the onset of the Napoleonic Wars in 1793, the Board of

Ordnance realized its arms stores were insufficient for the needs of its military. In order to supplement for the shortage of arms, the Board of Ordnance purchased the arms stores of Windus Pattern muskets from the East India Company. To facilitate arms supplies and maintenance, British arms contractors were instructed to manufacture the British military arms to conform to the East India Co. Windus Pattern design. At least 676,800 of these arms were produced by the East India Company and approximately 2,800,000 were manufactured for the British Board of Ordnance.⁶⁶ According to Harding, these weapons were the most numerous and widely manufactured British musket ever produced.⁶⁷ The India Pattern weapons would become the general firearms of the line regiments from 1815 until the late 1840s.⁶⁸

The India Pattern musket produced by the East India Company (Windus Pattern) was a .76 caliber, smoothbore musket with a rounded 'hook-shaped' side plate, step-tapered buttplate, and acorn finial triggerguard of brass. The overall length of the musket was 55 inches with a weight ranging from 9 pounds 6 ounces to about 10 pounds. The flintlock lock had both a swan-neck cock (1771-1812) and ring-neck cock (1813-1818) on a lockplate measuring between $6 \frac{2}{3}$ inches by $1 \frac{1}{10}$ inches and $6 \frac{9}{10}$ inches by $1 \frac{1}{4}$ inches.⁶⁹

England shipped a collection of India Pattern arms and Pagent carbines to Mexico in late 1825. As before, Mexico acquired these weapons along with bank loans, in exchange for trading privileges and no taxation on English imports.⁷⁰

An inventory of the small arms used by the Mexican troops in 1827 listed 111,564 muskets, 2,000 rifles, 15,280 carbines, and 8,000 pairs of pistols.⁷¹ H. G.

Ward, the British Charge D' Affaires in Mexico, reported that the Mexican military of that year consisted of 58,955 men, of whom 32,161 were active.⁷²

In 1829, the Spanish government mobilized an expeditionary army in an attempt to overthrow the newly established Mexican government. The presence of a Spanish fleet off of the Gulf Coast, comprised of fourteen ships,⁷³ alarmed the Mexican government. Initially unaware of the intended destination of the Spanish troops, the province of Texas was militarily reinforced in the case of a Spanish invasion.⁷⁴

Following the defeat of the Spanish army by Santa Anna in 1829, Mexico continued to supply Texas with munitions and supplies at regular intervals. For example, supplies for the troops in Matagorda Bay arrived in March, August, October, December of 1830, and in January of 1831.⁷⁵ The troops in Matagorda Bay were receiving supplies every few months in 1830-31. These supplies were received in Matagorda, Lavaca, Bexar, Goliad, and would have been landed at Matagorda Bay, Copano Bay, and points in Lavaca Bay.

Revolts in Tampico, Tabasco, and the Yucatan would follow in the early 1830s, but the not so distant conflict with colonial Texans would find Mexico militarily unprepared for armed engagement. Both the Mexican government and the provisional Texas government would scramble to locate cheap and readily available firearms for their armies.

By the middle 1830s, munitions factories in Mexico were no longer manufacturing arms.⁷⁶ The Mexican government had to look elsewhere for military arms supplies. Santa Anna was allotted 400,000 pesos, through forced loans, printed

bonds, and cash, for the purchase of arms supplies.⁷⁷ As before, Mexico turned to its British suppliers. In 1833 the British Board of Ordnance still had over 440,000 of the India Pattern arms in stock, of which 176,000 were serviceable.⁷⁸ The quantities of arms acquired from Great Britain would increase during the 1830s as Mexico recognized the colonial and American threat in Texas.

Zacateca, a wealthy Mexican principality, purchased British India Pattern muskets and British Baker rifles to arm their local militia.⁷⁹ In addition to the arms purchased for the military, Santa Anna would also acquire these weapons after stemming a Zacatecan uprising in 1835.⁸⁰

Archaeological evidence and contemporary studies have recognized that these arms, along with the small quantities of the Baker rifle,⁸¹ were very likely the arms purchased by Santa Anna to equip his troops for the Texas campaign.⁸² British muskets and/or musket furniture have been recovered from many terrestrial sites associated with the Texas Revolution. Gun parts have been found at the Mexican earthworks at Villita (Alamo siege),⁸³ from the battlefield at San Jacinto,⁸⁴ at La Bahía (Goliad),⁸⁵ from the site of the Texas armory of Post West Bernard,⁸⁶ and from campsite and trail of Filisola's retreating Mexican army.⁸⁷ A majority of the identifiable British arms collected from these sites are of the India Pattern.

Mexico would continue to purchase arms from Britain following the Texas Revolution, in the years just preceding the Mexican - American War. During this period, in 1842 and 1844, Mexico disputed Texas' independence and continued to raid Texan presidios.⁸⁸ Thousands of arms were purchased by the Mexican government in

the 1840s. D. Juan Manuel Lasqueti and D. Manuel Escandon were contracted for the purchase of 5000 muskets and 3000 terceloas in May of 1842.⁸⁹ On July 17, 1844 the Mexican Government negotiated a contract with D. Manuel Escandon, for the purchase of 10,000 British muskets priced at 11 pesos each for delivery to Veracruz. This contract was extended to include an additional 5,000 muskets and 5,000 carbines.⁹⁰

The continued Mexican military presence in Texas forced decisive action from the United States, once Texas was annexed in 1845. The United States victory in the Mexican-American ended Mexico's claim to Texas. Following the victory, the United States annexed Mexico's southwest territories, thus creating the United States' southern continental borders.

TEXAS ARMS

With the onset of the Texas hostilities in 1835, both Mexico and the provisional Texas government would be vying for similar supplies from the same origins and/or distributors.⁹¹ New Orleans would play a pivotal role in the supply of both armies. Not only were both Texas and Mexico recruiting naval seaman from this port, both sides were shipping supplies from New Orleans to strategic locations along the Texas coast. Often sites such as Copano Bay and Lavaca were being used by both armies intermittently as a drop off point for arms and armies.

Initially it appears the Texas volunteer army provided many of their own weapons or acquired them in armed conflicts. From the assault on Anahuac in January of 1835, one of the first military engagements of the Republic battles to follow; the Texans acquired 64 stands of muskets. A stand of muskets referred to the musket and its accompanying bayonet. These muskets were later reported by General Cos of the Mexican army, either truthfully or not, to have been sold.⁹² The Texas Provisional Government ordered a supply of muskets from New York, to be sent to Galveston via New Orleans, in August of 1835.⁹³ In the same month, the supply of arms was inventoried to be approximately 4,000 rifles, a few muskets, and 5 or 6 artillery.⁹⁴

The first arm of the Mexican army, 400 men under General Cos arrived at Copano Bay on September 21, 1836.⁹⁵ General Collingsworth and a group of volunteers would take the Mexican presidio at La Bahía in October of 1835 and acquire 150-200 stands of muskets, 100-200 bayonets, and 44 lances.⁹⁶ Arms acquired from the capture of the Mexican garrison at Béxar included approximately 500 muskets, 300 carbines, and a 24 pound artillery.⁹⁷ At the later battle of Conception, the Mexican army under General Cos was repulsed with the Texans gaining a brass 6-pounder and 30 muskets.⁹⁸ A detachment sent to capture the Mexican garrison at Lé Panteclan on the Nueces, returned on November 10, 1835 having captured cannons, arms, and munitions.⁹⁹ More arms were captured from an encounter with a force of Mexican army encamped on the bank of the San Miguel; 6 muskets, 2 swords, and 300 horses were seized in the conflict.¹⁰⁰ A number of British muskets were also captured from the Mexican army at the final battle at San Jacinto.¹⁰¹

At the onset of the revolution, the arrival of General Cos and the expectation of Santa Anna with 7,000 additional men initiated a steady influx of arms and volunteers into Texas. Volunteers for the Texas army arrived from across North America, including states such as Alabama, Indiana, New York, Kentucky, Georgia, Louisiana, and Tennessee. Often these volunteers came with their own arms. A volunteer regiment of 56 men with 50 first rate U.S. muskets traveled from Alabama to Washington on the Brazos in December of 1835.¹⁰² Eighteen more volunteers arrived from Kentucky with rifles in the same month.¹⁰³

Arms were also purchased for the Texas army. On October 11, 1835, 75 muskets arrived in Quintana, at the mouth of the Brazos River, from New Orleans.¹⁰⁴ More volunteers from New Orleans, along with 70 muskets and 7 field pieces would sail to Brazoria on board the schooner *Columbia* in 1835.¹⁰⁵ In 1836 McKinney and Williams paid \$3,476.28 for 1004 muskets.¹⁰⁶ One hundred rifles were purchased on November 24, 1835 by James Smith.¹⁰⁷ The public stores for the army of Texas were located at the mouth of the Brazos River. The firm of McKinney and Williams was in charge of military stores.¹⁰⁸

The Texas army also had access to the same India Pattern weapon Mexico was purchasing for their troops. It is assured that hundreds to thousands of British India Pattern muskets were left in New Orleans following the defeat of the British at the Battle of New Orleans in 1815, for it is known that the India Pattern arm was the primary weapon of the over 14,000 British troops engaged in the battle.¹⁰⁹ These may have been the source of some of the arms available for sale in New Orleans in the 1830s and the

three-thousand muskets offered for sale to Texas in 1836.¹¹⁰ The Texas purchasing agent, Ed Hall, shipped 48 British Tower muskets on the vessel *Good Hope* from New Orleans in 1836.¹¹¹

With the variety of weapons carried into, purchased, and captured for the Texas army, the predominant weapon appears to have been the musket. According to Michael Koury, the average Texan was armed with a musket.¹¹² Muskets were the firearm of choice, because of the added defense of the bayonet.¹¹³

At Post West Bernard, the location of the armory for the Republic of Texas, a variety of firearm materials have been recovered. Among the excavated artifacts from Post West Bernard there are parts to Models 1795, 1798, 1808, 1812, and 1816 U. S. manufactured muskets.¹¹⁴ U. S. military muskets of this period were a derivation of the French military musket manufactured in the States during the American Revolution in 1776. Prior to the War of Independence, muskets manufactured in the colonies were based on English patterns. At the onset of the American Revolution, the French supplied colonial troops with military arms and the colonial arms manufacturers followed suit by producing copies of the predominant French military firearm, the 1763 Charleville musket.¹¹⁵

Due to debt acquired during the revolution, Texas would not be able to afford new arms.¹¹⁶ In 1839, the arsenal was inventoried as having 850 muskets, separate from rifles, sabers, and Jaegers. These arms were left over from the military campaigns of the Texas Revolution.¹¹⁷

Col. W. H. Dangerfield was sent to purchase new arms and equipment for the

new first Regiment of the Texas army in December of 1838.¹¹⁸ These muskets, manufactured by Tyron Son & Co. of Philadelphia, were to U. S. army specifications.¹¹⁹ The Tryon & Son Co. muskets were of the exact same proportions and appearance as the 1827 Model Springfield muskets.¹²⁰ George Hockley purchased, for the Texas army, 1,500 stands of muskets, to be delivered monthly beginning in 1840.¹²¹ In addition to the Tyron muskets Hockley also negotiated the purchase of 250 Jenk's carbines.¹²² In the late 1830s the Texas government acquired supplies of Colt revolvers. General Dunlap purchased the Colt revolvers for the army in 1839.¹²³

CONCLUSION

Texas had a plethora of arms manufactured in both the United States and Europe. Due to the financial constraints of the regional governments, these arms were often antiquated or newly purchased surplus items. These firearms appear to have most frequently been standardized military patterns. The influx of arms into the region increased in the decade of 1817-1827 with filibustering and Spanish movements, than from 1832-1839 with the conflicts of The Texas Revolution. For the newly established Mexican governments these arms, generally speaking, were old Spanish arms and British surplus muskets. In contrast, Texas arms generally included anything acquired from Mexican troops, out of issue U. S. military muskets, Jenk's carbines, Jaeger rifles, and Colt pistols.

The arms from the Pass Cavallo shipwreck are surplus British military arms (especially the India Pattern) and old Spanish military muskets. The firearms conform to the types of weapons owned and purchased by the Mexican government between 1824 and 1835 as well as the armies of the Republic of Texas in the early to mid 1830s.

NOTES

¹ Brinckerhoff, Sidney B. and Odie B. Faulk, *Lancers for the King: A Study of the Frontier Military System of Northern New Spain* (Phoenix, Ariz.: Arizona Historical Foundation, 1965), 71. The shield was no longer in use on the frontier by the early 1800s. Antonio Martínez to Joaquín de Arredondo, 5 April 1819, *The Letters of Antonio Martínez, Last Spanish Governor of Texas 1817-1822*, (ed.) Virginia H. Taylor (Austin, Tex.: Texas State Library, 1957), 218-219.

² Brinckerhoff and Faulk, *Lancers for the King*, 89.

³ Though this is not included as part of this study, detailed descriptions of firearm artifacts associated with 17th century Indian and French sites are provided in J. C. Blaine, "The Gilbert Site: A Norteño Focus Site in Northeastern Texas" *Bulletin of the Texas Archaeological Society* (cited hereafter as *TAS*), 37 (1966), 33-81; Idem., "A Summary and Discussion of Additional Findings at the Gilbert Site, an Eighteenth-Century Norteño Occupation in Rains County, Texas," *TAS*, 63 (1992), 175-196; Idem., "Firearms and Related Artifacts from the Vinson Site," *TAS*, 64 (1993), 163-186; Blaine, J. C., et al., "Bernard de la Harpe and the Nasonite Post," *TAS*, 44 (1973), 138-158; and Blaine, J. C., et al., "A Preliminary Archaeological and Documentary Study of the Womack Site, Lamar County, Texas," *TAS*, 36 (1965), 317-345.

⁴ *Reglamento e instruccion para los presidios que se han de formar en la linea de Frontera de la Nueva España* (Mexico: Oficina de la Aguila, 1834), Brinckerhoff and Faulk, *Lancers for the King*, 21.

⁵ Ibid.

⁶ Odie B. Faulk, *Leather Jacket Soldier: Spanish Military Equipment and Institutions of the Late 18th Century* (Pasadena, Calif.: Socio-Technical Publications, 1971), 56.

⁷ Faulk, *Leather Jacket Soldier*, 66, 57.

⁸ Ibid., 44.

⁹ Brinckerhoff and Faulk, *Lancers for the King*, 73.

¹⁰ Faulk, *Leather Jacket Soldier*, 56.

¹¹ Ibid.

¹² Ibid.

¹³ S. B. Brinckerhoff and P. A. Chamberlain, *Spanish Military Weapons in Colonial America 1700-1821* (Harrisburg, Pa.: Stackpole Books, 1972), 24-25.

¹⁴ Captain Manuel Gimenez Gonzales: *Coleccion de modelos de las Armas y de los Trajes . . . y un apéndice sobre los Cuerpos de UltramarI*; unpublished collection at the Royal Academy of History (Madrid, 1862) in Francisco F. Lull and J. Hefter, "The Spanish Louisiana Regiment in the Floridas 1779-1781," *Military Collector and Historian: Journal of the Company of Military Historians*, 16, no. 2 (1964) 79-80. Brinckerhoff and Chamberlain, *Spanish Military Weapons*, 18.

¹⁵ José B. Pérez, *La Historia de las armas de fuego portátiles a través de la colección del Museo del Ejército* (Madrid: Ministerio de Defensa, 1999), 35.

¹⁶ Brinckerhoff and Chamberlain, *Spanish Military Weapons*, 28-30.

- ¹⁷ Brinckerhoff and Faulk, *Lancers for the King*, 73.
- ¹⁸ TOWER marked locks signify arms that were fabricated, inspected, polished, and/or engraved at the Tower of London. De Witt Bailey, *Pattern Dates for British Ordnance Small Arms, 1718-1783* (Gettysburg, Pa.: Thomas Publications, 1997), 9.
- ¹⁹ The enlistment of indigenous Mexican males in the armies of New Spain is discussed in Christon I. Archer, "To Serve the King: Military Recruitment in Late Colonial Mexico," *Hispanic American Historical Review* (cited hereafter as *HAHR*), 55, no. 2 (May 1975), 226-250.
- ²⁰ Joseph P. Sánchez, *Spanish Bluecoats: the Catalan Volunteers in Northwestern New Spain 1676-1810* (Albuquerque, N. M.: University of New Mexico Press, 1990), 134.
- ²¹ *Ibid.*, 135.
- ²² *Ibid.*, 136.
- ²³ *Ibid.*, 74.
- ²⁴ *Ibid.*
- ²⁵ Brinckerhoff and Chamberlain, *Spanish Military Weapons*, 19.
- ²⁶ Diario de Granada, 18 May 1809, Servicio Histórico Militar, Madrid. Colección Documental del Fraile, vol. 34 cited in Charles J. Esdaile, *The Spanish Army in the Peninsular War* (Manchester, U.K.: Manchester University Press, 1988), 140.
- ²⁷ Odie B. Faulk, *The Last Years of Spanish Texas 1778-1821* (London: Mouton & Co., 1964), 133.
- ²⁸ *Ibid.*, 134.
- ²⁹ Sánchez, *Spanish Bluecoats*, 137.
- ³⁰ Faulk, *Last Years*, 135-136.
- ³¹ *Ibid.*, 136.
- ³² Only a few examples are necessary. Antonio Martínez to Joaquín de Arredonde, March 6, 1818; Antonio Martínez to Joaquín de Arredonde, Sept. 27, 1819; Antonio Martínez to Joaquín de Arredonde, June 7, 1820 in Taylor, *Letters*, 106, 266, 322 (quotation).
- ³³ Antonio Martínez to the Viceroy, May 31, 1817, "Letters of Antonio Martínez, The Last Spanish Governor of Texas, 1817-1822," (ed.) Mattie A. Hatcher, *Southwestern Historical Quarterly* (cited hereafter as *SHQ*), 39, no.4 (1936), 71 (quotation).
- ³⁴ Antonio Martínez to Joaquín de Arredonde, June 19, 1820, Taylor, *Letters*, 336-337.
- ³⁵ Twenty-seven rifles, four muskets, twelve bayonets, eleven cartridge belts, a pistol and four swords were recovered from Perry's force. Antonio Martínez, "Destruccion de los Malvados que Salieron de Soto la marina con el Titulado Colonel Perry para la Costa del Norte, y Perteneiente a la Gavilla del traidor Mina," *Gaceta Extraordinaria del Gobierno de Mexico* vol. 8 no. 1107 (July 16, 1817), 789.
- ³⁶ Antonio Martínez to Joaquín de Arredonde, Sept. 3, 1817, Taylor, *Letters*, 50.
- ³⁷ Antonio Martínez to Joaquín de Arredonde, Sept. 20 1817, *ibid.*, 62.
- ³⁸ Antonio Martínez to Joaquín de Arredonde, June 4, 1817, *ibid.*, 4-5.

³⁹ Antonio Martínez to Joaquín de Arredonde, March 4, 1820, *ibid.*, 309 and Antonio Martínez to Joaquín de Arredonde, April 26, 1820, *ibid.*, 318-319.

⁴⁰ The Spanish frontier soldiers were still using their shields until the turn of the nineteenth century. Faulk, *Leather Jacket Soldiers*, 66. For discussion on the difficulties and acquiring and training volunteers for the frontier troops see Christon Archer, "The Royalist Army in New Spain: Civil-Military Relationships, 1810-1821," *JLAS*, 13 (May 1981), 57-82.

⁴¹ Brinckerhoff and Faulk, *Lancers for the King*, 90.

⁴² Carl P. Russell, *Guns on the Early Frontier: A History of Black Powder Weapons from Colonial Times to the Mexican War*, 2nd ed., (New York: Barnes and Noble Books, 1996), 37.

⁴³ Hanson, Jr., Charles E., *The Northwest Gun*, 2nd ed. (Lincoln, Neb.: Nebraska State Historical Society, 1992), 8.

⁴⁴ *Ibid.*

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*

⁴⁷ See De Witt Bailey, "Those Board of Ordnance Indian Guns-Again," *The Museum of the Fur Trade Quarterly*, 21, no. 1 (1985), 1-18.

⁴⁸ Hawkins & Hanna to Trespacios, Oct. 6, 1822, *The Béxar Archives at the University of Texas Archives*, (eds.) Chester V. Keilman and Carmela Leal (Texas A&M University Libraries, Texas. Austin, Tex.: University of Texas Library, 1967-1971), microfilm.

⁴⁹ Robert L. Bidwell, "The First Mexican Navy 1821-1830" (Ph.D. diss., University of Virginia, 1960), 121.

⁵⁰ Edgar Turlington, *Mexico and Her Foreign Creditors* (New York: Columbia University Press, 1930), 28-29. Encouraged by revolutionary activities occurring in Latin America, London lending houses sought to develop commercial interests in the newly independent countries. This is discussed at length in Frank G. Dawson, *The First Latin American Debt Crisis: The City of London and the 1822-1825 Loan Bubble* (New Haven, Conn.: Yale University Press, 1990).

⁵¹ Alaman to General Victoria, July 27, 1823, *La Diplomacia Mexicana*, vol. 2, (ed.) Eusebio Gomez (Mexico: Talleres de Artes Gráficas-Granja Experimental de Zoquipa, 1912), 102-104.

⁵² Turlington, *Mexico and Her Foreign Creditors*, 30-31.

⁵³ *Ibid.*

⁵⁴ *Ibid.*, 42.

⁵⁵ *Ibid.*

⁵⁶ *Ibid.*, 45.

⁵⁷ J. Mariano de Michelena to Mr. Secretary of State and of the Office of the War and Navy, Sept. 1, 1824, *La Diplomacia Mexicana*, vol. 3, (ed.) Eusebio Gomez (Mexico: Talleres de Artes Gráficas-Granja Experimental de Zoquipa, 1913), 81-82.

- ⁵⁸ Manuel Eduardo Gorostiza to Michelana, 15 Aug. 15, 1824, Antonio López de Santa Anna, *The Mexican Side of the Texan Revolution*, 2nd ed., (trans.) Carlos E. Castañeda (Austin, Tex.: Graphic Ideas, 1970), 50-51.
- ⁵⁹ J. Mariano de Michelena to Mr. Secretary of State and of the Office of the War and Navy (Sr. Secretario de estado y del Despacho de la Guerra y Marina), Sept. 1, 1824, Gomez, *Diplomacia Mexicana*, 3:81.
- ⁶⁰ Brinckerhoff and Faulk, *Lancers for the King*, 73.
- ⁶¹ Despite the introduction of the New Land Pattern musket in 1815, the principal arm of the British line regiments was the East India Pattern flintlock. The New Land Pattern musket was used by the some of the special units until the manufacture of percussion arms in 1839. DeWitt Bailey, *British Military Longarms 1815-1865* (Harrisburg, Pa.: Stackpole Books, 1971), 8.
- ⁶² *Ibid.*, 13.
- ⁶³ Oriental and Indian Office Collections (London): E/1/253, Itr to William Griffin, Esq No. 1203, Nov. 27, 1817 in D. F. Harding, *Small Arms of the East India Company 1600-1856*, vol. 1, *Procurement and Design* (London: Foresight Books, 1997), 375.
- ⁶⁴ Mark Pegler, letter to author, 8 June 2001.
- ⁶⁵ D. F. Harding, *Small Arms of the East India Company 1600-1856*, vol. 2, *Catalogue of Patterns* (London: Foresight Books, 1997), 50.
- ⁶⁶ *Ibid.*, 59.
- ⁶⁷ *Ibid.*
- ⁶⁸ Bailey, *British Military Longarms 1815-1865*, 8.
- ⁶⁹ Harding, *Small Arms*, 2:50.
- ⁷⁰ Joseph M. Nance, *Attack and Counter Attack: the Texas-Mexican Frontier, 1842* (Austin, Tex.: University of Texas Press, 1964), 598-621.
- ⁷¹ Henry G. Ward, *Mexico in 1827* (Evans Library, Texas A&M University, College Station, Tex.; London: Harry Colburn, 1828), microfilm, 319.
- ⁷² *Ibid.*, 309.
- ⁷³ Grajales, Gloria. *Guia de documentos para la historia de Mexico en archivos ingleses, siglo 19* (Mexico: Universidad Nacional Autonoma de Mexico, 1969), 307.
- ⁷⁴ Anastacio Bustamente to Antonio Elozúa, Dec. 5, 1826, Béxar Archives.
- ⁷⁵ Mariano Cosío to Antonio Elozúa, March 27, 1830, Béxar Archives. José de las Piedras to Ramón Músquiz, Aug. 2, 1830, Béxar Archives. José André de Sobreville to Antonio Elozúa, Oct. 26 1830, Béxar Archives. Antonio Elozúa to Ramón Músquiz, Feb. 1, 1831, Béxar Archives.
- ⁷⁶ Angelina Nieto, Joseph Hefner and Mrs. John Nicholas Brown, *El soldado mexicano 1837-1847: Organizacon, vestuario, equipo y reglamentos militares* (Mexico: Ediciones Nieto-Brown-Hefter, 1958), 53.
- ⁷⁷ Joaquín M. Errazu to Antonio López de Santa Anna, Dec. 15. 1835, Santa Anna, *Mexican Side*, 50-51.
- ⁷⁸ Michael Koury, *Arms for Texas: A Study of the Weapons of the Republic of Texas* (Fort Collins, Tex.: The Old Army Press, 1973), 8.

- ⁷⁹ R. Roberts and J. S. Olsen, *A Line in the Sand: The Alamo in Blood and Memory* (New York: The Free Press, 2001), 22.
- ⁸⁰ Ibid.
- ⁸¹ Nieto, *El soldado mexicano*, 53.
- ⁸² Koury, *Arms for Texas*, 8.
- ⁸³ Kenneth M. Brown et al., *La Villita Earthworks (41 BX 677): San Antonio, Texas*, (ed.) J. H. Labadie (San Antonio, Tex.: The University of Texas at San Antonio, 1986), 81-85.
- ⁸⁴ Bobby J. McKinney, "Excavated Military Relics of the Texas Revolution and the Republic of Texas, 1836-1846," *Military Collector & Historian*, 51, no. 3 (1999), 119.
- ⁸⁵ Extensive collection of firearm furniture was recovered during restoration of the fort. Newton M. Warzecha, conversation with author, June 2000.
- ⁸⁶ Arms collected after the Battle of San Jacinto were stored at Post West Bernard. Joe D. Hudgins, "Post West Bernard (41WH16)-Republic of Texas Armory 1837-1839, Wharton County Texas" *TAS*, 57 (1986), 147-155.
- ⁸⁷ Joe D. Hudgins and Gregg Dimmick, "A Campsite of the Retreating Mexican Army April, 1836, 41 WH91, Wharton County, Texas" *Houston Archaeological Society Report* (cited hereafter as *HAS*), 13 (1998) 6-7 and Joe D. Hudgins, Terry Keiler, and Gregg Dimmick, "Tracking the Mexican Army through the Mar de Lodo, April 29-May 9, 1836," *HAS*, 16 (2000) 10-12, 20-21, 29.
- ⁸⁸ William Depalo, *The Mexican National Army 1822-1852*, Texas A&M Military Series no. 52. (College Station, Tex.: Texas A&M Press, 1997), 82-85
- ⁸⁹ Ministerio de Guerra y Marina, *Memoria del Secretario de Estado y del despacho de Guerra y marina*. (Evans Library, Texas A&M University, College Station, Tex.; Mexico: Imprente de Vicente G. Torres, 1852), microfilm, II.
- ⁹⁰ Ibid., I.
- ⁹¹ Texas and Mexico were often using the same shipbuilders for their respective navies. Tomas C. Morris & Son, for example, were contracted to produce the fittings for the Texas Naval ships being built in Baltimore in 1838 and 1839. This same company also produced the fittings for some brigs and a corvette for the Mexican government. House, *Appendix to the Journals*, 207.
- ⁹² Domingo de Ugartechea to Martin Perfecto de Cos, July 13, 1835, *The Papers of the Texas Revolution, 1835-1836*, vol. 1, (ed.) John H. Jenkins (Austin, Tex.: Presidial Press, 1973), 237.
- ⁹³ R. R. Royall to Sam Houston, Feb. 17, 1836, *The Papers of the Texas Revolution, 1835-1836*, vol. 4, (ed.) John H. Jenkins (Austin, Tex.: Presidial Press, 1973), 480-481.
- ⁹⁴ J. W. Fannin Jr. to Major Belton, Aug. 27, 1835, Jenkins, *Papers*, 1:371-373.
- ⁹⁵ Austin to the People, Sept. 21, 1835, *The Austin Papers October 1834-January 1837*, (ed.) Eugene C. Barker (Austin, Tex.: University of Texas, 1927), 130-131.
- ⁹⁶ Ira Ingram to Committee of Safety, Oct. 11, 1835, *The Papers of the Texas Revolution, 1835-1836*, vol. 2, (ed.) John H. Jenkins (Austin, Tex.: Presidial Press,

1973), 96 and Philip Dimmitt to Stephen F. Austin, Oct. 15, 1835, in Barker, *Austin Papers*, 185.

⁹⁷ Ira Ingram to Stephen F. Austin, Oct. 13, 1835, *ibid.*, 181.

⁹⁸ Stephen F. Austin to the Convention, Oct. 28, 1835, *ibid.*, 216-217.

⁹⁹ Philip Dimmitt to Stephen F. Austin, Nov. 13, 1835, *ibid.*, 251.

¹⁰⁰ William B. Travis to Stephen Austin, 16 Nov. 16, 1835, Jenkins, *Papers*, 2:442-443.

¹⁰¹ Koury, *Arms for Texas*, 7.

¹⁰² Sam Houston to Governor Henry Smith, Dec. 26, 1835, *The Papers of the Texas Revolution, 1835-1836*, vol. 3, (ed.) John H. Jenkins (Austin, Tex.: Presidial Press, 1973), 330.

¹⁰³ Houston to Smith, 330.

¹⁰⁴ McKinney and Williams to Mr. Gray, Oct. 11, 1835, Barker, *Austin Papers*, 175.

¹⁰⁵ R. R. Royall to Stephen F. Austin, Oct. 13, 1835, Barker, *Austin Papers*, 178.

McKinney and Williams to R. R. Royall, Oct. 28, 1835, Jenkins, *Papers*, 2:251-252.

¹⁰⁶ Telegraph and Register Service of Sept. 18, 1836 in Koury, *Arms for Texas*, 9.

¹⁰⁷ James Smith to S. Houston, Nov. 24, 1835, Jenkins, *Papers*, 2:501.

¹⁰⁸ House, *Journals of the House of Representatives of the Republic of Texas*, 1st Cong., 1st sess., 1838, 89.

¹⁰⁹ Zachery F. Smith, *The Battle of New Orleans*, Filson Club Publications, no. 19 (1904, reprint; Bowie, Md.: Heritage Books, Inc, 1988), 3 and William A. Meuse, *The Weapons of the Battle of New Orleans*, Battle of New Orleans Sesquicentennial Historical Booklets, no. 9 (New Orleans: The Battle of New Orleans, 150th Anniversary Committee of Louisiana, 1965) 4-8.

¹¹⁰ James Treat to Stephen F. Austin, May 1836 in Jenkins, *Papers*, 6:460 and Ed Hall to V. Libeau, April 30, 1836, Jenkins, *Papers*, 6:128.

¹¹¹ James Robinson to Stephen F. Austin, W. Wharton, and Branch T. Archer, Jan. 23, 1836, Jenkins, *Papers*, 4:128-130. The Texas government is informed that 3,000 English muskets are available in New Orleans for sale to Texas, Barker, *Austin Papers*, 355. It is not indicated if any of these muskets were ever purchased for Texas.

¹¹² Koury, *Arms for Texas*, 7. About half the cavalry was armed with flintlock double barrel shotguns, other half armed with American jaegers, with a half ounce bore, and flintlocks. House, *Journals*, 93.

¹¹³ Stuart Perry to D. G. Burnet, April 16, 1836, *Official Correspondences of the Texan Revolution, 1835-1836*, vol. 2, (ed.) William Campbell Brinkley (New York: Appleton-Century Company, Inc., c. 1936), 683-639.

¹¹⁴ Hudgins, "Post West Bernard," 150.

¹¹⁵ Louis A. Garavaglia and Charles G. Worman, *Firearms of the American West 1803-1865* (Albuquerque: University of New Mexico Press, 1984), 16. For matters of simplification the American military muskets are not described in this study. Later models produced by American armories followed the design of Charleville muskets with only slight alterations such as barrel length and buttstock shape. Firearm furniture from these models is much different in character than any of the types encountered thus far

from the surveyed shipwreck. Descriptions and histories of American military arms are provided in George D. Moller, *American Military Shoulder Arms*, vol. 2, *From the 1790s to the End of the Flintlock Period* (Niwot, Colo: University Press of Colorado, 1993). James E. Hicks, *US Military Firearms 1776 - 1956* (La Canada, Calif.: J. E. Hicks, 1962) and George C. Neumann, *The History of Weapons of the American Revolution* (New York: Harper & Row, 1977).

¹¹⁶ Telegraph and Register Service of Sept. 13, 1836. In Koury, *Arms for Texas*, 9.

¹¹⁷ Hockley's report dated 1839, *ibid.*

¹¹⁸ *Ibid.*, 14.

¹¹⁹ *Ibid.*

¹²⁰ R. Reilly, "The Republic of Texas Tryon Musket," *The Texas Gun Collector* (1955), 31.

¹²¹ George W. Hockley to Branch T. Archer, Sept. 1840. House, *Appendix*, 169-173.

¹²² George W. Hockley to David G. Burnett, Jan. 4, 1841, *Appendix*, 169-173.

¹²³ Louis P. Cooke to A. Sidney Johnston, Oct. 18, 1839, *Journals of the Fourth Congress of the Republic of Texas, 1839-1840, to which are Added the Relief Laws*, (ed.) Harriet Smither (Austin, Tex.: Von Boeckmann Jones Co., 1931), 125.

CHAPTER III

GULF MARITIME ACTIVITY OF THE EARLY NINETEENTH CENTURY

The Texas Gulf Coast has an extensive early maritime history, including the wreck of the Spanish Plate fleet in 1554¹ and the ill-fated expedition by John La Sieur de la Salle in 1684-1686.² An expansion in maritime activity would occur in the late 18th and early 19th centuries as the Spanish colonized the Texas coast and established the mission/presidio system.

Immigration into Texas increased heavily in the early 19th century, especially in south-central and southern Texas. The founding of Victoria in 1824,³ the first major city in the region, influenced immigration and the quantity of maritime traffic into Texas. The influx of immigrants would continue to increase steadily into the late 1820s and early 1830s. In January and February of 1835 alone, 2,000 immigrants arrived at the mouth of the Brazos River.⁴

Throughout this period, maritime commerce in Texas was prosperous and diverse. As immigration increased, so did trade, commerce, and international interest in Texas' commercial potential. General Almonte provided the Mexican government with a written overview of Texas affairs in 1834 and this states that the total dollars in imported goods, exported goods, and contraband trade for that year was \$1,400,000.⁵ In a report to the British government in 1837, Joseph T. Crawford described the bulk of the monthly Texas trade to be conducted by about 40 vessels averaging approximately 100

tons each. These vessels were almost all of the United States and collectively they transported 48,000 tons a year.⁶

Vessels involved in trade with Mexico and Texas in the early 1800s were most likely registered in New Orleans before continuing onward. Vessels wishing to deliver supplies to the Texas coast, while it was a Mexican possession, often passed through Matamoros, the major Mexican port of the region. Galveston and Matagorda were the primary Texas ports of entry, though most of the navigable river entries along the coast were utilized as needed. The firm of McKinny and Williams, a major mercantile supply company for Texas, was rooted in New England and Texas. Its Texas location at Quintana, near the mouth of the Brazos River, also received a steady stream of maritime traffic.

The major ports along the Texas coastline, during the Mexican period, were in San Bernardo, Matagorda, and Galveston Bays. Galveston was by far the most prosperous and frequented Texas port. In 1842 it accounted for two-thirds of the all the revenues derived from customs.⁷ Matagorda Bay's role as the major port of the region and a supply depot for La Bahía insured a steady stream of trade vessels. In one week alone ten vessels docked at Matagorda Bay, nine from New Orleans and one from Mobile, Alabama.⁸

Occasionally there was interference in maritime commerce, some caused by pirating and privateering, forced government intervention. During these times, periodically, various Texas ports would be closed to maritime traffic in order for the

Mexican government to more efficiently 'police' the coastline.⁹ Galveston, however, almost without exception, always remained open to receive trade.

Military supplies and contraband items, in the years preceding and during the Texas Revolution, had secondary destination points at Lavaca Bay, Linn's Landing, Dimitt's Point, Cox's Point, Velasco, and Copano Bay (fig. 4).¹⁰ As a Mexican Possession, Mexican military supplies were received at coastal locations in Aransas, Copano, Lavaca, and Matagorda Bays from San Carlos, Monclova, San Luis Potosi, Monterrey, and Soto de Marina (fig. 5).¹¹

The Texas coastline could be hazardous especially as one tried to access the

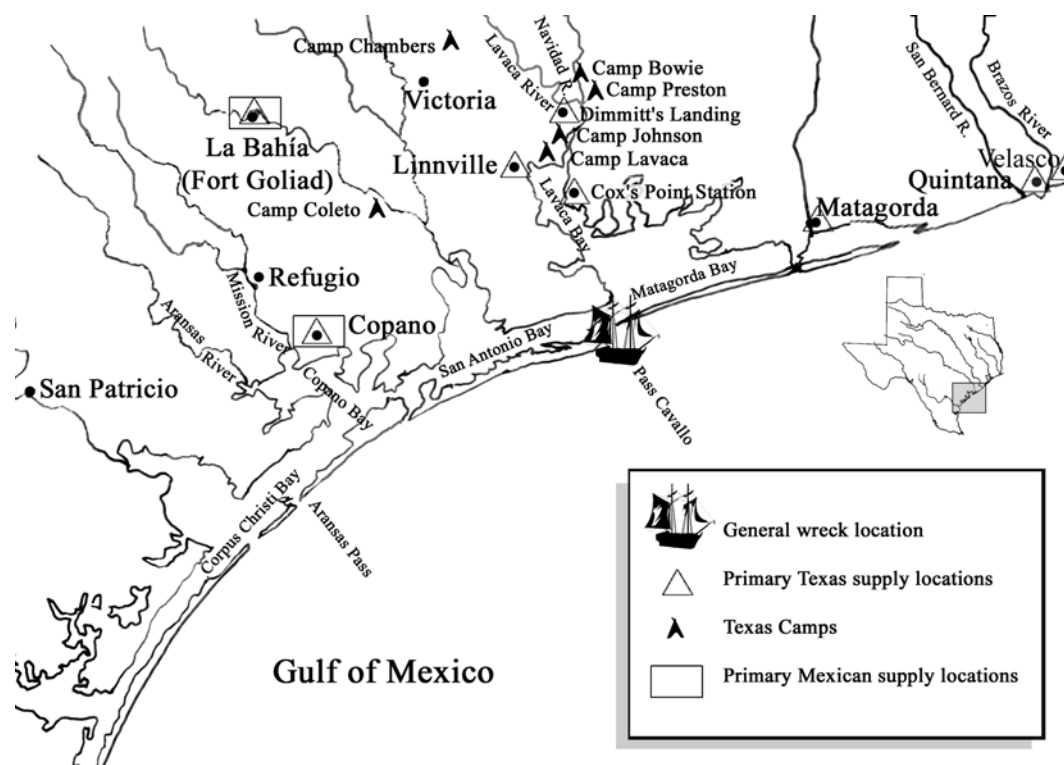


Figure 4. Supply Destinations on the Texas Coast. *Illustration by A. Borgens after G. S. Pierce, Texas Under Arms: The Camps, Posts, Forts, & Military Towns of the Republic of Texas, 1836-1846* (Austin: Encino Press, 1969), inside front piece.

shallow bays and rivers. Most maritime accidents occurred in these areas. The Matagorda-Copano area and its passes, account for the majority of all the wrecks that occurred between 1815 and 1845 (see appendix IV). Twenty-three vessels wrecked in this area; this is forty percent of Texas wrecks whose locations are known. Galveston Bay and the surrounding area had 16 wrecked vessels for the same period. Nine vessels wrecked in the Brazos River or Bar. Nine additional vessels wrecked in the Aransas Pass, Nueces River, and Sabine River.

The depth of the passes into Copano, Matagorda and Galveston bays demanded vessels of a shallow draft. Such was the difficulty in negotiating Texas ports, in

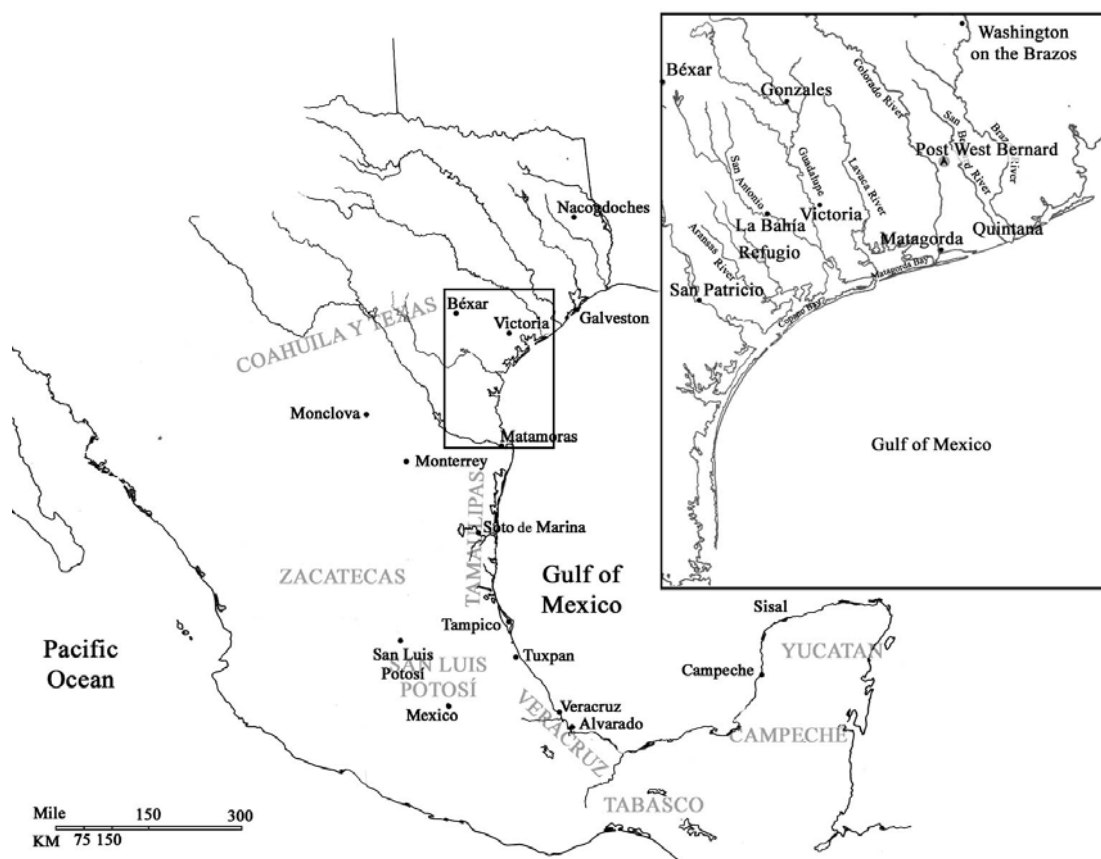


Figure 5. Supply Origins for Texas Arms in Mexico. *Illustration by A. Borgens.*

1836 a request was made to New Orleans by David G. Burnet, ad interim president of the Texas Republic, that its Texas bound merchant vessels not draw more than seven feet fully burden.¹² Matagorda Bay and Galveston Bay were reported to be able to take vessels drawing 10 feet during the spring tides and 12 feet at high water.¹³ Copano Bay, an incredibly strategic location during the Texas Revolution, generally had only six to seven feet of water over its entry bar over the bar.¹⁴

The entrance into the Brazos River was likewise treacherous. A shifting sandbar at the mouth of the river threatened vessels drawing more than five feet.¹⁵ In 1830, shipboard passengers sighted four wrecked vessels that failed to make a safe passage.¹⁶

Due to the difficulty in accessing the bays and rivers, often the ships conducting trade with Texas were smaller vessels: sloops, two-masted schooners and brigs. Schooners, the lifeblood of the Texas coastal trade, were generally smaller vessels that were well suited for the Texas coast.

United States consular records of Galveston demonstrate the types of vessels engaged in maritime trade in Texas during the early 19th century. From the consular records of U. S. vessels conducting trade in the port, over 365 vessels sailed into the port of Galveston between 1815 and 1845 (see appendix III). The largest quantities of vessels, by type, to use Galveston Port were schooners, brigs and steam vessels (fig. 6). Sixty-two percent of these vessels were schooners, twenty percent were brigs, and eight percent were steam vessels.

In order to navigate through the shallow passes, the vessels had to have shallow drafts. The average draft for all vessels was six feet nine inches. Schooners, overall,

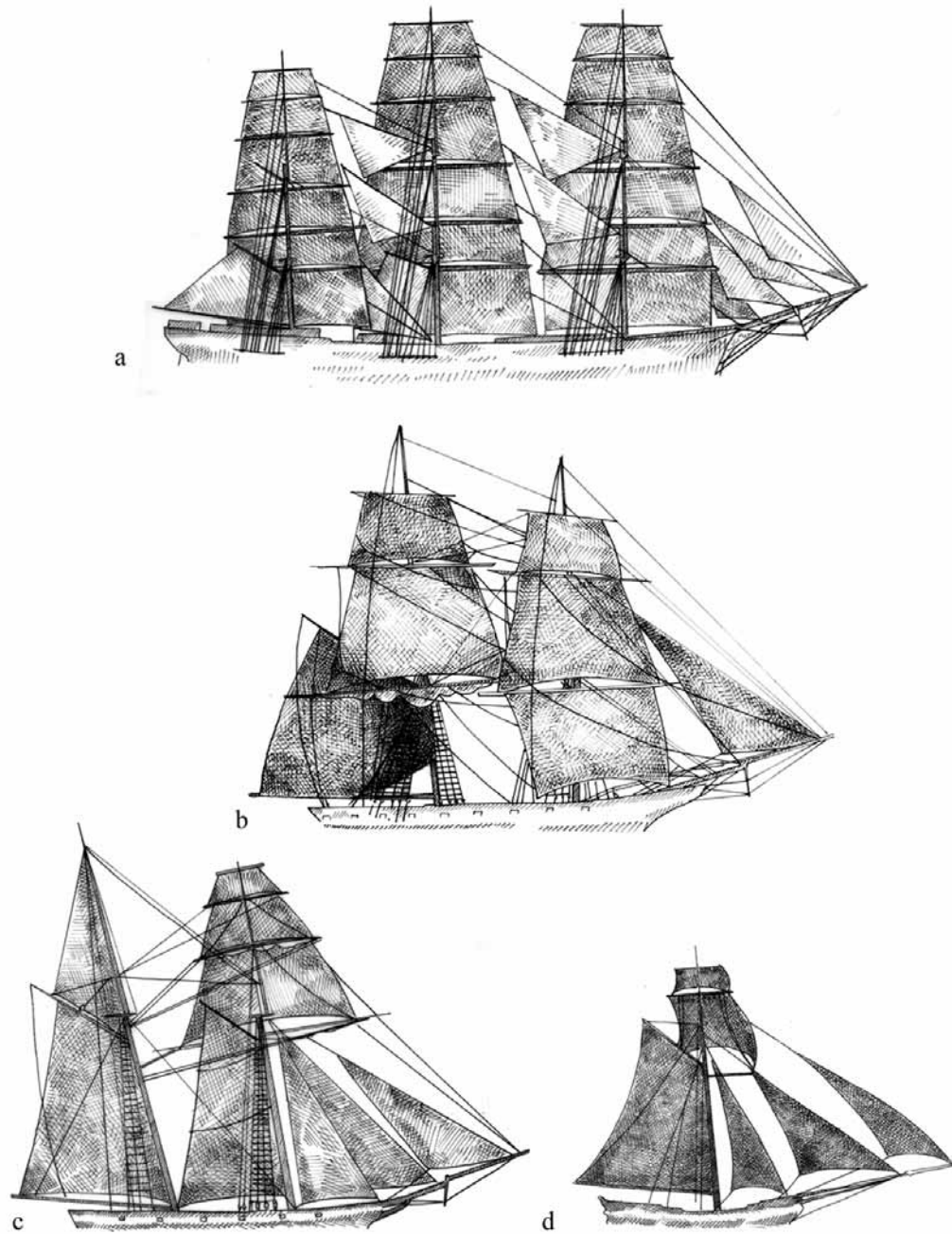


Figure 6. Sailing Vessels in the Gulf of Mexico. a) ship, b) brig-of-war, c) schooner, d) sloop. Illustrations by A. Borges. Images b and c after George Biddlecomb, *The Art of Rigging*, (1925, reprint, Mineola: Dover Publications, Inc., 1990) Plates XV, XVI. Drawings a and d after Howard I. Chapelle, *The History of American Sailing Ships* (1925; reprint, New York: Bonanza Books, 1985), 289, Fig. 57, 12.

averaged 63 feet 6 inches in length, 19 feet 6 inches in beam, 6 feet 4 inches in depth, and averaged 86 tons burden.¹⁷ Most schooners of this era were 100 tons or less, only a few were registered at as much 150 tons.¹⁸ Only 3 of the 18 sloops recorded in the consular records between 1815 and 1845 have detailed information regarding vessel size. These measured between 23 and 36 feet in length, 9 to 14 ½ feet in beam and 3 to about 4 ½ feet in depth. The average tonnage for the single-masted sloop at Galveston, during this time, was 24.70 tons.¹⁹

Steam vessels, brigs, and ships were the largest vessels to ply the Gulf waters. Collectively these account for 30 percent of the United States vessels recorded at Galveston between 1815 and 1845. Steam vessels were between 96 and 215 feet in length and averaged 200 tons. Ships averaged 388 tons.²⁰ Brigs, the second largest number of vessels at Galveston, measured between 61 and 412 feet in length and averaged 150.89 tons.

Vessels manufactured in the United States under contracts with the Texas Navy, though superior to the common trading vessel, indicate the type of vessel sought for use in coastal waters. One ship, two brigs, and three schooners were built in Baltimore for construction and delivery to Texas in 1838 and 1839. As stipulated in the Dawson's contract, the hulls of the vessels were constructed by different shipbuilding firms; the ship by William & George Gardner,²¹ the brigs by J. A. Robb & Company, and the schooners by L. H. Dunkin.²² The riggings and fittings were subcontracted to additional specialists.

The ship and brigs were the largest of the vessels, measuring 125 feet and 110

feet respectively between perpendiculars. The schooners are more indicative of the general size of the vessels sailing the coastal waters. The naval schooners had a 66 foot long keel and a 21.5 foot breadth of beam. All vessels were to be planked with white oak and were to be copper sheathed and fastened.

PASS CAVALLO WRECKS

Several ships perished in and around the pass to Matagorda Bay in the early to mid-19th century. A merchant vessel, carrying sundry items and silks, wrecked in or near Matagorda Bay in 1818.²³ In addition, the *Cannon*, carrying immigrants from Matamoros to Copano Bay, wrecked crossing the bar into Matagorda Bay in 1832.²⁴ There are, however, five additional wrecked vessels that were either carrying shipboard firearms or a cargo of small arms.

Name Unknown, 1817

In 1816 Louis Aury, a privateer headquartered on Galveston Island, assisted the filibuster Xavier Mina in an attempt to overthrow the Spanish at Soto de Marina, Mexico. Aury and Mina departed for the Mexican coast on April 7, 1817 with nine vessels: two frigates (*Neptune* and *Cleopatra*), three brigs (*Paz*, *Calyspo*, and *Dorado*), three schooners (*Ellen Tucker*, *Congreso*, and *Dolphin*), and a sloop (*August*).²⁵ Aury took Mina and his troops as far as Santander River, Mexico²⁶ than set forth to return to

Galveston Island. Upon his return to Galveston Island, Aury discovered that Lafitte, a privateer who had gained fame from the battle of New Orleans in 1815, had usurped leadership of the pirate community based there.²⁷

Aury relocated to Matagorda Bay and organized a makeshift base consisting of seven log dwellings and two units for quartering troops.²⁸ The troops were transported on five vessels with cargoes of armament. According to one of Aury's slaves, the camp consisted of upwards of 200 soldiers.²⁹ Two captured merchant ships and three stranded vessels were absorbed into Aury's collective fleet.

On June 11, 1817, Antonio Martinez reported the establishment of Aury's camp at Matagorda to the Spanish government based in Mexico City. In Martinez's report, Aury's fleet is described as consisting of ten two-masted vessels, two three masted vessels, and one ship that had grounded.³⁰ Following the defeat of Mina at Soto de Marina, on June 18, 1817, Aury decided to abandon his settlement at Matagorda. Later the same month, in a letter dated June 29, Martinez reported the destruction of thirteen vessels at the port of Matagorda.³¹ The cause of the destruction remains unknown.

Aury made his retreat from Matagorda Bay with two vessels. Ennalt Calvin, an escaped slave, stated that Aury burned the living quarters prior to departing.³² Aury perhaps salvaged valuable items from the settlement and ships and destroyed what was unneeded. The larger vessel, with a cargo of armament and cannon, wrecked on the sandbar upon exiting the bay.³³ The final outcome of this particular vessel is unknown.

Of the original nine vessels used to transport Mina's expedition, is it unclear as to which remained with Aury and were part of his fleet at Matagorda. The *Neptune* and

Cleopatra were captured by the Spanish in the defeat of Mina's expedition at Soto de Marina.³⁴ The author has not ascertained the fate of the remaining vessels.

General Bustamente, 1830

The presidio/garrisons at Béxar, Lavaca and Goliad were in constant need of supplies and reinforcements. During the months of May and June in 1830, the Commandants at Béxar and Bahía were notified of the passage of two vessels, the *Constante*, a Mexican brig of war, and the sloop *General Bustamente* with supplies and troops.³⁵ Two other vessels were expected in the following months, one carrying a regiment from Tamialipas, and another from New Orleans with munitions.

Though the *Constante* arrived and departed without incident, the *General Bustamente* wrecked. The wreckage of the vessel was reported in a letter to Mier y Teran, the presiding military commander of the region of Texas. Antonio Elozúa, the commander at Goliad, detailed the loss of the ship, as reported to him by Rafael Chovell, the military commander of Lavaca Bay. The vessel wrecked without loss of life and the survivors were able to reach their final destination.³⁶ The sloop was transporting the 11th Infantry Battalion of the Mexican Army that had been sent to Lavaca to relieve the soldiers stationed there.

In an appraisal of the 11th Battalion by Rafael Chovell, conducted almost two weeks following the wreck of the vessel, twelve soldiers were listed as comprising the unit.³⁷ The vessel appears to have wrecked in close proximity to the presidio of Goliad, as this was the origin of the news of the disaster and also the source of the aid provided

the soldiers and crew. The vessel wrecked on the bar or beach as it was proceeding towards Lavaca Bay.

The *General Bustamente* was a vessel of the Mexican Navy. The Mexican Navy, following the Mexican Revolution, consisted of one brig and two launches. Fear of Spanish reprisals induced the Mexican government to purchase six gunboats and two sloops of war in the United States.³⁸ These vessels comprised the Mexican Navy in 1823. The size of the navy was gradually increased so that by January of 1827 the fleet consisted of one ship of the line (*Congreso Mexicano*), two frigates (*Libertad* and *Tepeyac*), four brigs of war (*Guerrero*, *Victoria*, *Bravo*, *Constante*), a corvette (*Morelos*), a schooner (*Hermon*), four gun boats, four large launches, and two pilot



Figure 7. United States Gunboat of the Early 19th Century. *Illustration by A. Borgens after Chapelle, History of American Sailing Ships, 98.*

boats.³⁹ The *Tepeyac* would eventually be sold to Russia in 1828 to pay for repairs,⁴⁰ and the *Guerrero* was severely damaged in an altercation with the Spanish vessel *Lealtad* in 1829. The *Bravo* was lost at sea on her way from Matamoros to Veracruz in 1836.⁴¹ In 1829 the Mexican Navy based at Veracruz had only two vessels, one of which was seaworthy (this ship was later to flounder).⁴²

The Mexican government decided in 1830 that frigates and brigs were too expensive for the economically pressed country, and that gunboats would have to suffice.⁴³ A similar observation was made in 1827 regarding the state of Mexico's naval affairs. H. G. Ward, the British Chargé d' affairs in Mexico, remarked that in time the Mexican government would recognize that a few 'light' vessels would be all that they required.⁴⁴ The types of vessels that comprised the Mexican Navy upon its expansion in 1834 demonstrated the concern with expense and vessel size, vocalized by Ward and Mexican officials. The Mexican Navy in 1834 had two 12-gun brigs, six 6-gun schooners, and eighteen 2-gun small schooners.⁴⁵

The *General Bustamante*, a small sloop, is the type of small vessel desired by the Mexican Navy. This vessel could be one of the original sloops purchased in 1823 or one of the later gunboats that was to later characterize the Mexican fleet. Gunboats were a variety of vessel types and sizes, including galleys, cutters, sloops and schooners (fig. 7).⁴⁶

San Felipe, November 4, 1835

The *San Felipe* was a well-known schooner in Texas due to its decisive military

actions in an encounter with Mexican schooner *Correo* in September of 1835.⁴⁷ The *San Felipe* prevailed in what some consider the first maritime 'battle' of the Texas Revolution.

As with many vessels during this time the *San Felipe* was used to transport soldiers and supplies in addition to regular cargo. The vessel had a large central cabin used for dining and lounging, in addition to a few first-class staterooms. The *San Felipe* could accommodate 60 passengers along with two hundred bales of compressed cotton, or similar cargo, could be carried in its hold.⁴⁸

On October 13, 1835 the *San Felipe*, which was partly owned by Samuel McKinney, was expected to arrive at Quintana, the location of the mercantile powerhouse of McKinney and Williams, with a cargo of small arms and canon.⁴⁹ The *San Felipe* was to continue from Quintana with a cargo of large artillery.⁵⁰ In early November, the *San Felipe* was transporting Stephen F. Austin from New Orleans to Matagorda. Austin had just been released from prison in Mexico. During this trip the Mexican vessel *Montezuma* was seen along the Texas coast. Stephen Austin and other passengers were taken to Matagorda and the ship was reinforced with men and additional arms. The number of cannon was increased from 2 to 7 and the vessel was armed with 70 men.⁵¹ On the 4th of November, the *San Felipe* wrecked six or eight miles east of Pass Cavallo while pursuing the *Montezuma*. Lost in the wreck were cotton, books and some goods on board. There were possibly also muskets on board when the vessel wrecked.⁵²

On November 11th, McKinney expressed the belief that the ship could be

refloated.⁵³ In a letter written the following day to Stephen F. Austin, the *San Felipe* was described as a 'total loss'.⁵⁴ The *William Robbins* had been sent to retrieve the cannon from the wreck.⁵⁵ On January 17, 1836, almost exactly two months later, the vessel was assigned a wreck agent.⁵⁶ Following the accident at Pass Cavallo, it disappears from contemporary documentation altogether, which is unusual for a ship of its renown.

Hannah Elizabeth, November 18, 1835

The history of the *Hannah Elizabeth* and its role in the Texas Revolution is particularly relevant for it has been identified as the most likely candidate for the ship carrying the artifact assemblage described later. The *Hannah Elizabeth* was built in 1829 in Stoningham, Connecticut. Its enrollment in the New Orleans's Register describes its general features as being two-masted, with a single deck, and a billethead. Its dimensions were 67 feet 10 inches (length), 20 feet 10 inches (beam) and 6 feet 1 ¾ inches (depth of hold).⁵⁷ It was enrolled at 74 tons⁵⁸ and at the time of its sinking it was armed with two 6-pounders and one 4-pounder.⁵⁹

In November of 1835, the *Hannah Elizabeth* was overtaken by the Mexican brig of war, *Montezuma*. The schooner had been chartered by Peter Kerr, Fernando de Leon and Jesus Carbajal to carry trade supplies and contraband munitions from New Orleans to Matagorda.⁶⁰ The *Hannah Elizabeth* was chased ashore at the west end of Matagorda Peninsula on November 19, 1835.⁶¹

According to a deposition statement made by Thomas Pugh, Edward Scrugham,

and Alonzo Marsh, the vessel became stranded on the bar as it was entering Matagorda Bay and the *Montezuma* fired into the vessel as it lay stranded.⁶² The crew of the *Hannah Elizabeth*, recognizing that it was to be seized carrying contraband material, threw the cannon, powder, and two boxes of small arms overboard.⁶³ The cargo, which included 500 muskets, 2 pieces of artillery, and a full equipment of ammunition, was valued at \$35,000.⁶⁴ Carbajal and De Leon were taken as prisoners and a prize crew was assigned to the *Hannah Elizabeth*.⁶⁵ During the evening a northern force forced the *Montezuma* to retreat to Matamoras. The vessel, *William Robbins*, intercepted the stranded vessel and recaptured the schooner with its prize crew.

Testimony from the captured Mexican Lieutenant, Don Matteos, agrees with the version provided by S. Rhodes to the Texas Provisional Government. According to his statement, two boxes of muskets, rifles and other arms were thrown overboard as well as the cannon and powder.⁶⁶

A complete salvage of the vessel's cargo was thwarted when the vessel rolled her masts into the breakers, severely damaging the deck.⁶⁷ The salvaged cargo of the vessel was sold to the passengers and crew of the *Hannah Elizabeth* and *Williams Robbins*, including the 'chance' for guns and ammunition.⁶⁸ The auction of the schooner's cargo was disputed by Colonel Fannin, one of the intended recipients of the goods. The problem with the sale and distribution of the cargo is addressed in *The Journal of the Proceedings of the General Council of the Republic of Texas* (1835).⁶⁹

Pelicano Campeache, March 1836

The Mexican vessel *Pelicano* was bound from New Orleans to Sisal and was captured by a Texas privateer in 1836. The vessel was overtaken in the port of Sisal and was to sail to Matagorda as a captured prize. The crew of the *Pelicano* recognized that it was to be overtaken. Military assistance was requested and measures were taken to prevent the vessel from sailing. The Texas privateer crew, in overtaking the vessel, captured not only the crew, but also 20 soldiers “double armed with muskets”.⁷⁰ The vessel was described as being 'Baltimore built' and of the first class.⁷¹ At the time of its capture, the *Pelicano* was armed with three large brass guns.⁷² As the *Pelicano* was approaching Matagorda Bay with a prize crew, the United States vessels *Natchez* and *Boston* gave chase.⁷³ The privateer, *Liberty*, succeeded in entering the bay while the *Pelicano* wrecked while crossing the Matagorda bar.

According to an eyewitness account from S. W. Cushing, a member of the prize crew, the vessel broke up quickly. During the recovery of the cargo, it was discovered that the barrels of produce contained munitions. According to Cushing, the cargo consisted of flour, apples, and butter. In addition there was \$2,000-\$3,000 in gold and silver coin.⁷⁴ The barrels of flour were found to conceal 25-pound kegs of gunpowder. Cushing also described trunks with false bottoms containing jewelry.⁷⁵ He estimated that the original cargo was valued at approximately \$60,000.⁷⁶ Another account also describes rifles as being hidden in barrels of flour.⁷⁷ The Texas government valued the flour and powder (280 kegs total)⁷⁸ at \$7,584.05.⁷⁹ Through legal action this amount was split between the salvors of the vessel and the privateer crew.⁸⁰

NOTES

¹ See J. Barto Arnold and Robert Weddle, *The Nautical Archeology of Padre Island: The Spanish Shipwrecks of 1554* (New York: Academic Press, 1978).

² William F. Foster (ed.) and Warren, Johanna S. (trans.), *The La Salle Expedition to Texas: The Journal of Henri Joutel, 1684-1687* (Austin, Tex.: Texas Historical Association, 1998), 135-136.

³ Victor M. Rose, *Historia of Victoria* (Victoria, Tex.: Bookmark, 1961), 10. La Bahia was the port of entry and customs collected at this point. *Ibid.*, 11.

⁴ Samuel L. Williams to Stephen F. Austin, March 31, 1835 in Barker, *Austin Papers*, 57.

⁵ General Almonte's Report to the Mexican Government, excerpted in John J. Linn, *Reminiscences of Fifty Years in Texas* (1883; reprint, Austin, Tex.: The Steck Company, 1986), (97-103), 103.

⁶ Joseph T. Crawford to Charles O' Gorman, May 1837 in Ephraim D. Adams (ed.), *British Diplomatic Correspondences Concerning the Republic of Texas 1838-1846* (Austin, Tex.: Texas State Historical Association, 1918), 7.

⁷ June 9, 1843, Adams, *British Diplomatic Correspondences*, 218.

⁸ *Bulletin* (Matagorda), Feb. 6, 1838, cited in Guthrie, *Texas' Forgotten Ports*, 135.

⁹ Jose Bonifacio Galán to Erasmo Seguín, Nov. 22, 1827, *Béxar Archives*. Francisco Gutiérrez de la Lama to Erasmo Seguín, March 12, 1828, *Béxar Archives*. Francisco Gutiérrez de la Lama to Antonio Elozúa, June 19, 1828, *Béxar Archives*.

¹⁰ Mariano Cosío to Antonio Elozúa, Goliad, June 6, 1830, *Béxar Archives*. Antonio Elozúa to Severo Ruiz, Martín de Leon, and Peter Ellis Bean, Béxar, June 9, 1830, *Béxar Archives*. Congress, *Appendix to the Journals of the House of Representatives*, 5th Congress (Evans Library, Texas A&M University, College Station, Tex.; Austin: Gazette, 1842), microfilm, 169. R. R. Royall to S. Houston, Feb. 17, 1836, Jenkins (ed.), *PTR*, III, 372-373. John Forbes to T. J. Rusk, Camp Fort Bend, May 15, 1836, Brinkley, *Official Correspondences*, 2:685. D. G. Burnett to James Morgan, May 29, 1836, *ibid.*, 717-718. E. H. Stanley to the Convention, March 1836, *ibid.*, 494. Edward Hall to Henry Smith, Nov. 18, 1835 in Brinkley, *ibid.*, 94-95. William Petus to T. F. McKinney, date, *ibid.*, 191. J. A. Mexia to Henry Smith, Dec. 15, 1835, *ibid.*, 19.

¹¹ Antonio Elozúa to Felipe de la Garza, June 5, 1829, *Béxar Archives*, Mier y Terán to Antonio Elozúa, May 25, 1830, *Béxar Archives*. Antonio Elozúa to Antonio Crespo, June 23, 1827, *Béxar Archives*. Juan Manuel Maldonado to Antonio Elozúa, Laredo, July 27, 1827, *Béxar Archives*. José Ventura Ramón to Antonio Elozúa, Dec. 6, 1826, *Béxar Archives*. Mateo Ahumada to José Pleguezuelo, March 12, 1825, *Béxar Archives*. Gaspar López to Antonio Martínez, Jan. 12, 1822. *Béxar Archives*. Antonio Elozúa to Anastacio Bustamente, July 12, 1827, *Béxar Archives*. Joaquín Vidal de Lorca to Antonio Elozúa, May 16, 1827, *Béxar Archives*.

¹² David G. Burnet to Thomas Toby, June 23, 1836, Brinkley, *Official Correspondences*, 813-814.

¹³ Joseph T. Crawford to Charles O' Gorman, May 13, 1837, Adams, *British Diplomatic Correspondences*, 7 and William Kennedy to John Bidwell, Jan. 8, 1844, *ibid.*, 293.

¹⁴ Joseph T. Crawford to Charles O' Gorman, May 13, 1837, Adams, *British Diplomatic Correspondences*, 5.

¹⁵ Margaret S. Henson, *Lorenzo de Zavala; The Pragmatic Idealist* (Fort Worth, Tex: Texas Christian University Press, 1996), 5.

¹⁶ *Ibid.*

¹⁷ Of the 364 schooners recorded by the Galveston consulate, 110 (30%) could be definitively cross-checked for specific dimensions in the New Orleans Ship Enrollment Registers.

¹⁸ Charles S. Morgan, "New England Coasting Schooners," *The American Neptune* 21, no. 1 (1963), 7.

¹⁹ Though only three vessels have detailed dimensions, 14 of the 18 sloops had a recorded tonnage.

²⁰ Only the ship *Austin* has recorded measurements. There were six ships recorded between 1815 and 1845.

²¹ George Gardner was one of the leading American naval architects. He designed a variety of vessels, namely yachts and schooners, including the *Atlantic* that won the Trans-Atlantic race in 1905 and the *Vanity* which won the America's Cup in 1914. Howard I. Chapelle, *The History of American Sailing Ships* (New York: W. W. Norton & Company, Inc., 1935), 350-351.

²² L. H. Dunkin also produced a revenue cutter, the *Levi Woodbury* for the U. S. Revenue Marine 1836. *Ibid.*, 204.

²³ An inventory of the ship's belongings indicates it was not carrying firearms. Juan Manuel Zambrano to Antonio Martínez, Oct. 9, 1818, *Béxar Archives*.

²⁴ José Mariano Guerra to Antonio Elozúa, May 19, 1832, *Béxar Archives*. Mariano Cosío to Antonio Elozúa, May 30, 1832, *Béxar Archives*.

²⁵ "Statement or Account of Mina's Expedition by J. M. Hebb [Isaac W. Webb]," encl. no. 3 in Venadito to the First Secretary of State, Mexico, 1819, Archivo General de Indias, Papeles de Estado, Audencia de Mexico, leg. 14. Harris G. Warren, "The Origin of General's Mina's Invasion of Mexico," *SHQ*, 42, no. 1 (1938), 18-19 n. 89.

²⁶ *Ibid.*, 19.

²⁷ For details of Jean Lafitte's exploits see Jean Laffite, *The Journal of Jean Lafitte: The Privateer's Own Story* (New York: Vantage Press, Inc., 1958).

²⁸ Felipe Roque de la Portilla to Joaquín de Arredonde, May 9, 1818, *Béxar Archives*

²⁹ *Ibid.*

³⁰ Martínez to Joaquín de Arredonde, June 11, 1817, Taylor, *The Letters of Antonio Martinez*, 6-8.

³¹ Martínez to Joaquín de Arredonde, June 29, 1817, Taylor, *The Letters of Antonio Martinez*, 30-31.

³² Felipe Roque de la Portilla to Joaquín de Arredonde, May 9, 1818, *Béxar Archives*

³³ *Ibid.*

³⁴ Warren, "The Origin of General's Mina's Invasion of Mexico," 18-19 n. 89.

- ³⁵ Mier y Terán to Antonio Elozúa, July 17, 1830, *Béxar Archives*.
- ³⁶ Antonio Elozúa, June 21, 1830, *Béxar Archives*.
- ³⁷ Rafael Chovell, July 3, 1830, *Béxar Archives*.
- ³⁸ Ward, *Mexico in 1827*, 307.
- ³⁹ *Ibid.*, 307-308.
- ⁴⁰ Juan de Dios Bonilla, *Apuntes para la Historia de la Marina Nacional* (Mexico: N.p., 1946), 109 and Robert L. Bidwell, *The First Mexican Navy 1821-1830* (Ph. D. diss., University of Virginia, 1960), 501.
- ⁴¹ Alexander Dienst, "The Navy of the Republic of Texas, Part I," *Quarterly of the Texas State Historical Association*, 12 (Jan. 1909), 279.
- ⁴² David F. Long, *Nothing Too Daring: A Biography of Commodore David Porter* (Annapolis: United States Naval Institute, 1970), 279.
- ⁴³ Ministerio de Guerra y Marina, *Memoria del Secretario de Estado y del despacho de Guerra y marina* (Evans Library, Texas A&M University, College Station, Tex.; Mexico: Imprente de Vicente G. Torres, 1845), microfilm, 40-41.
- ⁴⁴ Ward, *Mexico in 1827*, 309.
- ⁴⁵ Ministerio de Guerra y Marina, *Memoria del Secretario*, 40-41.
- ⁴⁶ Chappelle, *The History of American Sailing Ships*, 97.
- ⁴⁷ A. J. Yates, et al, *The Texas Republic*, Sept. 19, 1835.
- ⁴⁸ Henson, *Lorenzo de Zavala*, 1.
- ⁴⁹ *Ibid.*, 4. R. R. Royall to Stephen F. Austin, Oct. 13, 1835, in Barker, *Austin Papers*, 179. The McKinney and Williams firm at Quintana also served as the location of public military stores for the armies of Texas during the Texas Revolution. House, *Journals*, 89.
- ⁵⁰ McKinney and Williams to Mr. Gray, Quintana, Oct. 11, 1835, Barker, *Austin Papers*, 175.
- ⁵¹ McKinney, Thomas F., "Facts to which Thomas F. McKinney Begg Leave to Call the Attention of the Committee on Public Debt," McKinney's Papers, The Center for American History, The University of Texas, Austin. Franklin C. Gray to Public, Nov. 7, 1835, Jenkins, *Papers*, 2:348.
- ⁵² McKinney and Williams to B. T. Archer, Nov. 15 1835, Brinkley, *Official Correspondences*, 81-82.
- ⁵³ McKinney to President of the General Council, Nov. 11, 1835, Jenkins, *Papers*, 2:379-380.
- ⁵⁴ McKinney and Williams to R. R. Royall, Nov. 9, 1835, *ibid.*, 367-368.
- ⁵⁵ William Hall to Stephen F. Austin, Nov. 23, 1835, Adams, *British Diplomatic Correspondences*, 264-265.
- ⁵⁶ Provisional Government, *The Journal of the Proceedings of the General Council of the Republic of Texas* (Houston, Tex.: National Intelligencer Office, 1839), microfilm, 346.
- ⁵⁷ Works Progress Administration, *Ship Registers and Enrollments of New Orleans*, vol. 3 (N.p., 1942), 92.
- ⁵⁸ *Ibid.*

- ⁵⁹ S. R. Fisher to Provisional Government, Dec. 10, 1836, Charles Adams Gulick Jr. (ed.), *Papers of Mirabeau Buonaparte Lamar*, vol. 1 (1921; reprint, Austin: A. C. Baldwin and Sons, 1973), 275.
- ⁶⁰ Linn, *Reminiscences*, 259.
- ⁶¹ J. W. Fannin Jr. to Governor Henry Smith, Matagorda, Dec. 11, 1835, Jenkins, *Papers*, 3:158. The location of the wreck is also described as the shore at Paso Cavallo. S. R. Fisher to Provisional Government, Dec. 10, 1836, Gulick Jr., *Papers*, 1:275. John Linn describes the wreck as having occurred at the east pass of Pass Cavallo. Linn, *Reminiscences*, 259.
- ⁶² Thomas Pugh et al. "Deposition", Jenkins, *Papers*, 3:336-337. The *Montezuma* has been described by contemporary sources as being a brig-of-war, schooner-of-war, and a frigate. This vessel also went by the names of *Moctezuma*, *Bravo*, *Ariel*, and sometimes mistakenly the *General Bravo*. Its armament has been described as both 18 guns and 20 carronades. Robert L. Scheina, "The Forgotten Fleet: The Mexican Navy on the Eve of War, 1845" *American Neptune*, 30, no. 1 (1970), 47; Brinkley, *Official Correspondences*, 652; Bidwell, "The First Mexican Navy," 109; Dienst, "The Navy of the Republic of Texas," 189; Mariano Cosío to Antonio Elozúa., Oct. 19, 1832, *Béxar Archives*.
- ⁶³ S. R. Fisher to Provisional Government, Dec. 10, 1836, Gulick Jr., *Papers*, 1:274-275.
- ⁶⁴ Rose, *Historia of Victoria*, 111, 154.
- ⁶⁵ Linn, *Reminiscences*, 259.
- ⁶⁶ Franklin C. Gray to Public, Nov. 7, 1835, Jenkins, *Papers*, 2:348.
- ⁶⁷ S. Rhodes Fisher to Provisional Government, Dec. 17, 1835, Brinkley, *Official Correspondences*, 210.
- ⁶⁸ William L. Cazneau, Doc. no. 3. Account Sales of Cargo of the Wreck of the *Hannah Elizabeth*. Jenkins, *Papers*, 4:219.
- ⁶⁹ Texas Provisional Government, *Proceedings*, 168, 172-174, 249, 254, 272-273.
- ⁷⁰ *Journal of the House of Representatives of the Republic of Texas*, 3rd Cong., Nov. 5, 1838, 114, reprinted in James M. Day, "Texas Letters and Documents," *Texana*, 6 (1968), 90 (quotation).
- ⁷¹ Judiciary Committee, "Report of the Judiciary Committee on the Petition of the Captors of the Schooner Pelicano" House Journals of the 3rd Congress, the Republic of Texas (N.d.) 3, Dienst Papers, Barker Collection, Center for American History, University of Texas, Austin, Tex.
- ⁷² *Ibid.*
- ⁷³ S. W. Cushing, *Adventures in the Texas Navy and at the Battle of San Jacinto* (1857; reprint, Austin, Tex.: W. M. Morrison Books, 1985), 22, 23.
- ⁷⁴ *Ibid.*, 17-20.
- ⁷⁵ *Ibid.*, 24.
- ⁷⁶ *Ibid.*, 17-20.
- ⁷⁷ John H. Jenkins, "The Texas Navy, Los Diablos on the High Seas," *The American West*, 5, no. 3 (May 1968), 36.

⁷⁸ W. S. Brown to Editor, May 8, 1830, *The Papers of the Texas Revolution, 1835-1836*, vol. 6, (ed.) John H. Jenkins (Austin, Tex.: Presidential Press, 1973), 187.

⁷⁹ Republic of Texas Navy Papers (Archives Division, Texas State Library), reprinted in Day, "Letters and Documents," 89.

⁸⁰ Republic of Texas navy Papers (Archives Division, Texas State Library), reprinted in Day, "Letters and Documents," 94. House of representatives of the Republic of Texas, Regular Session of the 3rd Cong., 1838, 114 in Day, "Letters and Documents," 90.

CHAPTER IV

ANALYSIS OF ARMS MATERIALS

Of the assorted artifacts recovered from the wreck site, firearms represent the largest portion of the collection. There are 53 firearm-associated artifacts. Ten of these artifacts are semi-complete firearms that contain locks. Ten of the artifacts are solely remnants of gun barrels with and without associated stocks and brass furniture. The remainder of the collection is comprised of loose component parts that have no direct relationship with its original weapon.

The firearms from the survey can generally be described as belonging to two major categories; those of either British influenced design or Spanish influenced design. Firearms produced in the colonies generally copied British 'Brown Bess' musket patterns prior to the American Revolution; hereafter they were modeled after those produced in Charleville, France.¹ Five of the nine Brown Bess firearms were stamped or etched on the lockplate with a crown, GR, broad arrow, or TOWER mark, denoting that they are British arms. In absence of marks indicating affiliation with the crown or known British manufacturers, the firearms categorized as British could also indicate British copies produced in the American colonies.

The majority of the artifacts are military arms that can be categorized as one of three major patterns or models: the Model 1757 Spanish musket, British Short Land Pattern, or the British India Pattern (fig. 8). The three British pattern military muskets,

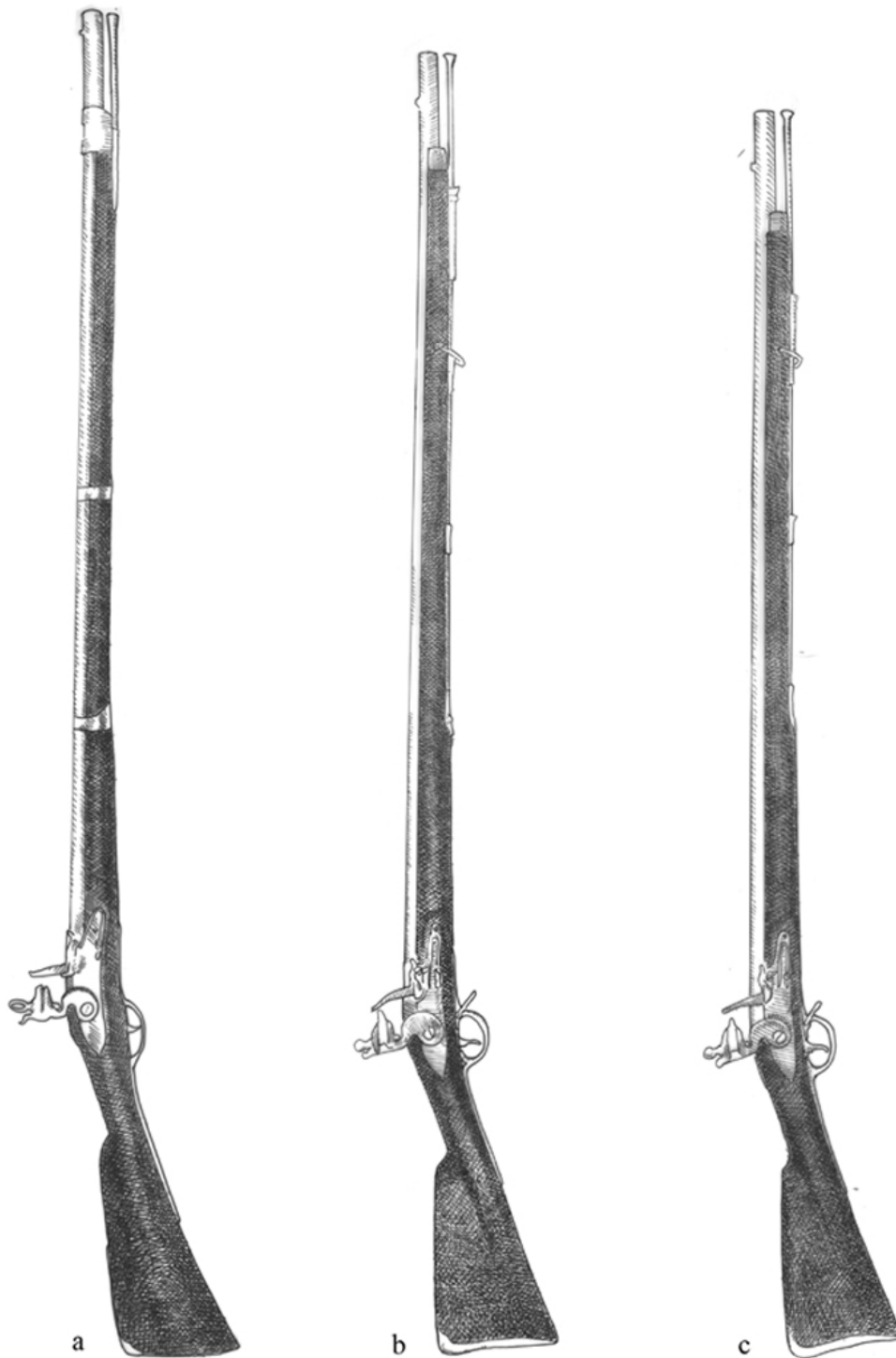


Figure 8. Three Patterns of Military Arms in Texas. a) 1757 Spanish musket, b) British Short Land Pattern, and c) British India Pattern. *Illustrations by A. Borgens after José Borja Pérez, La Historia, 29 and A. V. B. Norman and G. M. Wilson, Treasures from the Tower of London: An Exhibition of Arms and Armour (Bradford: Lund Humphries, 1982), 108.*

nicknamed the Brown Bess, were collectively manufactured between 1717 and 1815.² Firearm furniture from the Long Land and Short Land Pattern muskets are sometimes indistinguishable from one another. The 1757 Spanish musket was manufactured until it was superseded by two new musket patterns; the Model 1790 and Model 1792 muskets.³

BRITISH SMALL ARMS

British Pistol

There is only one unidentifiable small arm that was located on the wreck and collected in the survey (fig. 9). This arm is also the only pistol found in the survey. This type of flintlock pistol, with the wood fore-end running to the muzzle, was one of the two major types of flintlock produced between 1640 and 1840.⁴ In the early 19th century, the amount of stock extending to the muzzle was reduced, and termed 'half-stock'.⁵

The pistol is almost complete; the stock terminates near the dorsal edge of the lockplate. The pistol fragment is 15.94 inches (40.50 centimeters) in length. Cloth fragments were concreted to the exterior of the lock and barrel. These fragments are evidence of a multi-fabric, hand-stitched bag, which may have stored the pistol. The fabrics were both plain and patterned; the patterned fabric consists of interwoven pinstripes. The furniture is of cast brass and includes the trigger guard, trigger plate, sideplate, ramrod pipe, and tailpipe. The ramrod itself is made of wood, not iron as the

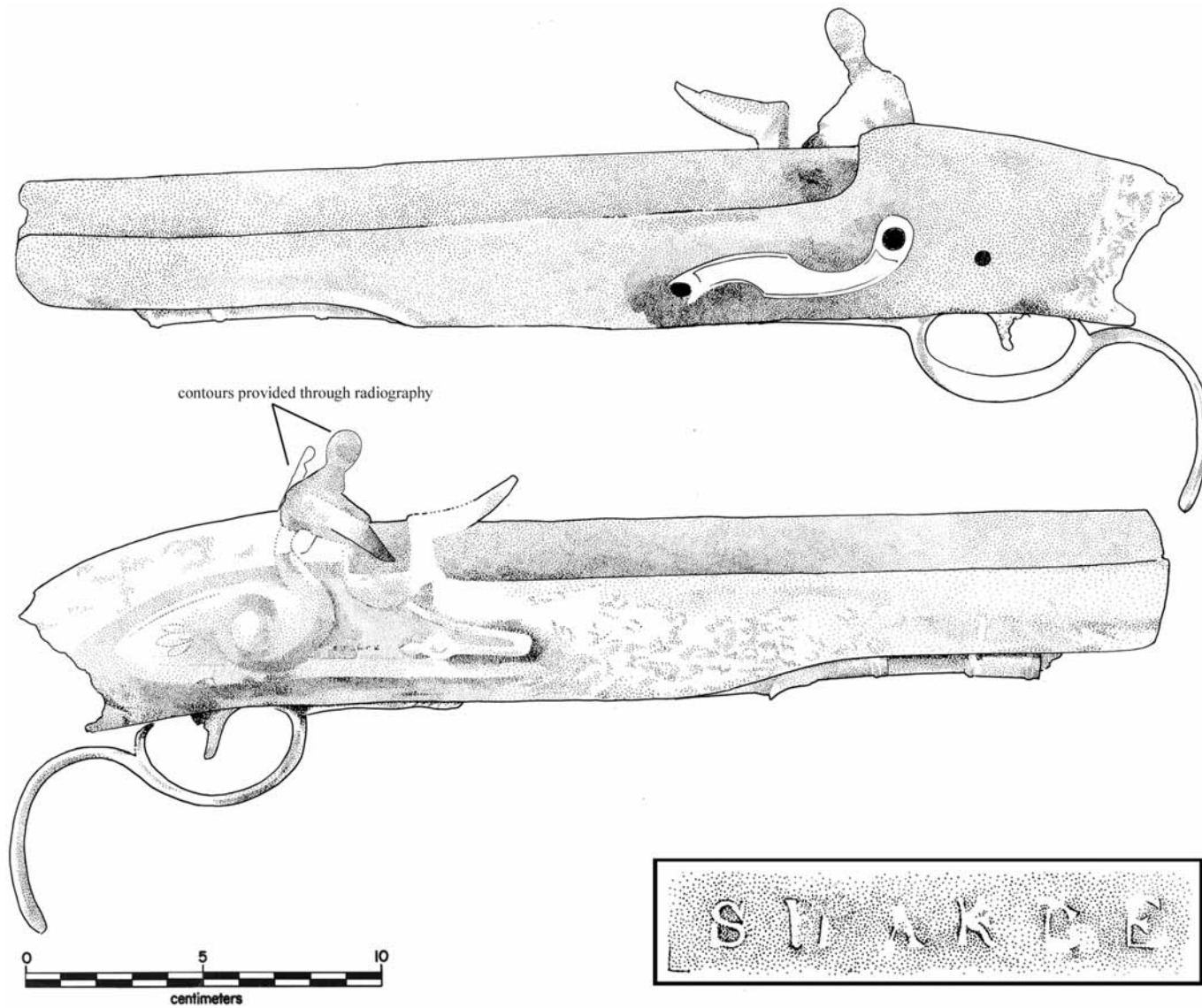


Figure 9. Pistol Artifact 14946 with Detail of Maker's Mark. *Illustrations by A. Borgens.*

other arms from the survey. The trigger guard is of an earlier form, with an inward curl to the bow. The pipes, sideplate and trigger plate are all decoratively etched. The form of the finial and the decoration of the bow are almost identical to that of an isolated trigger guard recovered in the survey, 14942. The tailpipe and trigger guard are hand etched. Some of the engraved marks were created with a multi-liner tool generally believed to be in use after 1800.⁶ The wooden ramrod and belt hook (not pictured in the illustration) are features special to arms issued for naval use.⁷

The lock is a simpler style with a gooseneck cock and a somewhat rectangular cock comb. The lockplate has an almost straight lower edge, demonstrating the prevailing trend in design evident in the 2nd half of the 18th century. Both the cock and the lockplate are flat. The lockplate is stamped with a mark, 'SHARPE' located forward of the cock under the pan (fig. 9). Sharpe and Company, a Birmingham, England based



Figure 10. Lockplate Mark. Tulip design used by Ketland and Company. *Photography by A. Borgens.*

contractor, manufactured arms from 1771-1823.⁸








A tulip design (fig. 10) decorates the lockplate at the tail. The tulip design was a Ketland and Company mark used on some of their arms or company products.⁹ John and Thomas Ketland produced British firearms and component parts from 1745-1800.¹⁰ The manufacture of Ketland firearms and components was continued by Ketland descendants until 1831.¹¹ Ketland locks were imported in large quantities by colonists for use in the local production of firearms. John and Thomas Ketland were active in Philadelphia from 1797-1800, where they were contacted to supply American gunsmiths with various imported firearm components from their Birmingham factories.¹² Seven different Ketland firms were operating in Birmingham from 1750-1828.¹³

The British pistol was made by Sharpe and Company using a Ketland Company lock. Due to the degree of engraving and the specialization of both Sharpe and Ketland Companies in the American trade, it is probable that this weapon was made specifically for American trade.¹⁴ The weapon has attributes of both British Light Dragoon and Sea Service pistols. It is likely that private contractors incorporated characteristics of British military patterns in the design of their trade weapons.

Long Land and Short Land Pattern Arms

The Long Land firearm was a smoothbore flintlock musket with a 46-inch barrel.¹⁵ Though these arms were originally fitted with iron furniture, cast brass furniture would start to be used in 1725.¹⁶ Steel ramrods would become standard on British arms beginning in 1768, supplanting the wood ramrods originally used on Long

Table 1. Diagnostic Arms Measurements (in).

artifact number	14947	14986	14946	14982	14989	14902	14903	14988	14995	14996
description	SP 1757	SP 1757	GB pistol	GB Short	GB Short	GB India	GB India	GB India	GB India	GB India
overall length	15 1/3*	10 1/8*	13 3/16*	7*	46 5/16*	15 1/3*	14 1/4*	20 1/3*	20 4/5*	19 5/8
barrel length	9 13/16	5 15/16	9 3/16*	NA	41 3/8	10 1/2	10 13/16*	15*	15 15/15	TBA
barrel diameter	1 1/8	1 1/4	1	NA	1	1 1/8	1 1/16	1 1/16	1 1/8	TBA
barrel tang length	NA	NA	2 1/8	NA	NA	2 1/4	2 1/2	NA	NA	TBA
lock plate length	6 3/8	6 3/8	4 3/8	7	7	6 7/8	6 15/16	~6 3/4	6 15/16	TBA
lock plate height	1 5/16	1 5/16	13/16	1 5/16	1 3/16	1 1/4	1 1/4	~1 3/16	1 3/16	TBA
steel face height	1 3/4	1 7/8	1 3/16	1 15/16	1 7/8	1 1/2	1 7/8	1 1/2	2 1/16	TBA
steel face width	1 1/2	1 3/16	11/16	1 3/16	1 3/16	1	7/8	1	1	TBA
throw of cock	1 5/7	1 7/8	1 3/8	1 11/16	1 13/16	1 13/16	1 3/4	1 13/16	1 3/16	TBA
ramrod or channel diam.	NA	NA	3/8	NA	1/4	1/4 CH	1/4 CH	NA	1/4	TBA
ramrod material	ferrous	ferrous	wood	NA	ferrous	ferrous	ferrous	ferrous	ferrous	ferrous
tailpipe length	NA	NA	2 1/4	NA	4 1/4	NA	NA	4 9/16	4 11/16	4 11/16
tailpipe diameter (mouth)	NA	NA	5/16	NA	1/2	NA	NA	1/2	1/2	1/2
tailpipe to 1st pipe	NA	NA	7/8	NA	5 1/2	NA	NA	NA	NA	NA
first pipe length	NA	NA	7/8	NA	1 3/8	NA	NA	NA	NA	NA
first pipe diameter	NA	NA	3/8	NA	7/16	NA	NA	NA	NA	NA
trigger guard length	NA	NA	4 3/8	NA	6 7/8*	5 7/8*	NA	5 3/4*	NA	5 3/4*
bow width	NA	NA	13/16	NA	1 1/16	1	NA	NA	NA	1
sideplate length	6 9/16	6 1/2	2 9/16	6 3/8	6 3/8	4 1/4	4 1/4	4 1/4	4 1/16	4 1/4
trigger plate length	NA	2 1/2*	2 3/8	NA	3 1/2	2 1/2	2 1/2	2 3/8	2 9/16	2 5/8
trigger plate width	NA	5/8	9/16	NA	3/8	3/8	3/8	11/16	11/16	11/16
lock marks	NA	YBASETA	SHARPE	TOWER, 		TOWER	NA	TOWER, 	TOWER, 	TBA
				GR, WI (int.)*				 GR	 GR	

* incomplete

Land muskets.¹⁷

The decision to shorten the barrel on the Long Land musket initiated the design of a new pattern, the Short Land musket, which began production in 1769.¹⁸ This model, in its first years of production, was essentially the same as the preceding Long Land Pattern, though the barrel was now shortened to 42 inches. Within a few years, several innovations to the Short Land musket would make it markedly different in its appearance from its predecessor. The second ramrod pipe was designed with a fluted, bell-shaped, mouth to prevent damage to the ramrod guide.¹⁹ The lock was restyled and made more durable by the addition of such features as a redesigned top jaw and top jaw attachment method. The top jaw screw was now both pierced and slotted, and the tre-foil of the sear spring was simplified.²⁰ A third variation of the Short Land musket incorporated further design changes. The third ramrod pipe was now no longer barrel shaped, but had a fluted mouth like that of the forepipe. The tang of the cock was also no longer notched.²¹ Diagnostic measurements of arms in the collection are presented in table 1. Measurements are given in inches for the arms were constructed in that system and most of the comparative data is presented in that system as well.

Two examples of the Short Land Pattern musket were recovered from the wreck, as well as two loose trigger guards, and a single buttplate. The trigger guards and the buttplate are no longer associated with the original weapon.

The two Short Land muskets both have evidence of Board of Ordnance marks and are both furnished with the flat sideplate. Firearms manufactured for the Board of



Figure 11. Short Land Pattern Musket. Left side, right side, and bottom view. Artifact 14989 prior to disassembly. Ramrod and barrel are both bent but in different directions. *Photography by A. Borgens.*

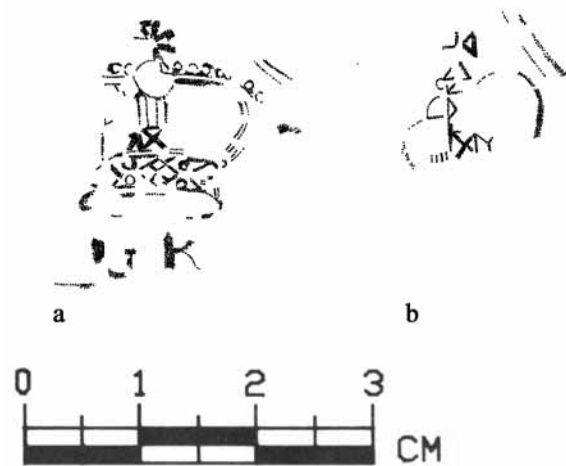


Figure 12. Short Land Artifact Lock Marks. Crown marks from the lockplates of artifacts a) 14982 and b) 14989. *Illustrations by A. Borgens*

Ordnance had their locks stamped with the broad arrow, a crown, and the GR. The tail of the lockplate was stamped with the name of the maker. The locks on both musket artifacts have evidence of the crown etched under the lockplate. Lock 14982 has a TOWER, mark stamped on the tail, though only the letters OWE are now discernible. Neither gunlock is dated, a practice discontinued after 1764 (table 1).²² Both Short Land muskets have a brass sideplate with a flat surface. The flattened sideplate was a derivation from the sideplate used on the earlier Long Land and earlier Short Land muskets. The sideplates on these arms had a rounded surface. Beginning in 1769 and continuing until the end of production, the Short Land musket was furnished with a sideplate having a flattened surface.²³

Musket 14989 (fig. 11) is the most complete longarm from the artifact collection. This musket, when recovered, was almost complete, extending from the small of the stock to the muzzle. The musket is in poor condition. Tored damage has affected a

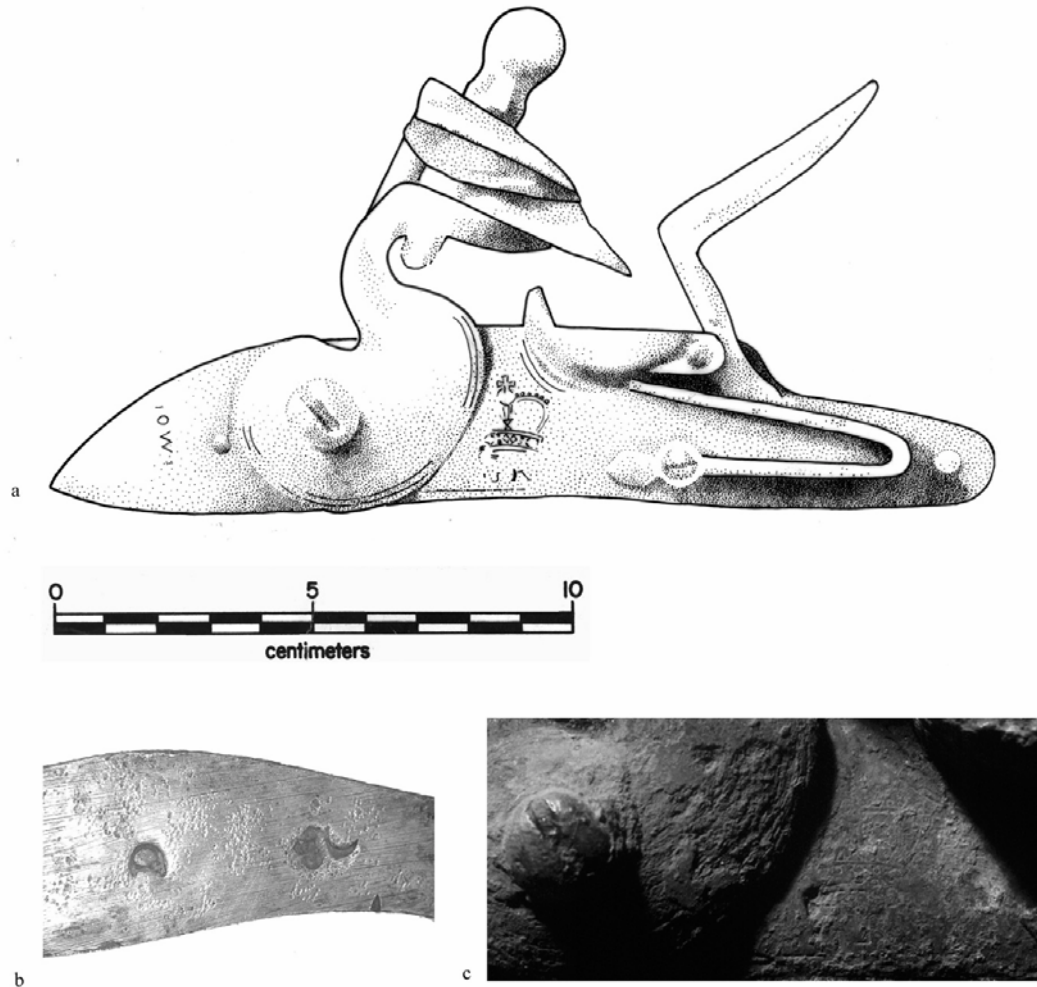


Figure 13. Short Land Pattern Lock, Artifact 14982. a) lockplate b) detail of sideplate marks. c) detail of lock mark. *Photography and illustration by A. Borgens.*

majority of the wood stock. In the area of the stock between the tailpipe and the nosecap, there is no surviving wood. The third pipe, forepipe, nosecap, and ramrod are missing. The barrel of the firearm is slightly bent, as well as the ramrod. Though the lockplate is not well enough preserved to have evidence of a maker's mark, remnants of a crown are evident on the lockplate under the flash pan (fig. 12).

The second Short Land Pattern arm, 14982 (fig. 13), is represented only by the

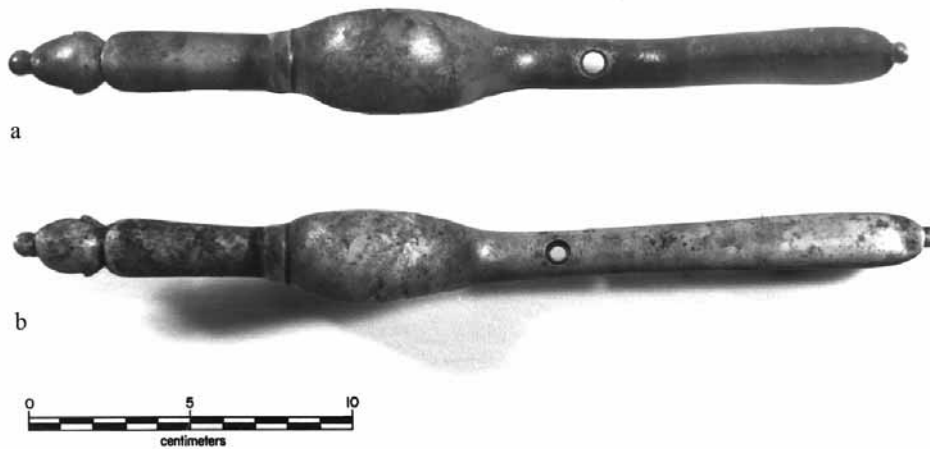


Figure 14. The '1742' Pattern Trigger Guards. a) 14981 and b) 14986-2. *Photography by A. Borgens.*

lock and the sideplate. The lockplate is stamped with a TOWER mark, of which only the OWE are now visible. Under the flash pan are the royal crown and a GR. The interior of the plate is stamped with an IM (or WI if inverted). The interior surface of the sideplate is stamped with stylized crown over a crescent (or C). Both muskets used a lead flint cap, shown on top of the gunflint in fig. 11a, to hold the flint in place. Flint caps were used on military muskets, rifles, and pistols.²⁴

The two Short Land Pattern trigger guards are of cast and filed brass (fig. 14). The trigger guards have an inward curvature to the bow. Both the tangs terminate in a rounded nipple. This particular trigger guard was used on both Long Land and Short Land muskets, and is termed the '1742 trigger guard', nicknamed after its year of introduction.²⁵ Both trigger guards are complete and are stamped with proof marks. One Short Land Pattern buttplate, with the Roman numeral for 41, XLI, is also part of



Figure 15. Short Land Pattern Buttplate. End, side, and bottom views. Artifact prior to conservation. *Photography by A. Borgens.*

the artifact collection (fig. 15). The buttplate is of cast and filed brass. There are no interior scratches, notches, or proof marks. The stamped XLI, on the exterior surface of the buttplate tang, is the regimental mark for the 41st regiment. The 41st Regiment was stationed in Canada during the War of 1812.²⁶ Following the unit's tour in Upper Canada, the regiment was stationed at Kingston and Quebec in 1814, before returning to Europe in the spring of 1815.²⁷ The 41st regiment that embarked to England in 1815 consisted of 1,251 troops.²⁸ In the 1820s and 1830s, the 41st Regiment would see service in France, Scotland, and India.²⁹

India Pattern Arms

The India Pattern arm was manufactured in large quantities for, and by, the British Board of Ordnance beginning in 1794.³⁰ Britain's involvement in France's Revolutionary War created an immediate need for firearms.³¹ In order to fill this demand, Britain acquired arms from the East India Company. The East India Company manufactured firearms for British and Indian troops stationed in India. These arms were often considered inferior in quality to those arms manufactured in Britain for British troops both localized and abroad. The firearm produced by the India Company and utilized by Britain was the Windus Patten musket. The Windus Pattern musket was produced by the East India Company since 1771.³² In order to simplify supply and repair of these arms, the Board of Ordnance began manufacturing a copy of this weapon, fittingly called the India Patten musket, in 1795.³³ At least 676,800 India Pattern muskets were produced by the East India Company and approximately 2,800,000 by the Board of Ordnance.³⁴ This musket is considered the most produced musket in the history of British arms production.³⁵

The India Pattern musket was a .75 caliber, smoothbore musket weighing between nine and ten pounds. The musket was a simplified version of the preceding Short Land Pattern. The brass furniture was simpler in design, the barrel was shortened, and one less pipe was used to retain the ramrod. Generally this weapon was not as skillfully manufactured as earlier British muskets. The demand for these weapons forced the Ordnance to relax inspection criteria in order to expedite production and distribution. Due to the relaxed inspections, India Pattern muskets manufactured under



Figure 16. East India Musket Artifacts. Artifacts from the Pass Cavallo Wreck. a) 14902, b) 14903, c) 14995. *Photography by A. Borgens.*

private contracts are generally marked only with the maker's name on the lock.³⁶

In 1815, the British Board of Ordnance discontinued the production of the India Pattern musket replacing it with a further simplified musket. This new musket, called the New Land Pattern, discontinued several features common to the India musket and simplified the buttplates and trigger guards. The East India Company made similar modifications to their firearms. None of the characteristics of the latter, simplified firearms occur on any of the arms retrieved from the Pass Cavallo wreck.

More India arms were recovered in the survey than any other arm pattern. There

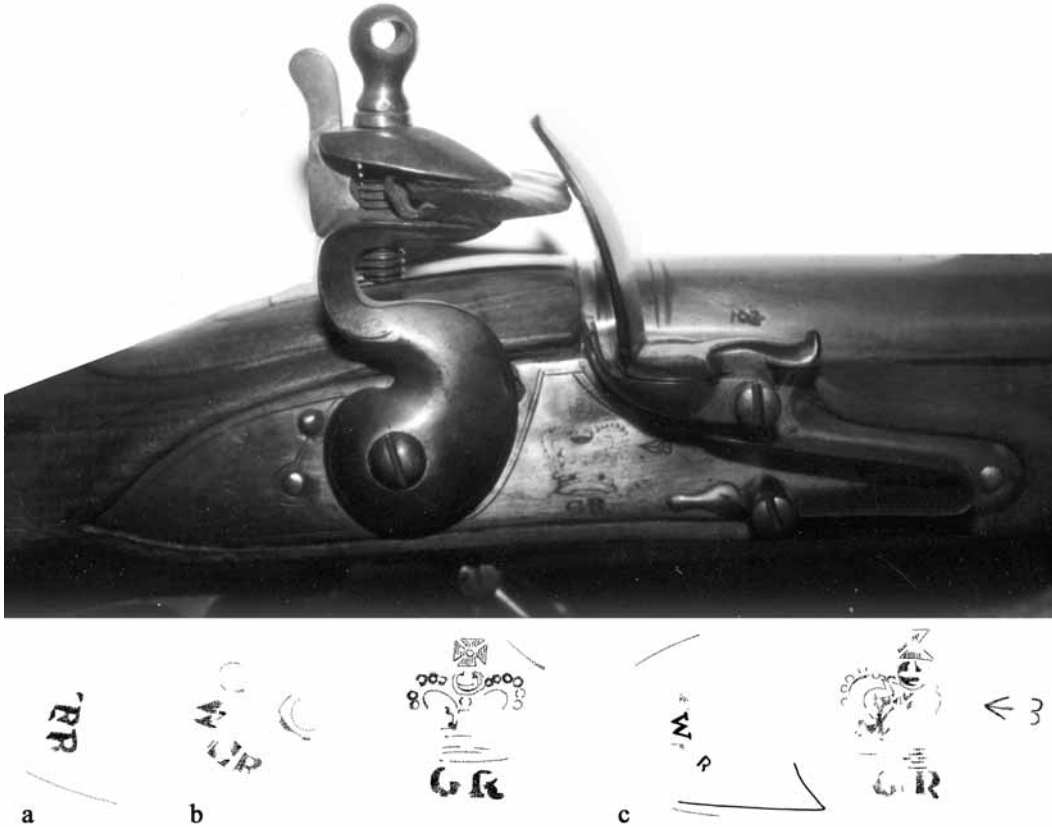


Figure 17. Lockplate Markings. a) unfired India Pattern musket (collection of Bill Caruth, Dallas, TX) b) 14902, c) 14988, d) 14995. *Photography and illustrations by A. Borgens.*

are 7 musket fragments, 9 loose trigger guards, and 12 loose buttplates. Five of the firearm fragments have locks (three are pictured in fig. 16) and three fragments are of the barrel.

The poor preservation of the arms does not allow for many surviving lock marks. Two muskets have partially discernible crowns located under the flashpan (fig. 17). Characteristic of the crowns (fig. 17c and d) and of the broad arrow (fig. 17 d) date the locks to at least 1810.³⁷ All the muskets have the reinforced throat-hole cock used on India Pattern and Windus Pattern muskets after 1809 and 1813 respectively.³⁸ Several of

the brass furniture items have Roman numeral markings stamped or notched into their surfaces. These marks were placed on most all of the furniture pieces to a single musket, as well as in the stock's ramrod channel.³⁹

The India Pattern barrel fragments can be identified from the design change in one of the ramrod pipes. Though the redesigned pipe was used on the last variation of the Short Land musket, it was to become a standard feature on India Pattern muskets.⁴⁰ The new pipe, introduced by William Pratt in 1777, had a fluted mouth (funnel shaped) like that of the forepipe. The reduction in the number of pipes also created a change in the spacing between the pipes and in the distance between the nosecap and forepipe (fig. 18). On the preceding Short Land Pattern, the distance from the mouth of the forepipe to the end of the nosecap was two inches. In the India Pattern muskets, the spacing between the forepipe and the nosecap is approximately four inches. There are three barrel fragments that are tentatively identified as India Patterns due to the occurrence of the Pratt pip and also the pipe spacing.

With the production of the India Pattern musket, several of the brass furniture

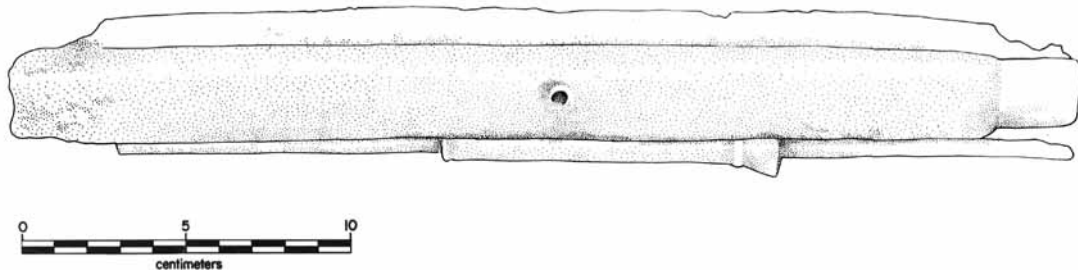


Figure 18. India Pattern Barrel. Artifact is indicative of spacing between nosecap and forepipe characteristic of India Pattern arms. *Illustration by A. Borgens.*

items became more simplified in appearance (fig. 19). The elongated sideplate was shortened. The trigger guard was also shortened and its method of attachment was altered. The '1742' trigger guard was attached through the use of two lug/pin attachments and a screw. The India Pattern trigger guard was affixed through the use of two screws and one lug/pin attachment. The inward curvature of the bow and the nipple tang finials, both standard features of the '1742' trigger guard, were absent on the India

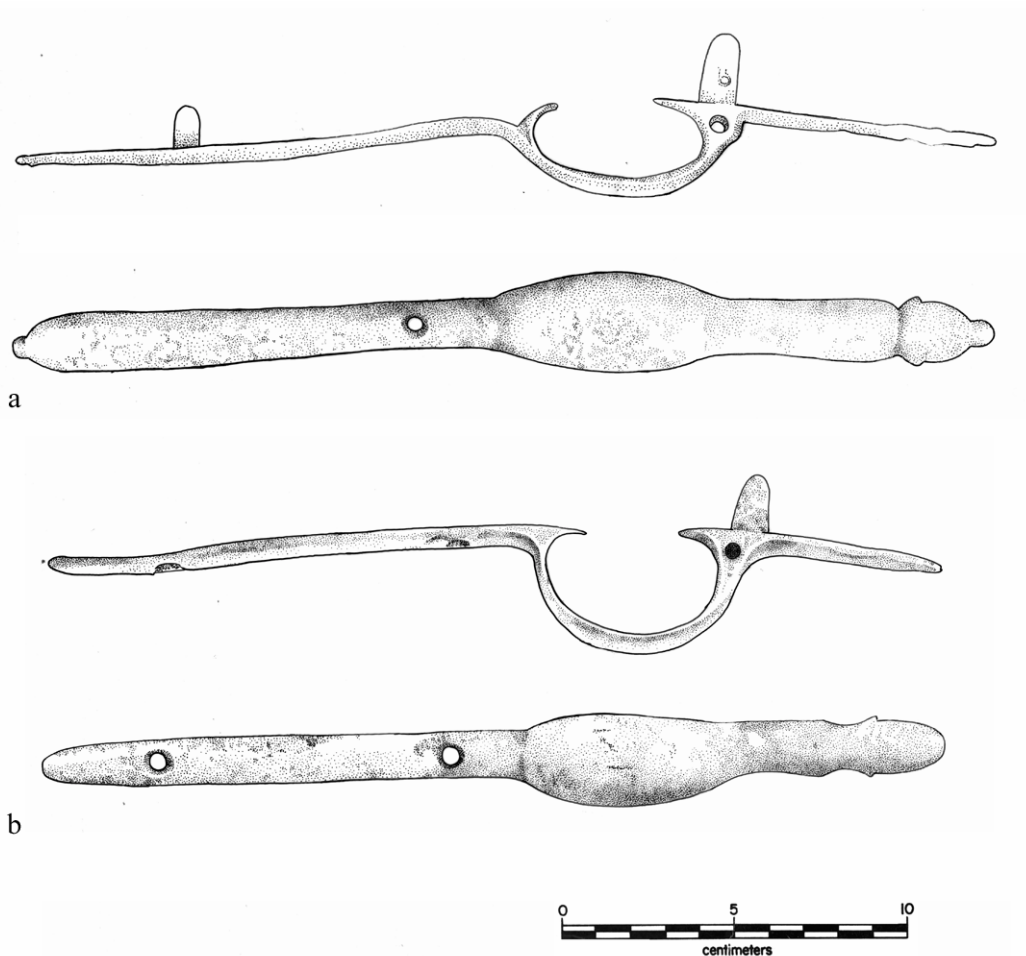


Figure 19. British Musket Trigger Guards. a) the '1742' Pattern trigger guard and b) The India Pattern trigger guard. *Illustrations by A. Borgens.*

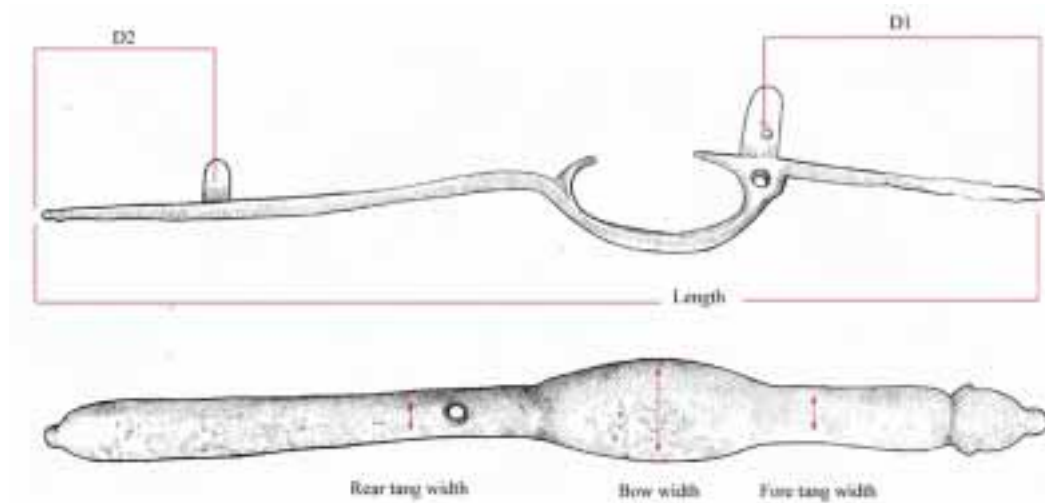


Figure 20. Diagnostic Measurement Points for Table 2. *Illustration by A. Borgens.*

Table 2. Trigger Guard Dimensions (in).

Artifact No.	Type	Length	Width RT	Width FT	Thickness RT	Thickness FT	D 1	D2	Bow width
14913	Spanish	6 9/16	7/16	7/16	1/8	1/8	2 7/8	NA	3/4
14939	Spanish	8 1/4	7/16	7/16	1/8	1/16	NA	NA	13/16
14981	Short Land	11 1/16	9/16	5/8	3/16	3/16	3 1/16	1 9/16	1 1/8
14986-2	Short Land	11 5/16	5/8	1/16	3/16	3/16	3 1/8	2	1 1/8
14926	Lawrence?	5 9/16	7/16	7/16	1/8	3/16	1/4	NA	3/4
14907	India	4 1/2	1/2	NA	3/16	NA	NA	NA	NA
14938	India	5 3/4	9/16	5/8	1/8	1/8	2 5/8	NA	15/16
14943	India	4 9/16	1/2	NA	3/16	NA	NA	NA	NA
14944	India	4 11/16	1.46	NA	1/8	NA	NA	NA	NA
14984	India	10 7/16	9/16	9/16	3/16	3/16	2 1/4	NA	1
14989-2	India	5 9/16	1/2	9/16	3/16	3/16	2 3/8	NA	1 1/16
14994	India	4 11/16	9/16	NA	1/8	NA	NA	NA	NA
14995-2	India	5 5/8	1/2	9/16	3/16	3/16	2 3/8	NA	1
14995-7	India	4 7/8	9/16	5/8	3/16	3/16	2 7/16	NA	1
14941	Unknown	5 7/16	9/16	1/2	1/8	1/8	2 9/16	NA	13/16
14942	Unknown	5 7/16	3/4	7/16	1/8	1/8	1 5/8	2 1/4	3/4
14995-5	Unknown	1 1/16	NA	NA	1/8	NA	NA	NA	NA

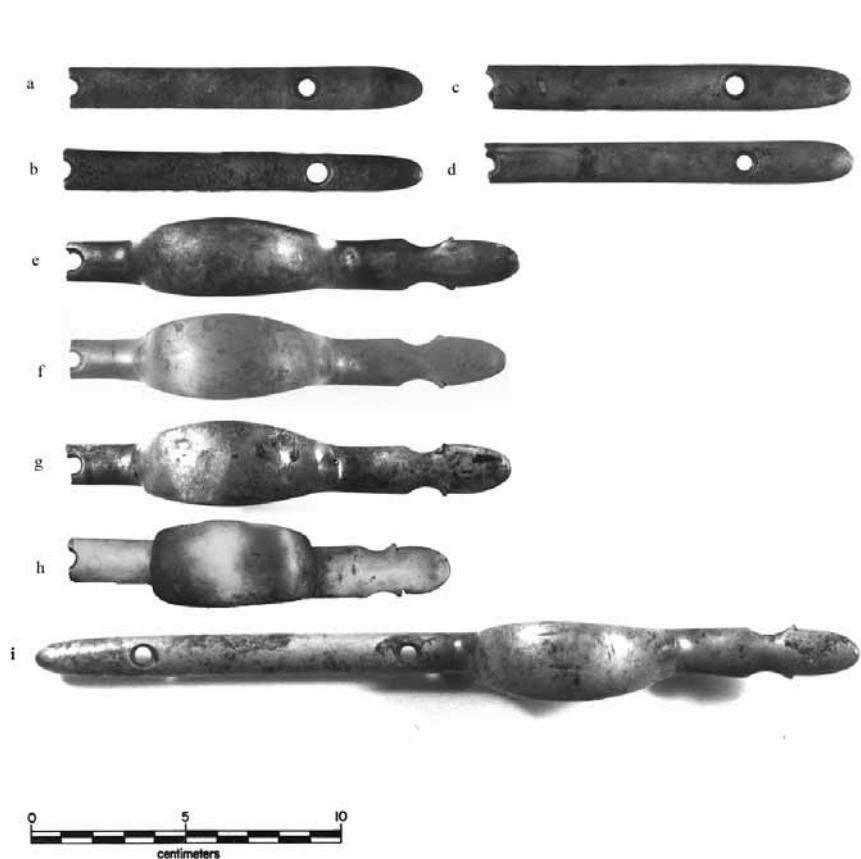


Figure 21. India Pattern Trigger Guards. a) 14907, b) 14943, c) 14944, d) 14994, e) 14938, f) 14989-2, g) 14995-2, h) 14995-5, i) 14984. *Photography by A. Borgens.*

trigger guard. With the introduction of the India Pattern, these features were no longer characteristic of the trigger guards.⁴¹ The trigger plate also became shorter and simpler in design. The India buttplate was similar to that of the Short Land Pattern, though shortened and with a less pronounced curvature between the steps on the tang.

There are nine loose India Pattern trigger guards (fig. 20, fig. 21, and table 2). Eight of the trigger guards are broken. Four trigger guards are of the rear tang, four are of the bow and fore tang, and one trigger guard is complete. There are some markings on the trigger guards. Several have ambiguous proof marks such as the 'C' or 'P'.

Many of the trigger guards have notches, often made with files, on the interior surface. These notch marks represent Roman numeral distinctions given to each brass furniture item used on a single musket. When several guns were being disassembled at the same time these marks were essential, as not all the parts were similar enough to be interchangeable.⁴²

There are 13 buttplates having a three-step taper of the India type design (fig. 24, table 3). The surfaces of the buttplate are varyingly eroded or polished smooth due to exposure in the marine environment.

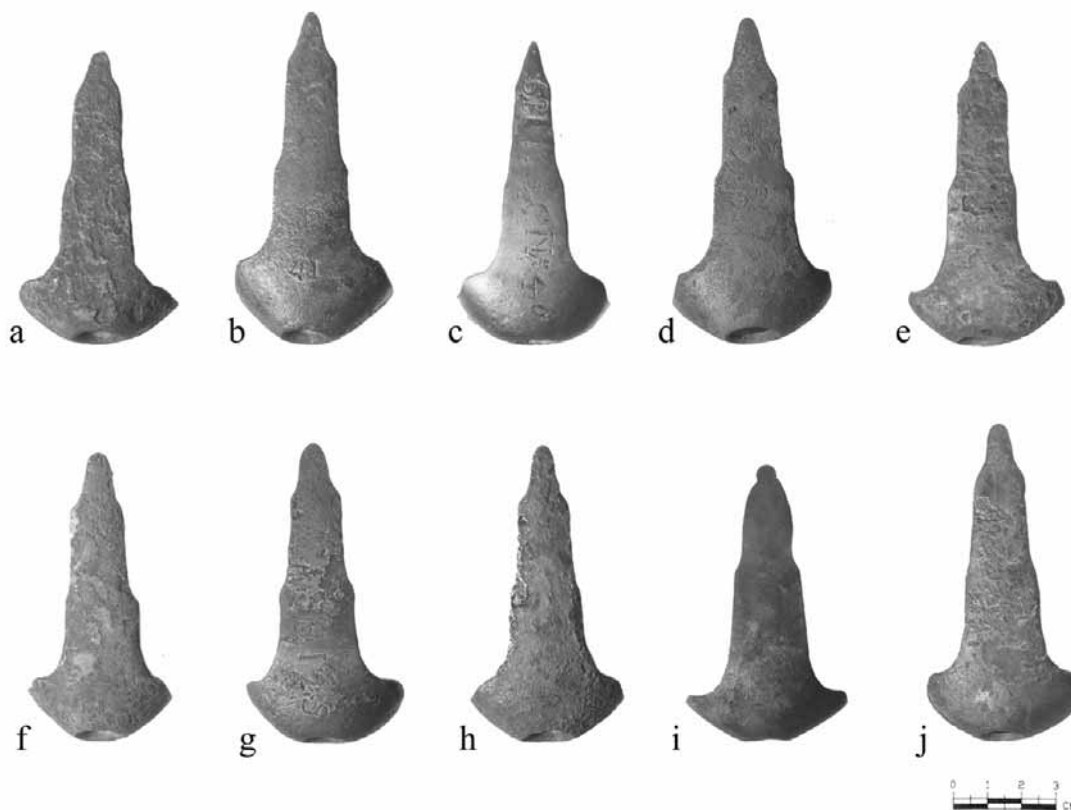


Figure 22. Buttplate Tangs. a) 14914, b) 14915, c) 14916, d) 14917, e) 14918, f) 14929, g) 14930, h) 14934, i) 14998, j) 15000. *Photography by A. Borgens.*

The East India Company manufactured a variety of firearms furnished with this buttplate. The musket was the largest arm fitted with the India Pattern buttplate though it was also used on the company's carbines and fusils. The East India fusil was fitted with this plate from 1771-1811 and the cavalry carbine from about 1781 to 1810.⁴³

Buttplate 14916 is marked with a regimental mark, indicating that it was fitted to a carbine. The numbers and letters GBI M5 C N 40 (fig. 22c) are hand etched into the exterior surface of the buttplate tang. This is the mark of the Grenadiers Bombay Infantry, Model 5, Carbine number 40.⁴⁴

The exterior surface of the buttplate tang on artifact 14917 also has a hand etched mark. The number 52 below a bugle (fig. 22d and 23) is the mark of the 52nd Regiment of Foot, Light Infantry Unit.⁴⁵ The hand etched mark of the ribbon above a bugle is more simply executed than that depicted on the comparative badge. The 52nd Regiment,



Figure 23. Regimental Mark. Detail of mark and detail of badge ornament. *Badge ornament illustration by A. Borgens after Newbolt, Story of the Oxfordshire, 170. Photography by A Borgens.*

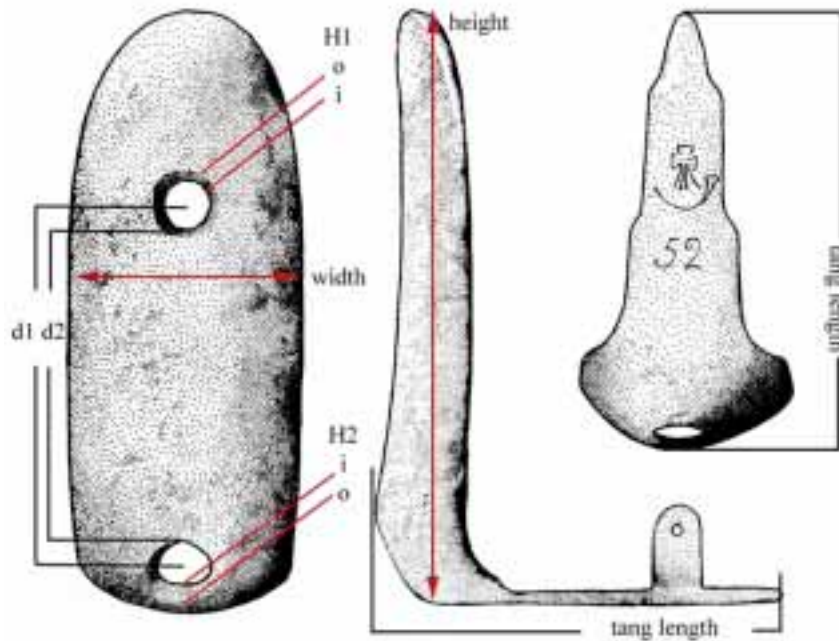


Figure 24. Diagnostic Measurement Points for Table 3.

Table 3. Buttplate Dimensions (in).

Artifact No.	Type	Length	Tang length	Hole 1 O. Dia.	Hole 1 I. Dia.	Hole 2 O. Dia.	Hole 2 I. Dia.	D 1	D2
14914	India	5	3 $\frac{3}{8}$	$\frac{5}{8}$ x 9/16	7/16 x $\frac{3}{8}$	NA	7/16	3	NA
14915	India	5 $\frac{1}{8}$	3 $\frac{13}{16}$	1 $\frac{3}{16}$ x 9/16	5/16	$\frac{1}{2}$	5/16	3 $\frac{11}{16}$	2 $\frac{11}{16}$
14916	India	4 $\frac{7}{8}$	3 $\frac{7}{16}$	9/16	NA	7/17 x $\frac{1}{2}$	NA	NA	2 $\frac{1}{2}$
14917	India	5	3 $\frac{11}{16}$	9/16	3/8	$\frac{1}{2}$	7/16	3 $\frac{1}{16}$	2 $\frac{1}{2}$
14918	India	5	3 $\frac{11}{16}$	$\frac{5}{8}$ x 9/16	7/16 x $\frac{3}{8}$	9/16	3/8	3 $\frac{1}{16}$	2 $\frac{1}{2}$
14919	India	5 $\frac{1}{16}$	3 $\frac{7}{16}$	$\frac{5}{8}$ x 9/16	5/16	9/16	7/16	2 $\frac{15}{16}$	2 $\frac{7}{16}$
14920	India	4 $\frac{3}{4}$	3 $\frac{5}{16}$	7/16	9/16	$\frac{1}{2}$	7/16	3	2 $\frac{9}{16}$
14929	India	4 $\frac{5}{16}$	3 $\frac{1}{2}$	9/16	$\frac{1}{2}$ x 7/16	9/16	$\frac{3}{8}$	2 $\frac{7}{8}$	2 $\frac{5}{16}$
14930	India	5	3 $\frac{3}{8}$	9/16	5/16	1.17/1.36	5/16	3 $\frac{1}{16}$	2 $\frac{1}{2}$
14934	India	4 $\frac{7}{8}$	3 $\frac{1}{2}$	$\frac{5}{8}$ x 9/16	7/16 x $\frac{3}{8}$	$\frac{5}{8}$ x 9/16	7/16 x $\frac{3}{8}$	2 $\frac{7}{8}$	2 $\frac{5}{16}$
14988-4	Short	5 $\frac{1}{16}$	3 $\frac{7}{16}$	9/16	$\frac{3}{8}$	9/16 x 5/8	$\frac{3}{8}$	3 $\frac{1}{8}$	2 $\frac{9}{16}$
14998	?	4 $\frac{3}{8}$	3 $\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{1}{2}$	5/16	3 $\frac{1}{16}$	2 $\frac{3}{8}$
14999	India	4 $\frac{15}{16}$	3 $\frac{7}{16}$	11/16	7/16	$\frac{5}{8}$	7/16	2 $\frac{11}{16}$	2 $\frac{1}{4}$
15000	India	5 $\frac{1}{16}$	3 $\frac{9}{16}$	9/16	5/16	$\frac{1}{2}$	5/16	2 $\frac{15}{16}$	2 $\frac{7}{16}$

also known as the Oxfordshire Regiment of Foot, was originally composed of two battalions. The first battalion of the 52nd Regiment of Foot would later be designated the 96th Regiment of Foot in 1803.⁴⁶ The second battalion was established as a Light Infantry unit in 1810.⁴⁷ The 52nd, 43rd, and the 95th Regiments would all be deployed to fight in Spain during the Peninsular campaigns.⁴⁸

In addition to scratches on the interior surface of the buttplate, representing Roman numeral markings, many of the buttplates are marked with proof marks and rack numbers. Buttplate 14915 is stamped with a D over the number 41 (fig. 22b).

Table 4. Appearance of General Firearm Characteristics.⁴⁹

<u>Firearm feature</u>	<u>Nationality (or Manufacturing entity)</u>	<u>Date/Pattern of Introduction</u>
Reinforced ring-neck cock	East India Company	Windus 1813
	British Board of Ordnance	India Pattern 1809
	British Board of Ordnance	Sea Service Muskets 1718, 1738, 1756
'1742' trigger guard	British Board of Ordnance	Pattern 1742
Acorn finial trigger guard	East India Company	Lawrence (pinned) 1760-9
		Windus (screws/pin) 1771-1818
3 stepped 'India' buttplate	East India Company	Windus 1771-1818
	British Board of Ordnance	India Pattern 1795-1815
J shaped sideplate	East India Company	Windus 1771-1818
Ramrod pipe with fluted end	East India Company	Windus 1771
Pratt pipe	British Board of Ordnance	India Pattern? 1795
Long trumpet forepipe	British Board of Ordnance	Pattern 1756
Tailpipe (for steel ramrod)	British Board of Ordnance	Pattern 1748
Steel (or iron) ramrod	East India Company	1760
	British Board of Ordnance	Pattern 1748

Artifact 14930 is stamped with mark B 125 on the exterior surface of the tang (fig. 20g). The letter P, a proofing mark, is stamped on the interior of buttplate 14934.

Several artifacts are too fragmentary to identify according to a model or pattern. Though the firearm artifacts are incomplete, innovations and changes in manufacture and design indicate the emergence of certain characteristics. The following table (table 4) details the origin of specific features. One buttplate is of a type not readily identifiable. Artifact 14998 (fig. 22i) has a stepped tang that terminates in a ball. The shape of the tang bears some resemblance to those used on the Royal Foresters Light



Figure 25. British Barrel Fragment. a) Tailpipe from an Ordnance India Pattern musket (Collection of Bill Caruth, Dallas TX), b) Stock with tailpipe and ramrod, 14992-4. *Photography by A. Borgens.*

Infantry Dragoon carbine which began production in 1776.⁵⁰ The tang on this buttplate is crudely fashioned which may indicate that it is a locally produced copy of this design and not an Ordnance weapon.

Some barrel fragments could not be identified as a distinct Pattern because certain diagnostic features were not evident. Because there are no attributes that aid in a more specific identification, these barrels could be of the Short Land or India Pattern. Six barrel fragments are thus categorized as generally British in design. Two of these fragments contain the tailpipe (14992-4 is pictured in fig. 25b). The tailpipe on Long Land, Short Land, and India Pattern arms is the same design (fig. 25a). Another artifact is just the tip of the ramrod and two fragments are solely a barrel and wood stock piece with the impression of a now absent barrel.

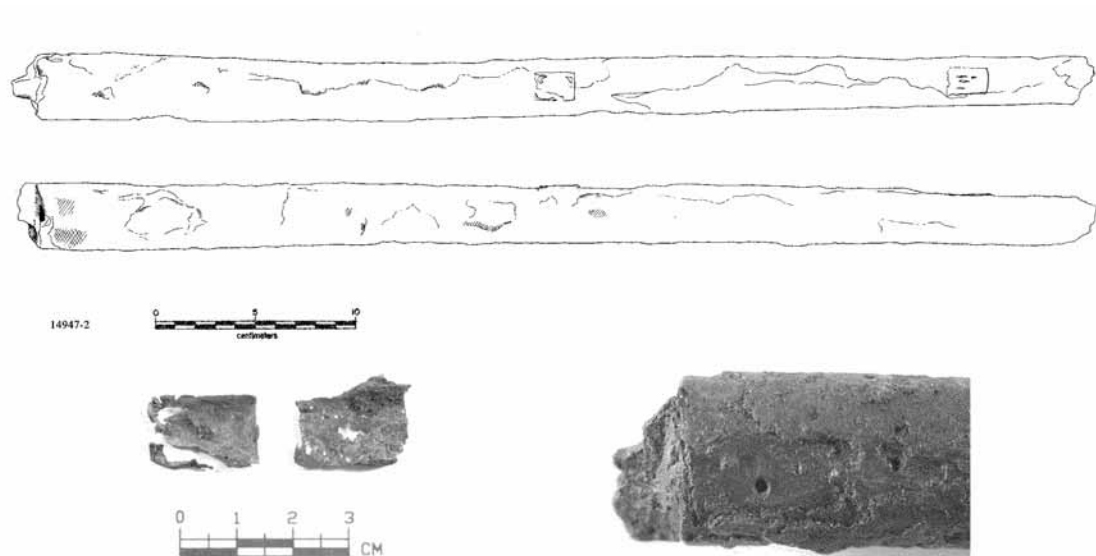


Figure 26. British Barrel. Artifact 14947-2 with detail of breech and touchhole and brazing pieces. *Photography and illustration by A. Borgens.*

A large barrel fragment is completely separated from its wood stock (fig. 26). The barrel fragment is 19 ¼ inches (49.00 centimeters) and includes part of the breech plug. The barrel is a smoothbore with ⅝ inch barrel flats that extend 3 ¼ inches (8.30 centimeters) from the breech. An indication that this musket is of British manufacture is the occurrence of two brazing pieces along the barrel. The copper brazing was used to affix the attachment lugs to the barrel.

British gun barrels manufactured in the 18th century were secured to the wood stock by round iron wire called “pinning wire”, “cross-pin” or pins.⁵¹ On the underside of the barrel were a series of iron studs, which were dovetailed and brazened to the barrel. Once the barrel was in the proper position in the stock, holes were drilled through the stock, passing through the pin loop. The pinning wire was inserted through the hole than cut and filed flush with the wood surface. Usually three of these

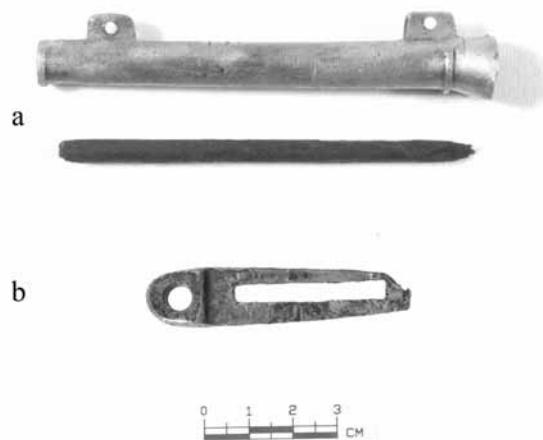


Figure 27. British Furniture. a) forepipe and b) trigger plate. *Photography by A. Borgens.*

attachment studs (lugs) occurred on each barrel.⁵² These brazing pieces have been found on several of the India Pattern and Short Land Pattern arms in the collection and measure approximately $\frac{3}{4}$ by $\frac{1}{2}$ inch (2.0 by 1.25 centimeters).

Two additional brass furniture items, a forepipe and a trigger plate (fig. 27), are unable to be ascribed to a particular pattern or model. The brass forepipe was fitted to both Short Land and India Pattern muskets. The exterior surface is marked between the attachment lugs with the Roman numeral IX (or XI if inverted). The trigger plate is of cast and filed brass. Its dimensions, $2\frac{3}{8}$ by $\frac{9}{16}$ inches (6.00 by 1.40 centimeters) suggest that it was fitted to a pistol.

SPANISH SMALL ARMS

Until the 18th century, arms manufactured in Spain were equipped with a miquelet lock (also called Spanish locks). Several locks on Spanish arms are specific to a given style or area. The first regulation military arm, produced in 1724, had the patilla lock.⁵³ The *a la moda lock* was manufactured in Madrid during most of the 18th century.⁵⁴ The *a la moda* lock was French in appearance but Spanish in its internal operation.⁵⁵ A second French lock, completely French in its appearance and internal mechanism, was produced to a limited extent on private arms.⁵⁶ This lock, the *a la francesa*, was adopted for military use under the reign of Carlos IV (1788 – 1808).⁵⁷

The Spanish musket with the French lock was a direct copy of the musket produced by France in 1756.⁵⁸ Unlike the *a la francesa* lock the lock on this musket had external Spanish characteristics. Two major lock features distinguish the Spanish firearm from the French model. The Spanish influenced French lock on the Model 1757 firearm was of the French type but with a Spanish cock and ring jaw-screw.⁵⁹

The fragility of the French lock eventually led to a reversion to the preceding miquelet lock.⁶⁰ The Model 1791 Spanish military firearm, the next standardized military musket type following the Model 1757,⁶¹ was manufactured with the miquelet lock that was typical of the early musket.

Two firearms have the ring jaw-screw and sideplate characteristic of the Spanish firearms with the French type lock; one fragment is of the barrel. In addition, two loose trigger guards also appear to Spanish, but it is difficult to make this association without the rest of the firearm.



Figure 28. Spanish Musket, Artifact 14947. *Photography by A. Borgens.*

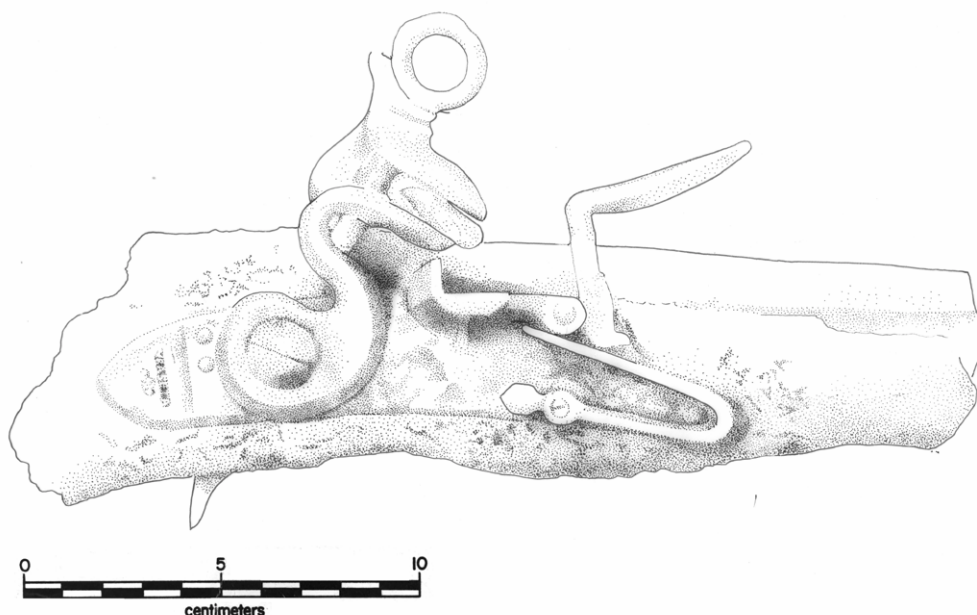


Figure 29. Model 1757 Spanish Musket. Artifact 14986. *Illustration by A. Borgens*

Three firearm fragments were recovered in the survey. Two fragments are of the lock; one fragment is of the barrel. Both lock fragments are of the Spanish 1757 model musket. The three musket fragments recovered in the survey are of the Model 1757 military musket. The Model 1757 was a smoothbore flintlock musket with a .60 caliber barrel. The overall length of the musket was 59 inches (150.00 centimeters) with a 43.7 inch (111.00 centimeters) barrel. The longarm weighed 4.14 grams.⁶²

The locks on artifacts 14947 (fig. 28) and 14986 (fig. 29) have French internal operating mechanisms. The exterior surface is French in appearance with the exception of the ring jaw screw and the steel. A series of parallel lines are inset in the steel surface as a method to create a better striking surface for the flint.

Lock 14986 is stamped with the maker's name, YBASETA, inset within a rectangular cartouche (fig. 30). Attempts to identify the maker have not been successful.



Figure 30. Detail of Spanish Maker's Mark. *Photography by A. Borgens.*

Neighboring this mark is a secondary image that is not discernible. Neither lock has any surviving marks in the interior surface. The body of the cock and lockplate are both flat with beveled edges. The cast brass sideplates on both weapons are also unmarked. The trigger plates were manufactured of iron.

The Spanish barrel fragment, artifact 14988-4, is 17 11/16 inches (44.90



Figure 31. Spanish Trigger Guards. a) 14913 and b) 14939. *Photography by A. Borgens*

centimeters) long and extends from the break just forward of the lockplate to just past the first barrel band. The barrel and stock are in poor condition. The barrel has an exterior diameter of approximately 1 1/8 inches (2.90 centimeters) at the barrel band. The barrel band is elliptical, with long and short axis dimensions of 1 11/16 inches (4.25 centimeters) and 1 3/8 inches (3.55 centimeters).

Trigger guards 14913 and 14939 (fig. 31) bear a strong resemblance to those used on Spanish military firearms. Judging from the images provided by Brinckerhoff and Chamberlain,⁶³ the trigger guard on Spanish military firearms remained generally unchanged for the fifty-year range represented by the three models. The three-tiered tang of the Spanish trigger guards terminates in a rounded 'nipple'. The outside edges are beveled.

MISCELLANEOUS ARMS

Four trigger guards can not be attributed to a specific firearm type. Two are broken, one is just of the rear finial tip, and the third is complete and belongs to a pistol. Trigger guard no. 14926 (fig. 32a) has a heavily eroded surface. The distinct edges of the trigger guard itself, as well as surface characteristics, are indiscernible. The artifact does bear some resemblance to India Company trigger guards featured on Coote and Windus Pattern arms. The condition of the artifact does not allow for conclusive

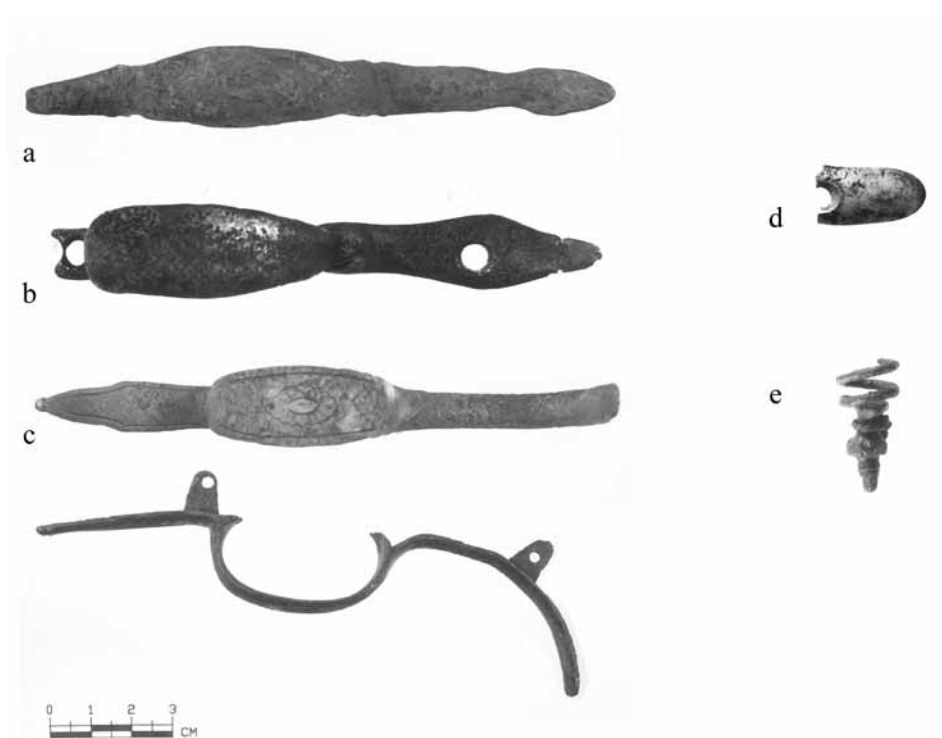


Figure 32. Miscellaneous Artifacts. a) 14926, b) 14941, c) 14942, d) 14995-5, e) 14984-3. *Photography by A. Borgens.*

identification. Another trigger guard (fig. 32b) appears to be French in design. The trigger guard is of cast brass. There are no marks to aid in its identification. The forward tang has an additional hole for its attachment to a firearm. This hole appears to have been created post manufacture and may have provided a method of attachment as the fore tang lug is broken. The finial tip, no. 14995-5 (fig. 32 d), is of cast and filed brass. It is similar to the rear tang finial tip on India Pattern weapons, though much shortened.

The pistol trigger guard, 14942 (fig. 32c) is complete and measures $5 \frac{5}{8}$ inches (14.40 centimeters) in length. The shape of the tang and sideplate are similar to those found on the East India Company Cavalry pistol (1808-1811), the Ordnance Light

Dragoon pistol, and on the Dublin Castle Light Dragoon pistol produced in the late 18th and early 19th century.⁶⁴ The bow of the trigger guard is etched with a decorative design. This design is also etched on the bow of the trigger guard to pistol, 14946.

A small iron ramrod worm (14984-3, fig.32e) was concreted to a sword blade fragment. It is the only artifact of this type recovered from the shipwreck. A small piece of thread was tied around the worm, presumably to tie it to the firearm.

CONCLUSION

Of the collective group of firearms, firearm furniture and bayonets (58 total), 9 artifacts' origins are unknown, 42 are British or of British design and five are Spanish. Twenty-nine of the British influenced firearm components appear to be of the East India Co. Windus Pattern, or the Ordnance copy of this weapon, the India Pattern. The India Pattern/Windus Pattern firearms would account for half of the collection of firearms recovered from the survey. This is significant, as these were the primary weapons used by the Mexican army during the Texas Revolution and the Mexican-American War. The Texas army used these weapons also, but to a lesser extent.

NOTES

¹ Bailey, *British Military Longarms*, 10. An illustrated overview of French Military arms is provided in Jean Boudriot, *Armes a feu Francaises Modeles Reglementaires, 1717-1836* (4 vols., Paris: Editions du Portail, 1997).

² A. D. Darling, *Red Coat and Brown Bess*, Historical Arms Series no. 12 (Ottawa, Canada: Museum Restoration Service, 1971), 15.

³ B. Barcelo Rubí, *El Armamento Portatil Español (1764-1939), una labor artilleria* (Madrid: Liberia Editorial San Martin, 1976), 160-161.

⁴ Ian Glendenning, *British Pistols and Guns, 1640-1840, 2nd ed.* (New York: Arco Publishing Company, 1967), 3.

⁵ Ibid.

⁶ Ibid.

⁷ Frederick Wilkinson, *British and American Flintlocks* (New York: Country Life Collectors' Guides, 1971), 58.

⁸ George Shumway, letter to author, March 9, 2004.

⁹ Mike Lea, conversation with author, March 7, 2004.

¹⁰ M. L. Brown, *Firearms in Colonial America: The Impact on History and Technology* (Washington D.C.: 1980) 236.

¹¹ T. M. Hamilton (ed.), *Indian Trade Guns* (Union City, Tenn.: Pioneer Press, 1982), 107.

¹² C. E. Hanson, Jr., "Ketland & Co., Second Chapter," *Museum of the Fur Trade Quarterly* 30, no. 4 (1994) 13.

¹³ Russell, *Guns in the Early Frontier*, 126.

¹⁴ Mike Lea and Peter Stein, conversations with author, March 7, 2004.

¹⁵ Darling, *Red Coat and Brown Bess*, 19.

¹⁶ Ibid., 21.

¹⁷ Ibid., 36, 21.

¹⁸ Ibid., 21.

¹⁹ Ibid., 37.

²⁰ Ibid.

²¹ Ibid., 39.

²² Bailey, *British Ordnance Small Arms*, 9

²³ Ibid., 57. A fourth type of Short Land Pattern was produced in the middle 1990s with the side plate featured on the later India pattern musket. Darling, *Red Coat and Brown Bess*, 40.

²⁴ Russell, *Guns on the Early Frontier*, 238.

²⁵ Ibid., 25.

²⁶ J. Mackey Hitsman, *The Incredible War of 1812: A Military History* (1965; reprint, Toronto: Robin Brass, 1999), 51.

- ²⁷ D. A. N. Lomax, *A History of the Services of the 41st (The Welch) Regiment, (Now 1st Battalion The Welch Regiment), from Its Formation, in 1719, to 1895* (Devonport, U.K.: Ye Caxton Press, 1899), 115.
- ²⁸ Ibid.
- ²⁹ Ibid., 116, 118, 121.
- ³⁰ Britain began purchasing large numbers of Windus arms from the East India Company in 1794. Production of the Short Land Pattern arm was discontinued in 1797. Darling, *Red Coat and Brown Bess*, 50.
- ³¹ Ibid., 40.
- ³² D. F. Harding, in his book *Small Arms of the East India Company*, has given this musket the pattern name 'Windus' after the Lieutenant Colonel Edward Windus. Windus was the first salaried inspector of small arms for the East India Company. Harding believes design changes instigated by Windus during his tenure as inspector resulted in the production of this musket. Harding, *Small Arms*, 2:55.
- ³³ Harding, *Small Arms*, 2:56.
- ³⁴ Ibid., 59.
- ³⁵ Ibid.
- ³⁶ Darling, *Red Coat and Brown Bess*, 52.
- ³⁷ Howard L. Blackmore, *British Military Firearms, 1650-1850* (revised, London: Greenhill Nooks, 1994), appendix D, appendix E.
- ³⁸ Blackmore, *British Military Firearms*, 124 and Harding, *Small Arms*, 2:58.
- ³⁹ Harding, *Small Arms*, 1:285.
- ⁴⁰ Darling, *Red Coat and Brown Bess*, 39.
- ⁴¹ Ivor N. Hume, *A Guide to the Artifacts of Colonel America* (New York: Knopf, 1970), 217.
- ⁴² Harding, *Small Arms*, 1:285.
- ⁴³ Harding, *Small Arms*, 2:141, 208, 214
- ⁴⁴ Gordon Weare, letter to author, Nov. 15, 2001.
- ⁴⁵ Martin Pegler, letter to author, 8 June 2001.
- ⁴⁶ Henry Newbolt, *The Story of the Oxfordshire and Buckinghamshire Light Infantry* (London: The Offices of "Country Life," 1915), 65.
- ⁴⁷ Ibid.
- ⁴⁸ Ibid., 95.
- ⁴⁹ British Board of Ordnance dates provided by D. W. Bailey, *British Ordnance Small Arms 1718 – 1783* (Gettysburg, Pa.: Thomas Publications, 1997), 17, 24, 25, 35, 71. East India Company dates provided by Harding, *Small Arms*, 1:190-192.
- ⁵⁰ Bailey, *British Ordnance Small Arms*, 40.
- ⁵¹ Baily, *Pattern Dates*, 4.
- ⁵² Ibid.
- ⁵³ Pérez, *La Historia*, 35.
- ⁵⁴ James D. Lavin, *A History of Spanish Firearms* (London: Arco, 1965), 182.
- ⁵⁵ Ibid.

⁵⁶ Ibid., 184.

⁵⁷ Ibid.

⁵⁸ Ibid.

⁵⁹ Brinckerhoff and Chamberlain, *Spanish Military Firearms*, 28.

⁶⁰ Ibid., 31.

⁶¹ Ibid., 28.

⁶² Rubí, *El Armamento Portatil Español*, 159.

⁶³ Brinckerhoff and Chamberlain, *Spanish Military Firearms*, Pls. 25, 20, and 31.

⁶⁴ Harding, *Small Arms*, 1:290 and R. E. Brooker, *British Military Pistols 1603-1888* (Dallas, Tex.: Taylor Publishing Company, 1978), fig. 35, p. 46, fig. 39, p. 50.

CHAPTER V

SMALL ARMS AND ARTILLERY SHOT

Indispensable to the musket-wielding soldier, was the associated firing round, the lead shot. These lead balls are the most common relics recovered from most 19th-century battlefields.¹

The first “hand held” longarms to fire lead balls were the *harquebuts*, which were developed in the 14th century.² These firearms were fired from supports and required two men to operate. In the following century the Spaniards developed a longer firearm that fired 2-ounce lead balls. This weapon, called the *mousquet*, was gradually made smaller and lighter and is the origin of the flint musket.³

Lead shot could be both factory-manufactured or cast in the field from lead stock, called pig lead. According to Deanes’ Manual, mid-18th century English lead shot was produced by pouring melted lead through strainers and letting it drop 150 feet into a tub of cold water.⁴ The motion of the melted lead through the air created the cylindrical shape. The lead was ladled from the cold water and placed into polishing machines.⁵

In the field, melted lead was poured into hand held molds that were hinged together. The molds produced superfluous lead attachments, called sprues, which were clipped off. Once the sprues were removed, the remaining burr could be polished off by rolling balls together in a rolling mill.⁶ These sprues are often evident on hand cast shot recovered from archaeological sites. Hand held casts produced marked seams and offset

lead shot if the hinged sides did not meet properly.⁷ Lead shot without seams are indicative of armory manufactured shot.⁸

The British Board of Ordnance standardized the English musket caliber as 11 bore, .75 or .76 inch, by the late 17th century. In 1752 it was reduced to 14 ½ bore, .68 inch.⁹ The East India Company, similarly, reduced their musket bore following the Ordnance change. The India Pattern musket (Windus Pattern), produced by the East India Company, was a .76 caliber longarm.¹⁰ The musket ball manufactured for these muskets was .68 inch (14 ½ per pound).¹¹ In 1838, the British Board of Ordnance found that their cast musket balls measured between .680 to .689 inch, and averaged .6835 inch.¹² Balls produced for carbines were .60 inch (20 per pound) and for the pistol, .51 inch (34 per pound).¹³

The regulation Spanish musket (miquelet/Spanish lock) was to have a 38 ½ inch (97.44 centimeter) barrels of .66 caliber.¹⁴ The pistol was to have a barrel not exceeding 10 inches (20.50 centimeters) in length, of .66 caliber.¹⁵ The 1757 model Spanish musket, used in regions of North America, was a .69 caliber weapon with an overall length of 59 ¼ inches.¹⁶

The Texas government, in 1839, established regulations governing the caliber sizes for their small arms, mainly U. S. produced weapons. In the regulations, these balls were specified by weight. The musket balls were to be 48 per pound (.45 caliber). The carbine, rifle, and pistol caliber were to be caliber 32 per pound (.52 caliber). Musket balls recovered from the site of Post West Bernard were .69 caliber (13 in number), .75 caliber (3 in number), and between .52 and .54 caliber (6 in number).¹⁷

Post West Bernard was active as an arsenal stores from 1837 to the spring of 1839.¹⁸

Weapons stored at the arsenal were left over from the Texas Revolution and predated the arms stipulated in the regulations.

At Villita, the location of the Mexican military embankment at the battle of the Alamo, 34 musket balls of .69 caliber (sizes ranging from 1.65-1.80 centimeters) were recovered. The .69 caliber balls were intended for use in India pattern muskets.¹⁹ Three shot were intended for a rifle or pistol; .49 caliber (1.30 centimeters), .48 caliber (1.25 centimeters) and .44 caliber (1.15 centimeters).²⁰

Eighty-seven lead balls were recovered from the wreck site at Pass Cavallo (fig. 33, table 5). Sixty-six lead shot correspond to the .69 caliber (1.65-1.80 centimeters) shot fired from English muskets. Four shot are of .60 carbine caliber (1.50-1.55 centimeters) and four are for .51 pistol or rifle caliber (1.30-1.35 centimeters). Seven lead shot are of .63 caliber which may correspond to that of the 1757 Model Spanish military musket which had a bore of .69 inch. Five small shot (bird shot) measure .40

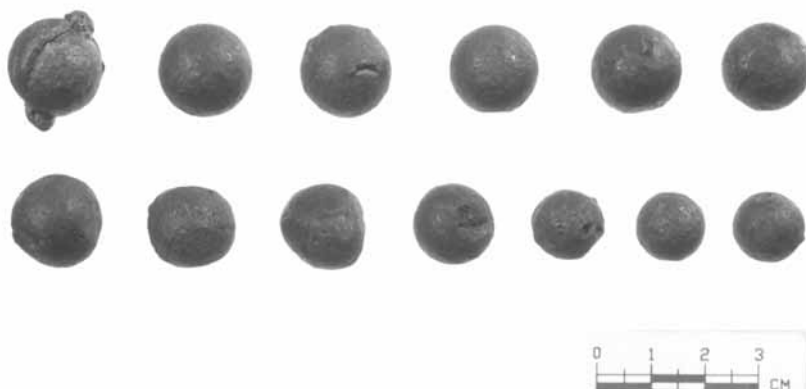


Figure 33. Musket Balls. Artifact 14924. All lead shot types are represented.
Photography by A. Borgens

Table 5. Lead Artillery Dimensions.

Art. No.	Diam.(cm)	caliber (in)	weight (g)	seams
14993-5	0.41	NA	0.42	no visible
	0.4	NA	0.38	no visible
	0.39	NA	0.36	no visible
14904-2	1.74	0.685	30.21	no visible
	1.72	0.677	30.29	no visible
	1.74	0.685	31.03	no visible
	1.73	0.681	31.33	no visible
	NA		31.5	no visible
	1.74	0.685	31.17	possibly
	1.73	0.681	30.6	no visible
14908	1.71	0.673	31.01	no visible
	1.75	0.689	30.75	no visible
	1.65	0.649	26.3	no visible
	1.65	0.649	25.86	no visible
	1.65	0.649	27.13	no visible
	1.76	0.693	31.7	no visible
	1.72	0.677	32.53	no visible
	1.64	0.645	26.37	no visible
14924-2	1.34	0.527	14.1	spall
	1.34/1.36	.527-.535	13.8	yes
	1.32	0.519	14.21	possibly
	1.54	0.606	21.47	yes-spall
	1.61	0.634	25.44	possibly
	1.65	0.649	27.86	no
	1.66	0.653	27.72	yes
	1.69	0.665	30.57	no
	1.76/1.69	.693-.665	30.79	no
	~1.70	0.669	30.85	yes, off-set
	~1.70	0.669	26.79	yes, slight
	1.65	0.649	27.96	slight
	1.62	0.634	25.8	circumference
14927-3	1.74	0.685	29.95	no
NP/AR-2	1.76	0.693	30.87	no
	1.76	0.693	31.52	no
	1.79	0.704	32.38	possible
	1.73	0.681	30.7	no
	1.74	0.704	31.36	no
	1.77	0.7	30.95	no
	1.72-1.79	.677-.704	31.44	no
NP/AR-1	4.01	1.58 (1 1/2 LB)		yes
	3.99	1.57 (1 1/2 LB)		yes

Table 5. continued.

Art. No.	Diam.(cm)	caliber (in)	weight (g)	seams
14933	11.54	4.541 (~12 LB)		yes
14932	9.06	3.566 (~6 LB)		yes
14924	9.04	3.558 (~6 LB)		not visible
14940	1.75	0.689	30.74	circum., flat spot
	1.73	0.681	30.89	yes, circumference
	1.69	0.665	29.63	not visible
	1.65	0.649	30.17	not visible
	1.72	0.677	30.76	not visible
	1.73	0.681	30.36	not visible
	1.72	0.677	30.8	not visible
	1.71	0.673	30.76	seam ridge
	1.72	0.677	30.59	not visible
	1.73	0.681	30.59	not visible
	1.74	0.685	30.97	not visible
	1.75	0.689	30.97	not visible
	1.75	0.689	31.02	yes
	~1.75	0.689	27.37	off-set 2 spalls
	~1.75	0.689	31.47	offset, 3 spalls
	1.74	0.685	31.98	not visible
	1.74	0.685	31.13	not visible
	~1.75	0.689	29.14	3 spall, off-set
	~1.75	0.689	27.7	2 spall offset
	~1.70	0.669	27.19	not visible
	1.72	0.677	31.54	not visible
	1.71	0.673	31.35	not visible
	1.68	0.661	28.58	not visible
	1.74	0.685	31.01	not visible
	~1.75	0.689	30.81	3 spall, off-set
	~1.75	0.689	32.7	3 spall, off-set
	1.49	0.586	19.45	seam ridge
	~1.75	0.689	30.17	not visible
	~1.75	0.689	31.93	not visible
	1.35	0.531	14.35	circumfer, flat spot
	2.63	1.03	105.08	not visible
	2.62	1.04	106.45	yes, spall
	1.61	0.634	24.47	not visible
	1.65	0.649	26.45	not visible, flat spot
	1.67	0.657	27.8	not visible, flat spot
	1.66	0.653	27.79	ridge, flat spot
	1.62	0.645	27.49	not visible
	1.62	0.634	25.69	not visible, flat spot

Table 5. continued.

Art. No.	Diam.(cm)	caliber (in)	weight (g)	seams
14940	~1.60	0.63	22.29	not visible
	~1.62	0.634	24.06	not visible
	1.68	0.661	27.1	not visible
	~1.70	0.669	27.06	ridge, off-set
	1.69	0.665	27.87	not visible
	1.74	0.685	31.45	not visible
	1.72	0.677	27.38	not visible
	~1.70	0.669	27.56	not visible
	1.55	0.61	22.65	ridge
	~1.55	0.61	20.98	asymmetrical
	~1.53	0.602	21.02	ridge, flat spot
14988-6	1.79	.704	31.51	none
14989-5	0.42	0.165	0.49	circumference
	0.41	0.161	0.41	ridge, semi-flat side

centimeters. Sixteen of the musket balls had visible seams indicating that they were hand cast.

Eight of these were offset cast, six of which had two to three intact sprues. All the carbine and pistol/rifle had visible seams indicating they were hand cast. Two of the possible Spanish musket shot have seams. All other shot are seamless indicating possible armory manufacture.

FIELD ARTILLERY MUNITIONS

Ease of mobility was a factor in the size of cannon used for field artillery.

Permanent Mexican military fortifications, during the early Republic Period, were outfitted with brass and iron cannon ranging from 16-pounders to 24-pounders.²¹ In its campaigns against the Texas colonists, the Mexican army used smaller bore, and thus more lightweight, cannons. The 1st Infantry Brigade was equipped with two 12-pounders, two 6-pounders, and two 4-pounders.²² The Vanguard Brigade was equipped with two 8-pounders, two 6-pounders, two 4-pounders, and a 7-inch howitzer.²³

Many varieties in size and make of shot were recovered from Mexican military sites in Texas. Among the artillery recovered from the Mexican embankment at the Alamo were a 10.90 centimeter “9-pounder” (5.00 kilogram) and 10.4 centimeter, possibly “6-pounder” (1.2 kilogram).²⁴ Over 200 brass light canister shot (2.10 to 2.80 centimeters diameter), over 30 heavy brass canister shot (3.1-3.70 centimeters diameter), 2 iron canister shot (4.70 and 4.80 centimeters diameter), and over 150 lead canister shot (2.17 – 2.64 centimeters diameter) were recovered from archaeological sites associated with the path and campsite of the defeated Mexican army.²⁵ Two 6-pound iron cannon balls, a solid 6-pound brass cannon ball, and six hollow brass howitzer shells were also abandoned along the route as the Mexican army retreated to the Atacosita Crossing on the Colorado River.²⁶ The use of cuprous shot instead of iron shot was not uncommon at this time, and was dependant on the availability of iron. In the later Mexican-American War of 1845-1846, brass shot was the principal form of Mexican ammunition, however, Depalo describes the brass shot as being so slow in its trajectory that U. S. soldiers were easily able to avoid the projectiles.²⁷

The Government of the Republic of Texas, in 1839, set artillery requirements for

the Texas army. The Texas army was to use 6, 9, and 12-pounder cannon as well as 12 and 24-pounder howitzers as their field artillery.²⁸ Siege and Garrison troops were to use 12, 18, and 24-pounder cannon, in addition to light howitzers and light mortars.²⁹ Coastal fortifications were to be equipped with 24, 32, and 42-pounder cannon, 10 inch mortars, 18, 24, 32, and 42-pounder carronades.³⁰

SHIPBOARD ARTILLERY MUNITIONS

Shipboard mounted cannon could range in size from 9-pounders to 68-pounders. The 130-ton Mexican naval schooner, *Aquila*, mounted a 32-pounder, in addition to six 18-pounder carronades.³¹ The *Guadalupe*, an iron hulled steamer of the Mexican Navy, had two 68-pounders and four 12-pounders.³² Many of the smaller Mexican naval schooners were armed with 24-pounders or 12-pounders. A United States schooner-of-war operating in the Gulf of Mexico, *Flirt*, was armed with two 18-pounders.³³ A 250-ton U.S. Naval Brig, *Somers*, which capsized near Veracruz in 1846, mounted ten 32-pounders.³⁴

The vessels purchased by the Texas government in 1839 were to each mount a compliment of artillery. The ship was to carry 18 24-pounders, the brigs were to have 12 18-pounders, and the schooners were to be armed with 4 12-pounders and a long 12-pounder mounted on a pivot.³⁵ Each gun, upon completion, was to be equipped with 25 round shot, 13 canister shot, and grape shot for 12 stands.³⁶ None of the vessels carried

the armament stipulated in the Dawson's contract.

The ship *Austin* has been described as having mounted a variety of artillery types, including twenty 20-pounders, eighteen medium 24-pounders, and eighteen 18-pounders.³⁷ The brigs *Wharton* and *Archer* had sixteen medium 18-pounders.³⁸ The schooners *San Bernard*, *San Jacinto*, and *San Antonio* had seven 12-pounders and one long 18-pounder.³⁹

Merchant vessels, due to the intrinsic risks involved in maritime trade, were often armed. The *Hannah Elizabeth*, a New Orleans merchant vessel, was equipped with two 6-pounders and one 4-pounder.⁴⁰ The Texas schooner, *Liberty*, captured a merchant schooner in the port of Sisal in 1836.⁴¹ This vessel, the *Pelicano Campeache*, mounted three large brass guns.⁴²

Seafaring vessels also carried shot specifically employed to injure the rigging of an adversary. Anti-rigging shot was made in a variety of differing forms, yet all had the same function. Often this shot was larger in mass, or expanding, in order to destroy another vessel's sails and rigging. One of the most common forms of anti-rigging shot was composed of two halves of a cannon ball, joined by a bar. This form of bar shot was a standard feature of maritime artillery.⁴³

The British Royal navy had many varieties of bar shot. Double-headed bar shot were either two cannon balls or two half balls joined by a single bar.⁴⁴ Another form was composed of sliding bars that extended in flight.⁴⁵ Knife-blade shot had four folding blades that also extended in flight.⁴⁶ Another form of anti-rigging shot had a grappling hook attached. All these types of shot were manufactured of cast iron and

were found to be too weak. After 1782, anti-rigging shot was two solid half balls connected by a bar made of wrought iron.⁴⁷ French bar-shot of the 19th century had a faceted bar and contoured ends.⁴⁸ The length of the shot was twice the diameter of the end.

Eight examples of large artillery shot were located around the Pass Cavallo wreck site (fig. 34, table 5). The artillery shot from the wreck site is composed of one 12-pounder (11.50 centimeters diameter), two 6-pounders (9.20 – 9.30 centimeters diameter), two heavy iron canister shot (3.99-4.01 centimeter diameter), and two light lead canister shot (2.65 centimeters diameter). The singular example of anti-rigging shot, cast with a faceted bar, weighs 18 pounds and is 22 ½ inches (57 centimeters). The round shot exemplify those found on Mexican and Texan terrestrial sites and is like those of shipboard use.

The 6-pound and 12-pound cannonballs, as well as the canister shot, exemplify artillery used on small vessels or as field artillery. The cannon that fired these rounds were lighter and afforded a greater ease of mobility. As demonstrated, small cannon balls and cannister shot were ubiquitous on the battlefields and presidios of Texas, as well as on merchant and naval craft throughout the Texas Gulf. Mexican and Texas troops alike employed mobile smaller bore artillery. The indistinct nature of these artifacts does not invite speculation as to the national affiliation of such items, especially in the absence of identifying marks. Terrestrial archaeology and historical research has demonstrated that the Mexican military became more dependant on cuprous shot during the Texas Revolution and especially during the following Mexican American War.

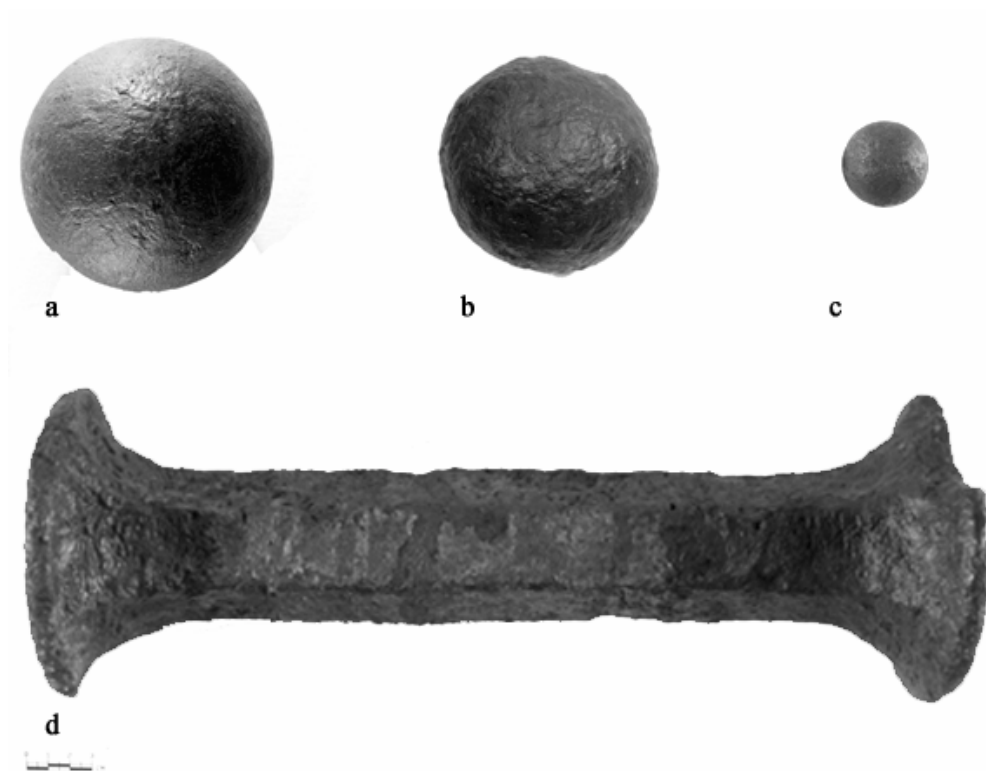


Figure 34. Large Artillery Artifacts from the Pass Cavallo Wreck. a) 14933, b) 14924, c) NP/AR-1, d) 14901. *Photography by A. Borgens.*

There is not, however, enough evidence to indicate the origin or ownership of the artillery and small arms shot. Likewise, it is indeterminable as to whether these items were shipboard cargo, of ship stores, or were rounds fired into the vessel.

NOTES

¹ Brown, *La Villita Earthworks*, 64.

² *Deanes' Manual of the History and Science of Fire-arms* (London: Longman, Brown, Green, Longmans, and Roberts, 1858), 32-33.

³ Ibid.

⁴ Ibid., 35.

⁵ Ibid.

⁶ Harding, *Small Arms*, vol. 3, 7.

⁷ Brown, *La Villita Earthworks*, 77.

⁸ Ibid.

⁹ Public Records Office: WO47/39, 30 June 1752 in Harding, *Small Arms*, 3:2.

¹⁰ John Müller, *A Treatise of Artillery*, 3rd ed. (Ontario, Canada: Museum Restoration Services, 1977) 14, 178 and *Artillery tables.-Siege and Field for Service and Practice &c; with Laboratory Course of Instructions etc., Office of the Permanent Select Committee of Artillery Officers, Dum Dum* (Calcutta 1853) (lab course 9) in Harding, *Small Arms*, 3:2.

¹¹ Ibid.

¹² Public Records Office: WO44/677, p 549, Itr from Lt-Col W. B. Dundas dated 27 Apr 1838. In Harding, *Small Arms*, vol. 3, 4-5.

¹³ Muller, *A Treatise of Artillery*, 14, 178 and Harding, *Small Arms*, 3:2.

¹⁴ *Reglamento e instruccion para los presidios que se han de formar en la linea de Frontera de la Nueva España* (Mexico: Oficina de la Aguila, 1834) in Brinckerhoff and Faulk, *Lancers for the King*, (11-67) 21.

¹⁵ Ibid.

¹⁶ Brinckerhoff and Faulk, *Spanish Military Arms*, 28-30.

¹⁷ Hudgins, "Post West Bernard," 156.

¹⁸ Ibid., 143.

¹⁹ Labadie, *La Villita Earthworks*, 77.

²⁰ Ibid., 78.

²¹ Depalo, *The Mexican National Army*, 55.

²² Richard G. Santos, *Santa Anna's Campaign Against Texas, 1836-1836: Featuring the Field Commands Issued to Major Vicente Filisola*, 2nd ed. (revised, n.p., Texian, 1968), 15.

²³ Ibid., 16.

²⁴ Brown, *La Villita Earthworks*, 75.

²⁵ Hudgins, "Tracking the Mexican Army," 13-30 and Hudgins and Dimmick, "A Campsite of the Retreating Mexican Army," 8-9.

²⁶ Ibid., 1, 13-30.

²⁷ Depalo, *The Mexican National Army*, 101.

²⁸ War Department, *General Regulations for the Government of the Army of the Republic of Texas*, (Evans Library, Texas A&M University, College Station, Tex.; Houston, Tex.: Intelligencer Officer, S. Whiting, 1839), microfilm, 148.

²⁹ Ibid.

³⁰ Ibid.

³¹ Ministerio de Guerra y Marina, *Memoria del Secretario de Estado y del despacho de Guerra y marina*. (Evans Library, Texas A&M University, College Station, Tex.; Mexico: Imprente de Vicente G. Torres, 1846), microfilm, table number 13.

³² Ibid.

³³ Karl J. Bauer, *Surfboats and Horse Marines: U.S. Naval Operations in the Mexican War, 1846-1848* (Annapolis, Md.: United States Naval Institute, 1969), 255.

³⁴ Ibid., 258.

³⁵ Navy Department, *Annual Report of the Secretary of the Navy, November 1839* (Austin, Tex.: Whiting's Press, 1839), 18-19.

³⁶ Ibid.

³⁷ Hill, Dan, *The Texas Navy: In Forgotten Battles and Shirtsleeve Diplomacy* (circa 1937; reprint, Austin, Tex.: State House Press, 1987), 184. James M. Daniel, *The Ships of the Texas Navy: A List Compiled by James M. Daniel* (San Jacinto, Tex.: San Jacinto Museum of History Association, 1948).

³⁸ Daniel, *The Ships of the Texas Navy*.

³⁹ Ibid.

⁴⁰ Gulick Jr., *Papers*, 1:275

⁴¹ Cushing, *Adventures in the Texas Navy*, 17-20.

⁴² Judiciary Committee, "Report of the Judiciary Committee on the Petition of the Captors of the Schooner 3 Pelicano" House Journals of the 3rd Congress, the Republic of Texas (18?), 114. Copy in Dienst Papers, Barker Collection, Center for American History, Austin Tex.

⁴³ Robert Wilkinson-Latham, *British Artillery on Land and Sea 1790-1820* (Bristol: David & Charles 1973), 27.

⁴⁴ Wilkinson-Latham, *British Artillery on Land and Sea*, 27. Double-headed shot is also called angel shot.

⁴⁵ Ibid.

⁴⁶ Ibid.

⁴⁷ Ibid.

⁴⁸ Jean Boudriout, *The Seventy-Four Gun Ship; A Practical Treatise on the Art of Naval Architecture.*, vol. 2, *Fitting Out the Hull*, David H. Roberts (trans.), (Paris: Naval Institute Press, 1986), plate XL, no. 18.

CHAPTER VI

EDGED WEAPONS

Edged weapons represent the smallest (in quantity) category of the munitions recovered from the shipwreck. Four sword fragments and three bayonet fragments were recovered during the survey.

BAYONETS

One of the most undeniable advantages to the use of the musket was the optional attachment of the bayonet. It was this feature which enabled the weapon to be the preferred arm of the Republic of Texas army.¹ Often muskets could be purchased as ‘stands’. A ‘stand’ of muskets referred to the musket and its accompanying bayonet.

The bayonet used on British arms at this time, the socket bayonet, is easily distinguishable due to its unusually long 4-inch socket and its triangular cross-section blade. These British Long Land and Short Land Pattern muskets were standard arms in North America during the French Wars and the American Revolution. The later India Pattern was used in North America during the war of 1812 and the Mexican-American War.² Bayonets manufactured for the Long Land, Short Land, and East India Pattern arms remained greatly unchanged between 1760 and 1815. The ‘Brown Bess’ bayonet

was used on all three British patterns. The general dimensions for the socket bayonet are a 16 $\frac{3}{4}$ inch blade, a $\frac{7}{8}$ inch to 1 inch shank and a 4 inch socket.³

In the middle 18th century, the original design of the bayonet was reinforced through thickening the shank. The guard for the blade became triangular in shape and the blade curved upwards, away from the barrel.⁴ The shank retained a slightly flattened face. The bayonets produced between 1760-1780 had a slightly longer blade, of 17 inches, and a 4-inch socket.⁵ The bayonets produced for the Short Land Pattern at the end of the 18th century (1780-1800) are almost indistinguishable from those produced for the India Pattern muskets.⁶ With the India Pattern bayonets, the blade was thickened near the point and the guard was reduced to a slight triangular lip. The curvature of the shank was almost identical to the preceding model, though the shank lost its flattened face altogether.⁷ The India Pattern bayonets had a 16-inch blade and a 3.9-inch socket.⁸

The East India Company bayonets produced for the Windus Pattern musket were unlike those used on the Board of Ordnance, India Pattern copy. The East India Company bayonet had a 16 inch blade and a socket with a two-motion, L-shaped, slot and straight spring.⁹ This design was superior to that of the Ordnance bayonet, in that it did not slip back and forth or laterally.¹⁰

American muskets were fitted with bayonets copied from British and French patterns. During the Revolutionary War period, local gunsmiths produced bayonets modeled after those produced for the British 'Brown Bess' muskets.¹¹ Towards the end of the Revolutionary War, the bayonets would be modeled after those used on French weapons.

Bayonets produced by American armories at the end of the 18th century were patterned directly after the 1763 French bayonet, though with the locking clasp ring.¹² The French bayonet had a 2 ³/₄ inch socket with a reinforcing ring clasp. The blade measured 14 ³/₁₆ inches in length.¹³ The 1795 Model American musket, and all those produced until 1840, had double and parallel locking slots, without the clasp.¹⁴

Bayonets manufactured by The Virginia Manufactory of Arms muskets conformed to that of the Charleville weapons. The bayonets produced by the Virginia Manufactory of Arms, in conjunction with the muskets made between 1802 and 1809, were 28 ¹/₂ inches overall with a 3 ¹/₂ inch socket with a reinforcing collar.¹⁵ Approximately 14,100 were delivered to the state of Virginia.¹⁶ In 1840, the bayonet was manufactured with the ring clasp, a feature it had abandoned from its French predecessor. The Model 1840 musket was the last of the U. S. military flintlocks.¹⁷ The Model 1757 Spanish military muskets were used largely by Spanish expedition troops in North America. This musket was produced until it was replaced by the next major pattern manufactured in 1815. During this time three other major arms patterns were manufactured for the Spanish military: the Model 1785 carbine, the Model 1790 Light Infantry musket, and the Model 1792 musket.¹⁸ The bayonet for the Model 1757 musket was 19 ¹/₃ inches long with a triangular blade and slotted socket. The maximum length and width of the blade was 15 inches and 1 ¹/₃ inches. The socket was 3 ¹/₂ inches long.¹⁹ The three movement slot was much like that of the 'Brown Bess' Bayonet. The placement of the shoulders to the blade was not perpendicular to the neck, but curved forward and outward into the blade.²⁰

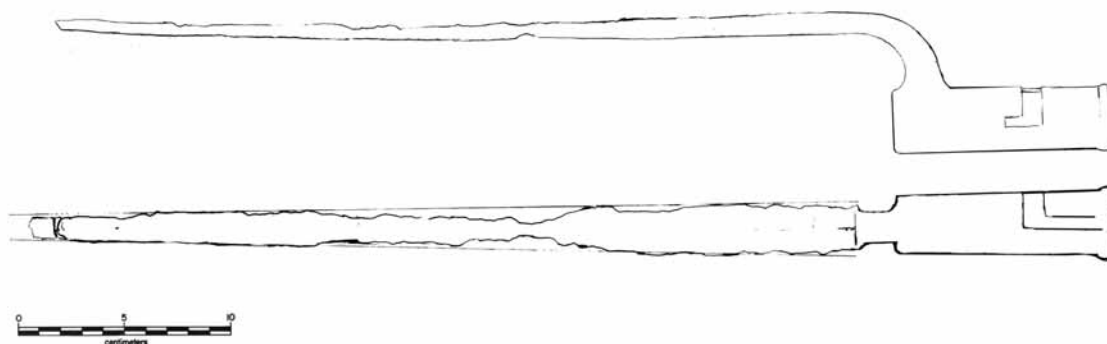


Figure 35. Bayonet. Artifact 14992-2. *Illustrations by A. Borgens.*

All of the bayonets that were recovered in the survey are incomplete. The bayonets have the same general characteristics; all are socket bayonets, with triangular blades. Artifact 14992-2 has a complete socket of 4 1/6 inches, though the blade is missing the tip (fig. 35, table 6). This is the most intact bayonet. Bayonet 14910

Table 6. Bayonet Dimensions (in).

	14992	14910	14911
muzzle length	2 1/8	NA	NA
socket length	4 1/16	3*	NA
socket front outer diameter	1 1/16	1 1/16	NA
socket front inner diameter (bore)	15/16	15/16	NA
shank	1	1 3/16	NA
blade length	15 3/4*	17 1/2	11 3/4 *
blade width	1	1	1 1/16
length from fuller to shoulder	4	2 7/8	2 1/4

* incomplete

has an incomplete socket and the locking mechanism is not present. This artifact has a complete blade length of 17 1/2 in (44.70 cm). The remaining bayonet, 14911 neither has a complete socket or blade. The long length of the socket on bayonet 14992-2 suggests

this bayonet was fitted to late 18th-century British pattern muskets. This bayonet has a stamped mark on the blade surface, near the shank (fig. 36). The incomplete nature of the artifacts 14910 and 14911, and the absence of identifying marks, do not allow attribution to a musket pattern.



Figure 36. Bayonet Mark. Detail of crossed mark on blade surface neighboring the shoulder.
Photography by A. Borgens.

SABERS

Prior to radiographic analysis the sword blade concretions were perceived to be box straps. The surfaces of the sword blades range in preservation quality from fair to poor. All four sword blades are triple-fullered.

The fragmentary condition of the sword blades, at this point, only allows for speculation as to origin. The closest parallels are American Horseman sabers produced

during the last quarter of the 18th century. Sword blades 14980 and 14995-4 are approximately $1 \frac{3}{8}$ inches in width, which is a common measurement for the blades used in the American Horseman sabers.²¹ The triple-fullered Horseman's saber pattern was a popular pattern sometimes accommodated to other sword types.²² During the American Revolution the sword was the primary weapon of the mounted soldier.²³

Swords manufactured in the 18th century were often the combination of a locally produced sword hilt with an imported sword blade.²⁴ Large manufacturing centers in Soligen, Munich, and Passau (Germany), Toledo (Spain) and Milan (Italy)



Figure 37. Blade Fragments. a) 14980 b) 14984-2 c) 14995-4. *Photography by A. Borgens.*

shipped hundreds of thousands of blades worldwide.²⁵ The imported European triple-fullered blade is common to American sabers of the late 18th century.²⁶

The Pass Cavallo saber fragments (fig. 37) measure between $5 \frac{11}{16}$ inches and

14 ½ inches. The widths of the blades vary from 1 ¼ inches to 1 7/16 inches. Artifact blade 14995-4 has the greatest degree of tapering, from 1 ¾ inches to 1 ¼ inches. The fullers measured approximately ⅛ inches each. The thickness of the blades at the spine ranged from ⅛ to ¼ inches. Based on the blades general features the fragments are tentatively identified as European saber blades produced for importation around the turn of the 18th and 19th centuries.²⁷

NOTES

- ¹ Stuart Perry to D. G. Burnet, April 16, 1836, Adams, *British Diplomatic Correspondence*, 638-639.
- ² Donald B. Webster, *American Socket Bayonets, 1717-1783*, Historical Arms Series no. 3, (New York: Museum Restoration service, 1986), 14. James T. Deshields, *Tall Men with Long Rifles*, 2nd ed. (San Antonio, Tex.: Naylor Co, 1971), 246.
- ³ Ibid.
- ⁴ Graham Priest, *The Brown Bess Bayonet 1720-1860* (Norwich, U.K.: Tharston Press, 1986) 18
- ⁵ Ibid., 19.
- ⁶ Ibid., 28
- ⁷ Ibid., 18.
- ⁸ Ibid., 19.
- ⁹ Harding, *Small Arms*, 1:193.
- ¹⁰ Ibid.
- ¹¹ R. M. Reilly, *American Socket Bayonets and Scabbards: A Comprehensive Illustrated History of Socket Bayonets, Scabbards, and Frogs in America, from the Colonial through to the Post-Civil War Period* (Lincoln, R. I.: A. Mowbray, 1990), xiii.
- ¹² Webster, *American Socket Bayonets*, 16. According to Reilly, bayonets produced in American armories were modeled after the 1746 French bayonet. Reilly, *American Socket Bayonets and Scabbard*, xiii.
- ¹³ Webster, *American Socket Bayonets*, 16.
- ¹⁴ Ibid., 21.
- ¹⁵ Reilly, *American Socket Bayonets and Scabbards*, 25-26.
- ¹⁶ Ibid., 26.
- ¹⁷ Ibid., 32.
- ¹⁸ Rubi, *El Armamento Portatil Español*, 159-161.
- ¹⁹ Ibid., 159.
- ²⁰ Ibid., 249.
- ²¹ George Neumann, *Swords and Blades of the American Revolution* (Texarkana, Tex.: Rebel Publishing Co., Inc, 3rd edition, 1991) 166, 163, 169-5, 177, 180.
- ²² Ibid., 103. American hunting sword circa 1780-1785
- ²³ Ibid., 56.
- ²⁴ Ibid., 51.
- ²⁵ Ibid.
- ²⁶ Ibid., 175.
- ²⁷ Jim McDougal, letter to author, Nov. 21, 2000.

CHAPTER VII

SHIPBOARD ARTIFACTS

Artifacts collected in the survey indicate the presence of a ship, although a cursory examination of the site did not expose any evidence of a complete or semi-complete ship's hull. Examples of hull sheathing, ship's fasteners, rigging implements and ballast were recovered from several locations around the artifact debris field. The ship's fasteners and hull sheathing, due to manufacturing technologies, provide some indication of the ship's date.

COPPER SHEATHING

The survey recovered several fragments of copper sheathing, one of which was still attached to a piece of planking. In addition, many of the copper sheathing fragments still retained the cupreous nails that were needed to affix the sheathing to the hull. The late 18th-century introduction of cupreous sheathing, to reduce or eliminate toredos attack on the exposed, below waterline wood, helped postulate a later date for the age of the ship than that which was originally theorized.¹

Experiments in copper sheathing began in 1761 with the 32-gun British frigate, H.M.S. *Alarm*.² The schooner *La Gorée*, in 1767, was the first French vessel to be

coppered. The *La Gorée* was stationed in the colonies.³ The first American ship to use copper sheathing was the frigate *Alliance* in 1781.⁴

Britain was the leader in developing the technology to produce suitable methods for coppering vessels. A total of eight of the 5th and 6th rate ships were coppered by 1770.⁵ By 1777, at least 14 more vessels were to have also been sheathed. The degradation of the iron fasteners, due to galvanic responses to the copper, reduced interest in the use of copper sheathing for the British fleet.

James Keir and Matthew Bolton developed fasteners using a combination of copper, zinc, and iron in the late 1770s.⁶ By 1781 it was concluded that the “Keir’s metal” bolts were not adequate and other copper alloy fasteners would have to be developed.⁷ New fasteners of a mixed copper and zinc alloy were strengthened by drawing the metal through grooved rollers.⁸ Following the introduction of these new mixed metal copper fastenings all British naval vessels were changed over to the new alloy bolts after 1786.⁹ By 1812, the use of copper bolts as ship’s fasteners was considered a common practice in the construction of British vessels.¹⁰

The use of copper sheathing on American naval vessels occurred considerably later, as the United States had to import both the technology and initially the copper sheathing. Britain manufactured and exported copper sheathing and fasteners to European naval powers and United States towards the end of the 18th century.¹¹ Britain’s importance as a supplier of copper sheathing declined as countries discovered independent sources of copper and developed the technology to manufacture these products.¹² The United States, though able to produce its own sheathing since 1815, was

importing enough copper sheathing from Britain in 1850 to plate 600 vessels.¹³ Copper sheathing was routinely used to sheath ships of the early U.S. navy in the beginning of the 19th century.¹⁴

Due to the expense of this technology, merchant ships were slower to combine the use of copper sheathing with copper fasteners. In the British merchant fleet, the coppering of vessels started to become more common after 1786.¹⁵ The number of vessels to use copper sheathing gradually increased so that by the end of the Napoleonic Wars one in six British overseas merchant vessels was coppered.¹⁶ A majority of British merchant vessels still continued to use wooden sheathing.¹⁷ Over 80 percent of the registered merchant vessels to use copper sheathing conducted trade in Africa, Americas, and the East and West Indies.¹⁸

As copper sheathing technology was expensive, not all ships were thus sheathed. The use of this technology and its application to coastal merchant ships is not terribly well documented. Only four of the non-military, Gulf Coast vessels researched during this study were described as being copper sheathed.¹⁹ Other less expensive methods of hull protection may have been employed for this class of sailing vessel. A Maine coastal vessel, for example, made in 1834, was not copper sheathed. Instead a thick layer of pitch was applied to the hull.²⁰

A superior quality copper alloy sheathing and fastener was patented by G. F. Muntz in 1832.²¹ The new alloy was ideal for use in the production of copper sheathing, as it was lighter and stronger than copper and was cheaper to produce.²² The content of Muntz sheathing was composed of a ratio of 60 percent / 40 percent, copper to zinc,

respectively.²³ The introduction of this new metal into the strong copper market was slow, by 1840 only 200 vessels in London used Muntz metal sheathing.²⁴ By the middle of the 19th century, the use of Muntz metal began to supercede the use of copper, expanding to foreign and American markets at this time.²⁵

The sheathing, along the waterline and bow, on early 19th-century English vessels measured 14 inches (0.356 meter) by 4 feet (1.219 meters), and weighed 32 ounces (.907 kilogram) per square foot (.093 square meter). In other areas of the hull, sheathing of the same size weighed 28 ounces (.794 kilogram) a square foot (.093 square meter). On smaller vessels the sheathing measured 20 inches (50.80 meters) by 4 feet (1.219 meters) and weighed 18 ounces (0.51 kilogram) a square foot.²⁶

The copper pieces used to sheath U.S. naval vessels were 14 inches (0.356 meter) by 4 feet (1.219 meters) with an inch of overlap.²⁷ These dimensions correspond with those produced by British manufacturers.

French sheathing measured 18 inches (0.49 meter) by 5 feet (1.63 meters). Furthermore, each sheet was .075 centimeter thick and weighed 14 pounds (6.87 kilograms) a sheet.²⁸

Naval contracts negotiated between the Republic of Texas and Boston shipyards discuss, in detail, the construction of vessels used in the Texas Gulf. The Dawson's contract detailed construction features and armament for one ship, two brigs and three schooners that were purchased for the Texas Navy in 1839. These were to be, respectively, 125 feet, 110 feet, and 66 feet between perpendiculars. All of these vessels were to be planked with white oak and copper sheathed and fastened.

Aside from the Texas naval vessels, only four other vessels are documented to have had copper sheathing and copper fasteners. These vessels were all manufactured in the early to mid 1830s and ranged from between 67 and 96 feet. All four vessels were used to transport cargoes. Two of these vessels were a Mexican brig and schooner captured by the Texas navy in the late 1830s, the *Fenix* and *Correa Segundo*.²⁹ The two other vessels, the *Opposition* and *Robert Center*, both schooners, were involved in trade between the United States and Texas. All were copper sheathed and fastened.

Over 10 pieces of copper sheathing were recovered from the wreck site. All the copper sheets were fragmentary, ranging in size from 2 ½ square inches (1.00 squared centimeters) to 28 15/16 inches (74.70 centimeters) in length. The longest panel, though incomplete, measures 28 15/16 inches (74.40 centimeters) in length. This copper sheet, 14925, was still nailed to a piece of wood planking measuring approximately 4 ½ inches



Figure 38. Copper Sheathing from the Pass Cavallo Site. Artifact NP/CU-1. *Photography by A. Borgens.*

(11.50 centimeters) by $6 \frac{3}{8}$ inches (16.20 centimeters). The thickness of the plank, $1 \frac{7}{16}$ in (3.65 cm), is not complete due to the severe toredo damage. The surface between the plank and the copper sheathing was covered with pitch. Only one fragment, artifact NP/Cu – 1, has a complete measurable height of $13 \frac{5}{16}$ inches (33.90 centimeters) which closely corresponds to the 14 inch height of the sheathing used on both British and American ships (fig. 38). The sheathing fastener holes were spaced between $\frac{3}{4}$ and 2 inch (1.85 to 5.10 centimeters) apart, $\frac{1}{8}$ an inch (.30 centimeters) inside the edge of the sheet.

The use of the copper sheathing on the Pass Cavallo vessel is diagnostically important as certain ship construction features suggest that the vessel's use greatly postdates the manufacture of the arms it was carrying. This said, there is some difficulty in using the sheathing to make hypotheses regarding the ship's years of use. The use of copper sheathing and copper alloy fasteners on a vessel generally corresponds to that vessel's intended use. Military vessels were sheathed sometimes decades ahead of those conducting trade. The height of the sheathing suggests the vessel wrecked at Pass Cavallo was most likely of British or American manufacture (or repair).

HULL FASTENERS

The size the fasteners was variably based on the nationality and size of the

vessel. Britain, the forerunner of copper sheathing/fastener technology was the first international power to change over the fasteners used on their naval vessels on a large scale. A lasting symbol of Britain's historic naval dominance, the *HMS Victory*, used 1 ½ inch (3.81 centimeters) long, 5/32 inch (.396 centimeters) diameter sheathing nails³⁰ with a counter-sunk head.³¹

An American China trader, the *Rapid*, used sheathing nails 3.00 centimeter in length with a .50 centimeter diameter nail head.³² The nail shanks were both square and round.³³ Copper sheets on French vessels were attached to the hull with cupreous nails measuring 3.00-3.40 centimeters in length with a .50 cm head diameter.³⁴ The circular heads of the nails measured 1.40-1.80 centimeters in diameter.³⁵

The sheathing nails from the Pass Cavallo wreck vary in length (many are fragmentary) from 13/16 to 1 ¾ inches (2.12 –3.40 centimeters) with a ¼ to 3/16 inch (.26-.43 centimeter) square shank cross-section at the head. The tack nail diameters range from 5/16 to 7/16 inch (.83-1.11 centimeters). In general, the shank at the neck was in good condition for the first .20 - .30 centimeters, after which there was heavy corrosion of the nail shank. The corroded area of the nail would have been in contact with the hull planks, the acidic quality of the wood thus aiding in their deterioration.

Under the copper sheathing, cupreous spikes fastened the planks to the frame. The vessels produced in Boston for the Texas Navy used a combination of treenails and copper alloy spikes. Two treenails and two composite spikes were used for each frame. The composite spikes for the schooners, the smallest of the requested vessels, were to measure five inches (12.70 centimeters) in length. The construction features of these

naval vessels, however, are probably not indicative of the ubiquitous coastal schooners that were so common in Texas in the 19th century.

The spikes on the American vessel, the *Rapid* were 16.00 centimeters long.³⁶ Cupreous bolts measured 15.00-25.00 centimeters in length with a shank diameter that measured between 2 .00-5.00 centimeters. The bolt heads and ends were hammered into shape.³⁷

The composition metal spikes recovered from the Pass Cavallo site (fig. 39) measure between 4 $\frac{3}{8}$ to 5 $\frac{9}{16}$ inches (11.00 to 14.20 centimeters), with an approximate $\frac{5}{16}$ inch (1.00 centimeter) square cross-section. There are eight spikes, four of which are complete. The dimensions of the square spike heads range from $\frac{1}{2}$ to $\frac{3}{4}$ inches (1.00 to 2.00 centimeters).



Figure. 39. Cupreous Spikes. *Photography by A. Borgens*

RIGGING

Only three artifacts from the survey are of the ship's rigging. An eyebolt and two eyehooks, one with a thimble, were found in the wreck survey (fig. 40). The eyehooks are of differing sizes and the thimble has evidence of a layered canvas covering, presumably to minimize chafing of the rope. The smaller eyehook had rope fragments concreted to the shank.

These objects were integral in the function of a vessel's rigging. An iron thimble is fixed to rigging for the attachment of blocks and to also reeve rope through.³⁸ The combined thimble and eyehook frequently was attached to a block.³⁹

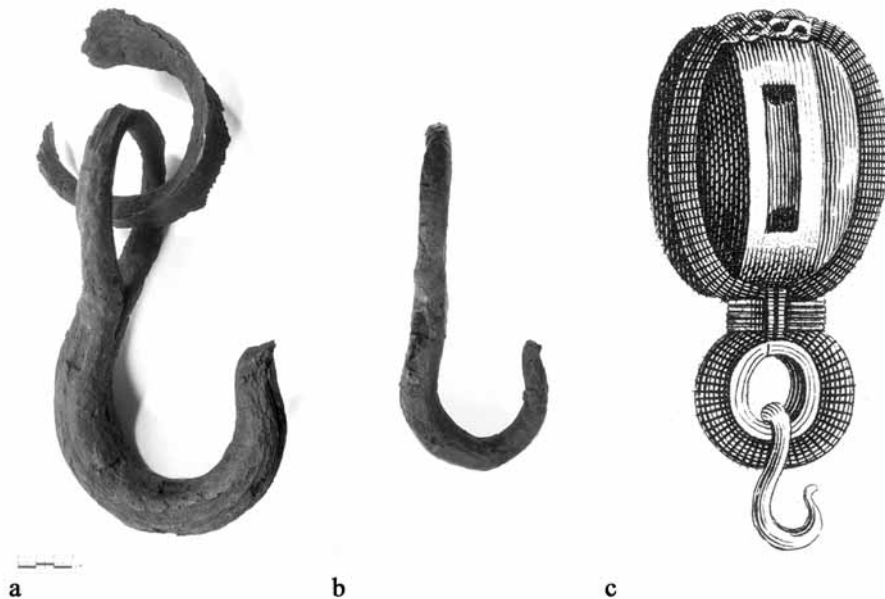


Figure 40. Rigging Pieces. a) 14997, eyehook and thimble, b) 14983, eyehook, c) illustration of an eyehook (Lever, *A Young Sea Officer's Sheet Anchor*, 15, fig. 130). *Photography by A. Borgens.*

BALLAST

Historically ships have been ballasted as long as there was a cargo to carry. Most vessels filled their holds with rocks. More efficient methods were devised for ballasting ships, though sometimes this was employed at a greater expense. Aside from rocks, ships could be weighted down with just about anything: cut stone, sand, shingles, even old dilapidated firearms,⁴⁰ and broken shot.⁴¹

The most efficient way to ballast a vessel was through the use of pig iron. Pig iron is one of three types of iron (pig, cast, and wrought) and has a high carbon content. The brittle quality of pig iron is not useful for the manufacture of tools and is generally unheard of, save for its use as ballast on ships. Pig iron, due to its regular faceted shape, could be stacked next to the keel. The efficiency in packing the ballast allowed ships to carry larger cargoes and also placed the center of gravity closer to the keel.⁴² This was advantageous, especially for warships that were heavily armed along the gunwale. The pig iron was placed in rows out from the keel in the sections between the ship's frames (fig. 41).⁴³ The pig iron was stacked close to the keelson two high, or in some cases three high. The largest quantity of iron was usually placed forward of amidship, though in smaller vessels little ballast was placed forward of the pump well.⁴⁴

Initially in the British navy, iron ballast was cast into plates no less than two inches thick. Beginning with new contracts in 1735, the pig iron was requested to be cast into iron bars that were three feet long and 6 inches square. This iron ballast was relatively heavy, weighing 320 pounds each. By 1779 a smaller size was also in use,

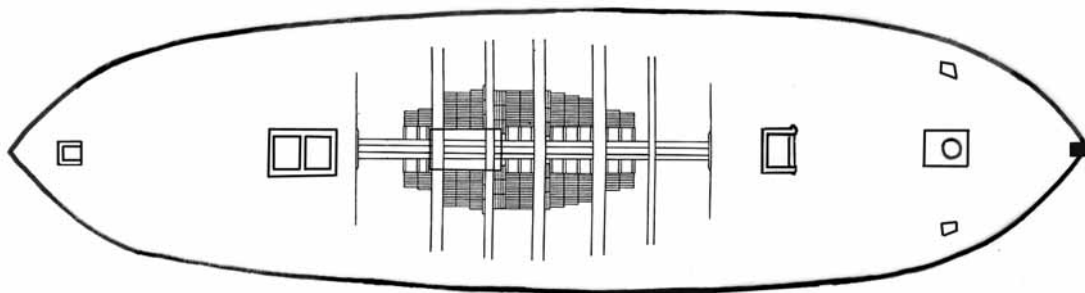


Figure 41. Distribution of Pig Iron Ballast. Arrangement of ballast along the keelson and frames of a late 18th century frigate. *Illustration by A. Borgens after Tomalin et al, Excavation versus Sustainability In Situ, 17, fig. 14 and Lavery, Arming and Fitting, 41.*

measuring 1 foot long, 4 inches square and weighing 56 pounds.

The use of iron ballast, either in the form of old guns, broken shot, and cast blocks, was a fairly common practice. Only a few examples are needed to demonstrate the uses of pig iron ballast. In 1720, 30 tons of ballast was requested to be transferred from the *H. M. S. Guernsey* to the *H. M. S. Lyon*. Captain Codrington observed in 1795 that his ship had carried 718 pig irons weighing 33-34 tons, instead of the 1100 pig irons his ship was supposed to have been loaded with. The wreck of the *Pomone*, a 38-gun British vessel that sank off the British coast in 1811, held at least 37 iron blocks in the hold.⁴⁵

Smaller vessels carried proportionally smaller ballast and cargoes. The yacht *Fubbs* requested seven tons of iron ballast, of which the navy had only two tons in stores. The Texas naval vessel *Brutus*, a schooner of 125-130 tons, was weighted with three tons of pig ballast in 1836.⁴⁶ The schooner was built in Franklin County Maine in 1834.⁴⁷ The vessel measured 82 feet along the deck between the stem and sternpost, the

depth of the hold measured 8 feet from the bottom of the deck to the top of the ceiling planking and had a beam of 22 feet.⁴⁸



Figure 42. Pig Iron, Artifact 14945. *Photography by A. Borgens*

The pig iron ballast retrieved from the Pass Cavallo survey weighs 196 pounds (98 kilograms) and was one of three pig irons visible above the sediment (fig. 42). The rectangular pig iron ballast measures $28 \frac{2}{3} \times 5 \frac{4}{5} \times 4 \frac{4}{5}$ inches (74 x 14.8 x 12.2 centimeters). Two holes are at each end of the ballast, presumably to make it easier to move. The pig ballast from the shipwreck at Pass Cavallo does not conform to the English variations used at the end of the nineteenth century.

CONCLUSION

The ship's artifacts provide no conclusive data that can dramatically aid the identification of the shipwreck. Only general conclusions can be drawn as to the type of vessel wrecked in the pass. The vessel was a small, wood-hulled, copper sheathed sailing vessel, more than likely a small schooner or sloop as these were commonly used to navigate the shallow Texas bay systems. Judging by the surveyed debris field, of no greater than 52 feet (16 meters), the vessel does not appear to have been exceptionally large. The debris field, however, is not the best indication of size. Historically, ships that wrecked in the pass were very efficiently and expeditiously salvaged. The use of pig iron ballast and composite metal hull spikes allude to a higher degree of technical savvy in the construction and use of the vessel. The slow diffusion of copper sheathing use, both in the United States and in the merchant fleet, suggests the vessel dates closer to the 1820s or thereafter.

NOTES

- ¹ The 1757 musket sideplate design was an early factor that contributed to the original dating of the shipwreck.
- ² Mark Staniforth, "The Introduction and Use of Copper Sheathing-A History," *AIMA*, 9, nos. 1, 2 (1985), 23.
- ³ Jean Boudriot, *The Seventy-Four Gun Ship*, vol. 3, *A Practical Treatise on the Art of Naval Architecture* (Paris: Naval Institute Press, 1987), 241.
- ⁴ Richard Steffy, *Wood Ship Building and the Interpretation of Shipwrecks* (College Station, Tex.: Texas A&M Press, 1994), 175.
- ⁵ Staniforth, *The Introduction and Use*, 24.
- ⁶ *Ibid.*, 24.
- ⁷ *Ibid.*
- ⁸ *Ibid.*, 25.
- ⁹ *Ibid.*
- ¹⁰ Richard Pering, *Brief Enquiry into the Causes of Premature Decay in our Wooden Bulwarks with an Examination of the Means, Best Calculated to Prolong their Duration* (Plymouth-Dock (Devonport) U.K.: L. Congdon, 1812), 36.
- ¹¹ Staniforth, *Introduction and Use*, 26.
- ¹² *Ibid.*
- ¹³ Erik A. R. Ronnberg, "The Coppering of 19th Century American Merchant Sailing Ships," *NRJ*, 26, no. 3 (1980), 125.
- ¹⁴ Henry J. Kauffman, *American Copper and Brass* (Camden, NJ: Thomas Nelson & Sons, 1968), 117.
- ¹⁵ Gareth Rees, "Copper Sheathing: An Example of Technological Diffusion in the English Merchant Fleet," *Journal of Transport History*, 1 (1971), 87.
- ¹⁶ These numbers were taken from Lloyd's Register. *Ibid.*, 87.
- ¹⁷ Staniforth, *Introduction and Use*, 26.
- ¹⁸ Rees, *Copper Sheathing*, 88.
- ¹⁹ This is more a factor of documentation than the actual number of copper sheathed ships in existence.
- ²⁰ Stefan Claesson, "Annabella: Excavation of a Nineteenth-Century Coasting Vessel," *IMH Annual Newsletter*, 1 (Spring 1996) 7-8.
- ²¹ Staniforth, *Introduction and Use*, 27.
- ²² John M. Bingeman et al., "Copper and other Sheathing in the Royal Navy," *IJNA*, 29, no. 2 (2000), 224.
- ²³ *Ibid.*
- ²⁴ Staniforth, *Introduction and Use*, 27.
- ²⁵ *Ibid.*
- ²⁶ All of the British sheathing measurements are provided by John W. Fincham, *A History of Naval Architecture* (1821; reprint, London: Scolar Press, 1979), 297.

²⁷ Kauffman, *American Copper and Brass*, 117.

²⁸ Boudriot, *Seventy Four Gun Ship*, 3:242.

²⁹ The *Opposition*, purchased by John Linn around 1830 was used to transport cargoes between New Orleans and Lavaca Bay. Linn, *Reminiscences*, 13. *Robert Center*, a U.S. schooner from New York detained at Matagorda Bay for several months. George G. Garrison (ed.), *Texan Diplomatic Correspondences*, vol. 1 (Washington, D.C.: Government Printing Office, 1908) 433-434. The *Correa Segundo*, a Mexican schooner carrying supplies for the retreating Mexican army, was captured by Texas in 1838 or 1839. The *Fenix*, a 250-ton Mexican brig captured by the *Tomas Toby* in 1837. Francis B. Wright, "Examination of Phoenix, Correo and Thomas Toby," M.S. Navy Papers Texas State Library, a copy in the Dienst's Papers, The Center for American History, The University of Texas at Austin.

³⁰ The terms nails and tacks have both been used to describe the fasteners used with copper sheathing.

³¹ A. Bugler, *HMS Victory: Building Restoration and Repair* (London: Her Majesty's Stationary Office, 1966), 164-168.

³² Staniforth, *Introduction and Use*, 41.

³³ *Ibid.*

³⁴ J. Le Bot, "Le doublage en cuivre des terre-neuvas," *Le Petit Perroquet* (1977), 41-48 in Staniforth, *Introduction and Use*, 30.

³⁵ *Ibid.*

³⁶ *Ibid.*, 42-43.

³⁷ *Ibid.*, 46.

³⁸ George Biddlecomb, *The Art of Rigging* (1925; reprint, New York: Dover Publications, 1990), 34.

³⁹ Darcy Lever, *A Young Sea Officer's Sheet Anchor: A Key to Rigging and Practical Seamanship* (1808; reprint, Ottawa, Canada: Algrove Publishing Limited, 2000), 15.

⁴⁰ R. R. Brown, "Guns carried on the East Indiaman 1600-1800," *International Journal of Nautical Archaeology* (cited hereafter as *IJNA*), 19, no. 1 (1990), 17-22.

⁴¹ P. W. King, "Iron ballast for the Georgian Navy and Its Producers," *MM*, 81, no. 1 (1995), 15-16.

⁴² P. W. King, "Iron Ballast for the Georgian Navy," 16.

⁴³ Brian Lavery, *The Arming and Fitting of English Ships of War* (Annapolis, Md.: Naval Institute Press, 1987), 186.

⁴⁴ *Ibid.*

⁴⁵ David J. Tomalin et al., "Excavation Versus Sustainability *in situ*: a Conclusion on 25 Years of Archaeological Investigations at Goose Rock, a Designated Historic Wreck-site at the Needles, Isle of Wight, England," *IJNA*, 29, no. 1 (2000), 3, 17, 18.

⁴⁶ Jenkins, *Papers*, 1:389.

⁴⁷ Works Progress Administration, *Ship Registers*, 3:30. Dienst, "The Navy of the Republic of Texas," 202.

⁴⁸ Works Progress Administration, *Ship Registers*, 3:30.

CHAPTER VIII

MISCELLANEOUS ARTIFACTS

Numerous artifacts from the collection were too isolated in number to attribute to a distinct type or category. Several artifacts were unable to be identified, including cupreous rods, tool handle, and joined iron pieces.

WROUGHT IRON STOCK

In the late 17th and 18th century, iron was an incredibly valuable resource, especially to the soldiers occupying the Spanish presidios. During the Spanish period, wrought iron was requested with great frequency. The importance of iron at this time was due to its variety of applications and uses. Iron was used to repair damaged arms and artillery,¹ was also molded into cannon balls,² used for mounting artillery,³ made into gun barrels,⁴ and fashioned into spurs and bits⁵. The wrought iron stock often came in two forms, as long rectangular 2 inch 'rods', and in sheets.

Governor Martínez was constantly requesting and receiving iron stores. Iron bar stock, arms, and munitions were transported from a Mexican supply depot at the Rio Grande in September of 1817.⁶ In June of 1819, 400 arrobas of iron were ordered by Martinez but not delivered due financial constraints. In September of 1819 an

emergency order was sent requesting steel and iron, as there was none available for the repair of a large quantity of unserviceable arms.⁷ On February 19, 1820 Martínez reported to Arredondo that there was not a single pound of iron in the artillery arsenal, warehouse or shops.⁸ Such was the dire necessity for iron stock in the province of Texas that in 1817 there was a dispute over the salvage of iron fittings 13 from ships which had been destroyed in Matagorda Bay. The colonists at Matagorda city and the presidio soldiers both felt entitled to the iron that could be recovered from the shipwrecks.⁹



Figure 43. Iron Bar Stock. Two of the smaller stock fragments, artifacts 14991 and 14985. *Photography by A. Borgens.*

Four examples of wrought iron bar stock were recovered from the wreck (two are shown in fig. 43). The most complete examples of iron bar stock weighs between 6 and 10 pounds (14990 and 14987) and measures from 15 $\frac{1}{5}$ inches (39.40 centimeters) to 85 $\frac{1}{4}$ in (216.50 cm) in length. The iron stock fragments were all around 1 $\frac{2}{3}$ -2 inches

(4.27-5.04 centimeters) wide with a thickness of 2/5 inches (1.00-1.05 centimeters). As evidenced by a map made of the site (fig. 3), many more remain on the ocean floor.

Over 40 pieces of bar stock from the wreck were visible above the sediment.

Collectively the iron stock viewed and recovered during the survey weighs at least 400 pounds.

WROUGHT IRON FASTENERS

Several fasteners could not be attributed to the use in the vessel's construction.

There were three wrought iron nails, and a large wrought iron fastener (fig. 44). The



Figure 44. Ferrous Nails, Artifact 14983-1. *Photography by A. Borgens.*

nails had rectangular shank cross-sections of $\frac{3}{16}$ inch (.40-.50 centimeters) and measured between $2\frac{5}{8}$ inches (6.60 centimeters) and $3\frac{1}{16}$ inches (.75 centimeters) long.

The nail heads were also rectangular in cross-section, measuring approximately $\frac{1}{4}$ of an inch (.60 centimeters). According to a typology provided by Noel Hume, the iron cut nails date to after 1820.¹⁰ The large iron fastener (fig. 45) appears to be incomplete and measures $17\frac{1}{2}$ inches (44.30 centimeters) in length, with a square cross-section of $\frac{3}{4}$ inch (1.92 centimeters).



Figure 45. Large Iron Fastener. Artifact 14993 following initial mechanical cleaning. *Photography by A. Borgens.*

CUPREOUS RODS

Three cupreous rods, 14921 and 14922 (fig. 46), were recovered from the survey. These rods are $5\frac{1}{2}$ to $9\frac{3}{8}$ inches (14.04-23.30 centimeters) in length and have a polished surface. The diameter of the shank is $\frac{1}{2}$ an inch (1.24-1/20 centimeters). It is

unknown as to whether these were some sort of metal stock or possible bolt stock.

Cupreous bolts were used to fasten larger elements of a vessels construction, below the waterline, in areas that would come in contact with iron sheathing. Cupreous bolts on the American merchant vessel, *Rapid*, measured 15-25 centimeters in length with a shank diameter that measured between 2 .00-5.00 centimeters. The head and end of the bolts were hammered into shape.¹¹



Figure 46. Cupreous Rods. a) 14921 and b) 14922. *Photography by A. Borgens*

OTHER MISCELLENAEOUS

Several artifacts were singular in their appearance on the site. These artifacts could not be grouped by a type or category.

One of the more unique artifacts from the assemblage is a carved bone tool handle, artifact 14927 (fig. 47a and b). Part of the ferrous tool blade extends $\frac{1}{2}$ an inch (1.20 centimeters) from the handle; however it is incomplete and unable to be identified

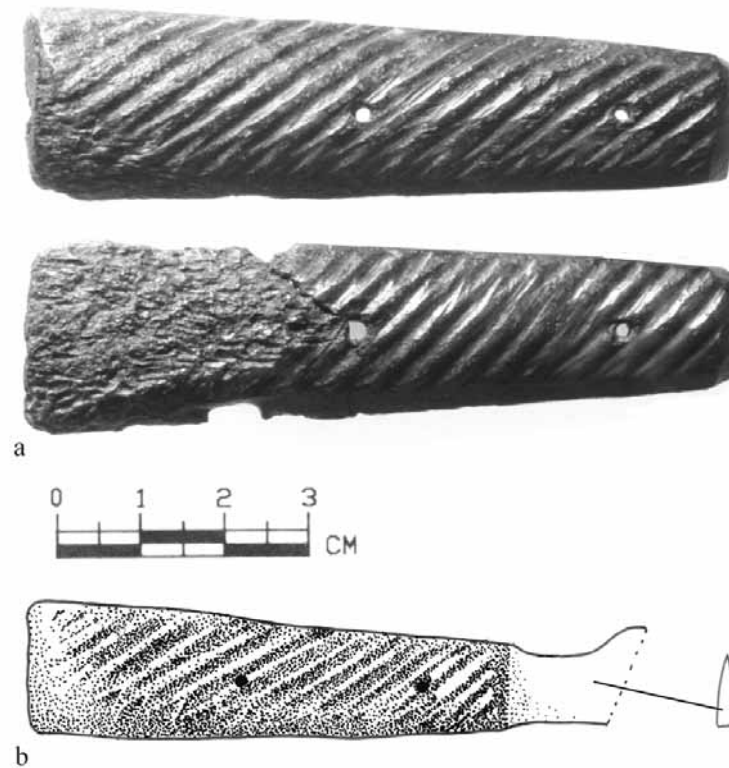


Figure 47. Carved Bone Tool Handle. a) artifact 14927 b) illustration of artifact with epoxy replica blade fragment. *Photography and illustration by A. Borgens.*

as to its function. The handle was constructed in three parts; with the iron blade situated between two carved bone faces, all fastened through and through. The handle halves measure $3 \frac{3}{8}$ by $\frac{7}{8}$ inches (8.50 by 2.25 centimeters, width taken at base) each. The tool blade has a thickness of $\frac{1}{8}$ of an inch (.25 centimeter). The concretion around the tool blade was filled with an epoxy resin to replica the remaining blade. The epoxy blade has a thickness at the spine of $\frac{1}{16}$ of an inch (.23 centimeter) and tapers to a point. The type of handle is commonly found on table knives.



Figure 48. Brass Hook Fastener. *Photography by A. Borgens.*

A small brass hook fastener, artifact 14993-4 (fig. 48), measures $\frac{3}{8}$ inch (1.03 centimeter) by $\frac{3}{8}$ inch (.90 centimeter). These were often used as clothing fasteners and are common on terrestrial sites.¹² Two hook fasteners were found at the Mexican fortifications at the Alamo, La Villita, and were identified as clothing fasteners from Mexican military tunics. Among other things, these were used to close the collars.¹³

Two pieces of iron, affixed perpendicularly and riveted together (fig. 49) were located on the site amongst a trigger guard and lead shot. Each flat iron piece measures roughly $24 \frac{3}{4}$ inches (23 centimeters) by $1 \frac{1}{4}$ inches (3.1 centimeters) by $\frac{3}{4}$ inch (1.9 centimeters). They are affixed together at the center, forming a cross shape. At the each end of both flat pieces is a hole of $\frac{1}{4}$ to $\frac{3}{8}$ inch (.60 to 1.00 centimeters) in diameter, and located $\frac{1}{2}$ to $\frac{11}{16}$ inch (1.20 to 1.80 centimeters) distance from the end. It is possible that this object could have been used as either a brace of some sort or possibly a hatch or window cover.

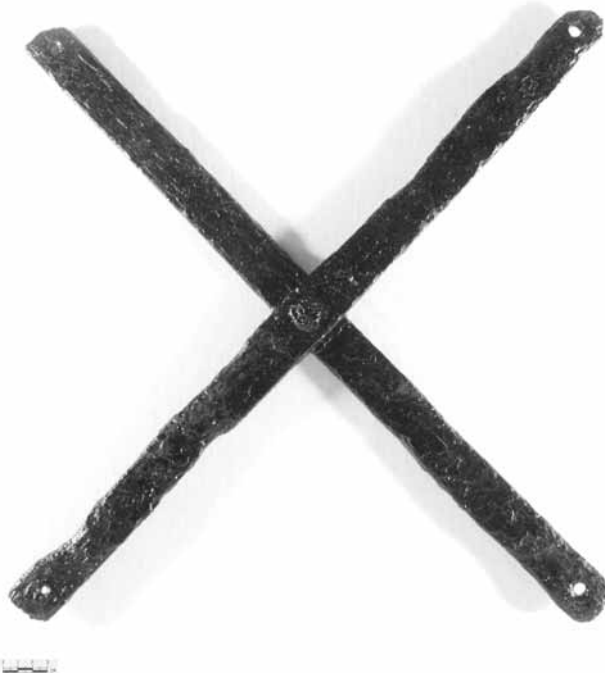


Figure 49. Crossed Flat Iron, Artifact 14912. *Photography by A. Borgens.*

Affixed to a conglomeration of weapons was an unusual rope object (fig. 50). Two musket fragments, situated side by side were overlapped diagonally a third musket fragment. In the crux between the diagonally placed musket barrel and the neighboring musket fragment was a piece of a saber blade. Situated beneath this object, but atop the musket fragment was a series of rope fragments of varying thicknesses. Three rope fragments were placed side by side and all measure 1 inch (2.52 centimeter) in diameter.

Smaller rattan-like pieces of $\frac{1}{4}$ inch (.60 centimeter) diameter were underneath the rope, but also extending out from under the rope and to the side. Two of these smaller pieces had coils of iron wrapped around the diameter of the object for a distance of $\frac{11}{16}$ inch (1.80 centimeters). The function of the iron wrapped pieces could not be determined.

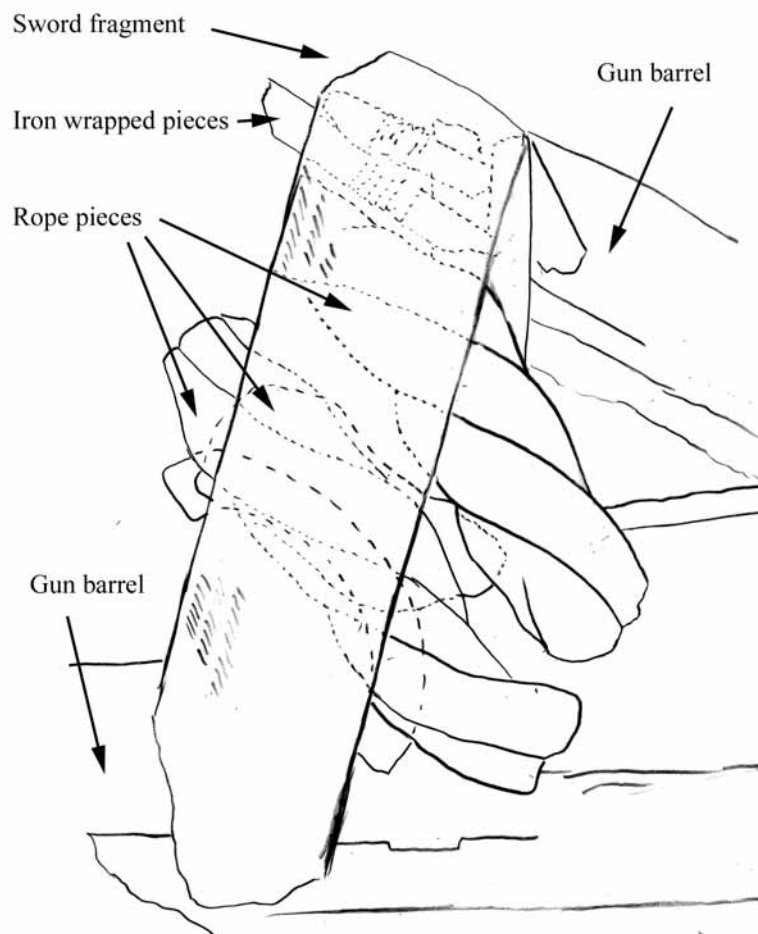


Figure 50. Rope Anomaly. Sketch of the artifact in-situ. *Illustration by A. Borgens.*

NOTES

¹ Martínez to Joaquín de Arredonde , June 7, 1820, Virginia H. Taylor, *The Letters of Antonio Martinez*, 332.

² Martínez to Joaquín de Arredonde, April 20, 1819. Taylor, “Calender of the Letters of Antonio Martinez, Last Spanish Governor of Texas 1817-1822,” *SHQ*, 60, no. 4 (April 1957), 540.

³ George w. Hockley to Branch T. Archer, September 1840, House, *Appendix to the Journals*, 171.

⁴ In the 18th century, iron bars two inches thick were forged in ½ inch thick sheets, than hammered into barrels. Heinrich. Müller, *Guns, Pistols, Revolvers: Hand Firearms from the 14th to 19th Centuries*, (trans.) M.O.A. Stanton (New York: St. Martin’s Press, 1980) 109.

⁵ Martínez to Joaquín de Arredonde, June 16, 1819, Taylor, *The Letters of Antonio Martinez*, 237.

⁶ Martínez to Joaquín de Arredonde, Sept. 15, 1817, Virginia H. Taylor, “Calender of the Letters of Antonio Martinez, Last Spanish Governor of Texas 1817-1822,” *SHQ*, 59, no. 3 (Jan. 1956), 380.

⁷ Martínez to Joaquín de Arredonde, Sept. 27, 1819, *The Letters of Antonio Martinez*, 265-267.

⁸ Martínez to Joaquín de Arredonde, Feb. 19, 1820, *ibid.*, 306.

⁹ *Ibid.*

¹⁰ Hume, *Artifacts of Colonial America*, 253.

¹¹ Staniforth, *Introduction and Use*, 46.

¹² Hume, *Artifacts of Colonial America*, 255.

¹³ Brown, *Villita Earthworks*, 100.

CHAPTER IX

CONCLUSION

The southeastern edge of Matagorda Island has eroded away substantially. The placement of the various wrecks historically appears to have been off of the historic southeastern tip of Matagorda Island, in Pass Cavallo. Three vessels are documented as having wrecked specifically on the sandbar: the 1817 pirate vessel, the *Hannah Elizabeth*, and the *Pelicano*. The location of the *General Bustamente* is not specifically known but it may have also wrecked on the bar. According to contemporary sources, the *San Felipe* wrecked six to eight miles east of the pass. If these reports were indeed accurate, this would place the *San Felipe* well outside of the range of the wreck site.

The archaeological evidence suggests the arms on the Pass Cavallo wreck were cargo items, packed in boxes padded with dunnage and not entirely items of shipboard use. Of the five vessels that wrecked in the vicinity of the pass, only three are definitively known to have been carrying military supplies and/or armament as cargo: the *Hannah Elizabeth*, the 1817 pirate ship, and the *General Bustamente*. As the musket cargo onboard the *Hannah Elizabeth* was thrown overboard and possibly salvaged, the association of the cargo with the vessel is speculative. Interviews with the wreck survivors suggest the cargo was jettisoned after the vessel became beached and as it was being approached by the Mexican naval vessel. There is the possibility that when the vessel overturned, it sank on top of, or in the proximity, of the arms cargo.

In an overview of firearm importation patterns (see Chapter II), the types of arms recovered from the wreck site would have been circulating in the region of the Gulf of Mexico after 1823. This would make the *General Bustamente* and the *Hannah Elizabeth* the best candidates for the wreck, as the wrecks well postdate the importation of these arms, in mass, by the Mexican government in the mid 1820s.

The archaeological site itself measured approximately 52 feet x 26 feet (16 x 8 meters) and implies a vessel of a smaller scale. This site is unexcavated and there is an indication that the ship timbers themselves are no longer extant. Without further examination of the site, it is impossible to determine the scale of the wrecked vessel. If the site size itself is indicative of the true vessel size, again the *General Bustamente* and the *Hannah Elizabeth* would be viable candidates. The *General Bustamente* was a sloop, the smallest of the gulf coastal sailing vessels and the schooner *Hannah Elizabeth* was 67 feet long, roughly the length of the wreck site debris field.

Though the nature of the cargo indicates a possible Mexican origin for the vessel, comparisons with Mexican military terrestrial sites suggest that the cargo was more than likely to have originated in the United States and may have been intended for the Texan army. The cargo of the *Hannah Elizabeth* best describes the artifact assemblage recovered in the survey. According to a contemporaneous source, two boxes onboard the *Hannah Elizabeth* contained a mixed assortment of arms. The wreck site at Pass Cavallo contained a variety of arms types: three patterns of military arms, evidence of two pistols, furniture from both muskets and carbines, and trigger guards from four unidentified arms types. The military pattern arms are known to have been available in

New Orleans, the vessel's point of origin. The Model 1757 Spanish musket was used by Spanish expeditionary troops stationed in Louisiana. The India Pattern musket, a remnant from the defeat of the British Infantry at New Orleans, may have been the TOWER arms offered for sale to Texas, by New Orleans's merchants. These weapons may have formed part of the cargo of the *Hannah Elizabeth*.

These factors suggest that the *Hannah Elizabeth*, of the known wrecks, is the mostly likely candidate as the shipwreck surveyed at Pass Cavallo. The cargo, the size, and date of wreckage conform to the information that has been thus learned from the conserved artifacts and historical research.

REFERENCES

PRIMARY SOURCES

- Adams, Ephraim D., (ed.). *British Diplomatic Correspondences Concerning the Republic of Texas 1838 –1846*. Austin, Tex.: Texas State Historical Association, 1918.
- Barker, Eugene C., (ed.). *The Austin Papers October 1834-January 1837*. Austin, Tex.: University of Texas Press, 1927.
- . *The Austin Papers*. Annual report of the American Historical Association, 2, no. 1 (1924).
- Brinkley, William Campbell (ed.) *Official Correspondences of the Texan Revolution, 1835-1836*. Vol. 2. New York: Appleton-Century Company, Inc., c. 1936.
- Castañeda, Carlos E., (trans.). *The Mexican Side of the Texan Revolution*. 2nd ed. Austin, Tex.: Graphic Ideas, 1970.
- Cushing, S. W. *Adventures in the Texas Navy and at the Battle of San Jacinto*. 1857. Reprint, Austin, Tex.: W. M. Morrison Books, 1985.
- Deanes' Manual of the History and Science of Fire-arms*. London: Longman, Brown, Green, Longmans, and Roberts, 1858.
- Dienst, Alexander. Papers. The Center for American History. The University of Texas at Austin.
- Foster, William F., (ed.). *The La Salle Expedition to Texas: The Journal of Henri Joutel*,

- 1684-1687. Translated by Johanna S. Warren. Austin, Tex.: Texas Historical Association, 1998.
- Gomez, Eusebio, (ed.). *La Diplomacia Mexicana*. Vol. 3. Mexico: Talleres de Artes Gráficas-Granja Experimental de Zoquipa, 1913.
- . *La Diplomacia Mexicana*. Vol. 2. Mexico: Talleres de Artes Gráficas-Granja Experimental de Zoquipa, 1912.
- Grajales, Gloria. *Guia de documentos para la historia de Mexico en archivos ingleses Siglo 29*. Mexico: Universidad Nacional Autonoma de Mexico, 1969.
- Gulick Jr., Charles Adams, (ed.). *Papers of Mirabeau Buonaparte Lamar*. Vol. 5. 1921. Reprint, Austin, Tex.: Baldwin and Sons, 1973.
- Hatcher Mattie A., (ed.). "Letters of Antonio Martinez, the Last Spanish Governor of Texas, 1817-1822." *Southwestern Historical Quarterly*, no. 4 (1936), 327-332.
- Jenkins, John H., (ed.). *The Papers of the Texas Revolution, 1835-1836*. 10 Vols. Austin, Tex.: Presidial Press, 1973.
- Keilman, Chester V. and Carmela Leal, (eds.) *The Béxar Archives at the University of Texas Archives*. Texas A&M University Libraries, College Station. Austin, Tex.: University of Texas at Austin Library, 1967-1971. Microfilm.
- Laffite, Jean. *The Journal of Jean Lafitte: The Privateer's Own Story*. New York: Vantage Press, Inc., 1958.
- Lever, Darcy. *A Young Sea Officer's Sheet Anchor: A Key to Rigging and Practical*

Seamanship. 1808. Reprint, Ottawa, Canada: Algrove Publishing Limited, 2000.

Linn, John J. *Reminiscences of Fifty Years in Texas*. 1883. Reprint, Austin, Tex.: The Steck Company, 1986.

Martinez, Antonio. "Destruccion de los Malvados que Salieron de Soto la marina con el Titulado Colonel Perry para la Costa del Norte, y Perteneciente a la Gavilla del traidor Mina." *Gacta Extraordinaria del Gobierno de Mexico* VIII: 1107 (July 16, 1817).

McKinney, Thomas F. Papers. The Center for American History. The University of Texas at Austin.

Ministerio de Guerra y Marina. *Memoria del Secretario de Estado y del despacho de Guerra y marina*. Evans Library, Texas A&M University, College Station, Tex.; Mexico: Imprente de Vicente G. Torres, 1852. Microfilm

———. *Memoria del Secretario de Estado y del despacho de Guerra y marina*. Evans Library, Texas A&M University, College Station, Tex.; Mexico: Imprente de Vicente G. Torres, 1846. Microfilm.

———. *Memoria del Secretario de Estado y del despacho de Guerra y marina*. Evans Library, Texas A&M University, College Station, Tex.; Mexico: Imprente de Vicente G. Torres, 1845. Microfilm.

Pering, Richard. *Brief Enquiry into the Causes of Premature Decay in our Wooden Bulwarks with an Examination of the Means, Best Calculated to Prolong their Duration*. Plymouth-Dock (Devonport), U.K.: L. Congdon, 1812.

Smither, Harriet, (ed.). *Journals of the Fourth Congress of the Republic of Texas 1839-1840, to which are Added the Relief Laws*. Austin, Tex.: Von Boeckmann Jones Co., 1931.

Taylor, Virginia H. (ed.). *The Letters of Antonio Martinez: Last Spanish Governor of Texas 1817-1822*. Austin, Tex.: Texas State Library, 1957.

———. “Calendar of the Letters of Antonio Martinez, Last Spanish Governor of Texas 1817-1822.” *Southwestern Historical Quarterly*, 60, no. 4 (April 1957) 533-547.

———. “Calendar of the Letters of Antonio Martinez, Last Spanish Governor of Texas 1817-1822.” *Southwestern Historical Quarterly*, 59, no. 3 (Jan. 1956) 372-381.

Texas (Provisional Government). *The Journal of the Proceedings of the General Council of the Republic of Texas*. Evans Library, Texas A&M University, College Station, Tex.; Houston: National Intelligencer Office, 1839. Microfilm.

Texas (Republic). Congress. *Appendix to the Journals of the House of Representatives*, 5th Cong. Evans Library, Texas A&M University, College Station, Tex.; Austin: Gazette 1842. Microfilm.

Texas (Republic). Congress. *Journals of the House of Representatives of the Republic of Texas, 1st Cong., 1st sess., 1838*. Evans Library, Texas A&M University, College Station, Tex. Microfilm.

Texas (Republic). House Judiciary Committee. “Report of the Judiciary Committee on

the Petition of the Captors of the Schooner Pelicano,” *House Journals of the 3rd Cong.* (N.d.). Dienst Papers, The Center for American History, The University of Texas at Austin.

Texas (Republic). Navy Department. *Annual Report of the Secretary of the Navy, November 1839*. Austin, Tex.: Whiting’s Press, 1839.

Texas (Republic). War Department, General Regulations for the Government of the Army of the Republic of Texas. Evans Library, Texas A&M University, College Station, Tex.; Houston, Tex.: Intelligencer Officer, S. Whiting, 1839. Microfilm.

United States. Consulate. *Dispatches from the United States Consuls at Galveston, 1817-1845*. Southern Methodist University, DeGolyer Library, Texas. Washington, D. C.: National Archives and Records Services, 1964. Microfilm.

United States. Works Progress Administration, *Ship Registers and Enrollments of New Orleans*. 6 Vols. N.p., 1942.

Ward, Henry G. *Mexico in 1827*. Evans Library, Texas A&M University, College Station, Tex.; London: Harry Colburn, 1828. Microfilm.

Williams, Samuel L. Papers. The Center for American History. The University of Texas at Austin.

Yates, A. J., I. N. Moreland, and A. C. Allen, “Untitled statement as to the activities of the *Correo*.” *The Texas Republic* No. 53, (September 19, 1835).

SECONDARY SOURCES

- Archer, Christon I. "The Royalist Army in New Spain: Civil-Military Relationships, 1810-1821." *Journal of Latin American Studies*, 13 (May 1981), 57-82.
- . "To Serve the King: Military Recruitment in Late Colonial Mexico." *Hispanic American Historical Review*, 55, no. 2 (May 1975), 226-250.
- Arnold, J. Barto, *A Matagorda Bay Magnetometer Survey and Site Test Excavation Project*. Texas Antiquities Committee Publication no. 9. Austin, Tex.: Texas Antiquities Committee, 1982.
- Arnold, J. Barto and Robert Weddle. *The Nautical Archeology of Padre Island: The Spanish Shipwrecks of 1554*. New York: Academic Press, 1978.
- Bailey, De Witt. *Pattern Dates for British Ordnance Small Arms, 1718-1783*. Gettysburg, Pa.: Thomas Publications, 1997.
- . "Those Board of Ordnance Indian Guns-Again." *The Museum of the Fur Trade Quarterly*, 21, no. 1 (1985), 1- 18.
- . *British Military Longarms 1815-1865*. Harrisburg, Pa.: Stackpole Books, 1971.
- Ballingall, James. *A Plan for the Greater safety of Lives and Property in Steam Vessels, Packets, Smacks, and Yachts*. Evans Library, Texas A&M University, College Station, London: W. Morrison, 1832. Microfilm.
- Bauer, Karl J. *Surfboats and Horse Marines: U. S. Naval Operations in the Mexican War, 1846-1848*. Annapolis, Md.: United States Naval Institute, 1969.
- Biddlecomb, George. *The Art of Rigging*. 1925. Reprint, New York: Dover

Publications, 1990.

Bidwell, Robert L. "The First Mexican Navy 1821-1830." Ph.D. diss., University of

Virginia, 1960.

Bingeman, John M., John P. Bethell, Peter Goodwin, Arthur T. Mack. "Copper and

Other Sheathing in the Royal Navy," *International Journal of Nautical*

Archaeology, 29, no. 2 (2000), 218-219.

Blackmore, Howard L. *British Military Firearms, 1650-1850*. Revised, London:

Greenhill Books, 1994.

Blaine, J. C. "Firearms and Related Artifacts from the Vinson Site." *Texas*

Archaeological Society, 64 (1993), 163-186.

———. "A Summary and Discussion of Additional Findings at the Gilbert Site, an

Eighteen-Century Nortefio Occupation in Rains County, Texas." *Bulletin of the*

Texas Archaeological Society 63 (1992), 175-196.

———. "The Gilbert Site: A Nortefio Focus Site in Northeastern Texas." *Bulletin of the*

Texas Archaeological Society, 37 (1966), 33-81.

Blaine, J. C., M. P. Miroir, R. King Harris, and Janson McVay. "Bernard de la Harpe

and the Nassonite Post." *Bulletin of the Texas Archaeological Society*, 44

(1973), 138-158.

Blaine, J. C., R. King Harris, Inus Marie Harris, and Jerrylee Blaine. "A Preliminary

Archaeological and Documentary Study of the Womack Site, Lamar County,

Texas." *Bulletin of the Texas Archaeological Society*, 36 (1965), 317-345.

Block, William T. "A History of Jefferson County, Texas from Wilderness to

Reconstruction.” Master's thesis, Lamar University 1976.

Bonilla, Juan de Dios. *Apuntes para la Historia de la Marina Nacional*. Mexico: N.p., 1946.

Boudriot, Jean. *Armes a feu Francaises Modeles Reglementaires, 1717-1836*. 4 Vols. Paris: Editions du Portail, 1997.

———. *The Seventy-Four Gun Ship. A Practical Treatise on the Art of Naval Architecture*. Vol. 3, *Masts-Sails-Rigging*. Translated by David H. Roberts. Paris: Naval Institute Press, 1987.

———. *The Seventy-Four Gun Ship; A Practical Treatise on the Art of Naval Architecture*. Vol. 2, *Fitting Out the Hull*. Translated by David H. Roberts. Paris: Naval Institute Press, 1986.

Brinckerhoff, S. B. and P. A. Chamberlain. *Spanish Military Weapons in Colonial America 1700 -1821*. Harrisburg, Pa.: Stackpole Books, 1972.

Brinckerhoff, Sidney B. and Odie B. Faulk. *Lancers for the King; A Study of the Frontier Military System of Northern New Spain, with a Translation of the Royal Regulations of 1772*. Phoenix, Ariz.: Arizona Historical Foundation, 1965.

Brooker, R. E. *British Military Pistols 1603-1888*. Dallas: Taylor Publishing Company, 1978.

Brown, Kenneth M., Anne A. Fox, Joseph H. Labadie, Samuel P. Nesmith, Paul S. Storch, David D. Turner, Shirley Van der Veer, and Alisa J. Winkler. *La Villita Earthworks (41 BX 677): San Antonio, Texas*. Edited by J. H. Labadie. San Antonio, Tex.: The University of Texas at San Antonio, 1986.

- Brown, M. L. *Firearms in Colonial America: The Impact on History and Technology, 1492-1792*. Washington D.C.: Smithsonian Institution Press, 1980.
- Brown, R. R. "Guns carried on the East Indiaman 1600-1800." *International Journal of Nautical Archaeology*, 19, no. 1 (1990), 17-22.
- Bugbee, Lester G. "What Became of the Lively." *Quarterly of the Texas State Historical Association*, 3, no. 2 (1899), 141-148.
- Bugler, A. *HMS Victory: Building Restoration and Repair*. London: Her Majesty's Stationary Office, 1966.
- Claesson Stefan. "Annabella: Excavation of a Nineteenth-Century Coasting Vessel." *Institute of Maritime History Annual Newsletter*, 1 (Spring 1996) 4-10.
- Chapelle, Howard I. *The History of American Sailing Ships*. New York: W. W. Norton & Company, Inc., 1935.
- Chipman, Donald E. *Spanish Texas 1519 - 1821* Austin, Tex.: University of Texas Press, 1992.
- Daniel, James M. *The Ships of the Texas Navy: A List Compiled by James M. Daniel*. San Jacinto, Tex.: San Jacinto Museum of History Association, 1948.
- Darling, A. D., *Red Coat and Brown Bess*. Historical Arms Series no. 12. Ottawa, Canada: Museum Restoration Service, 1971.
- Dawson, Frank G. *The First Latin American Debt Crisis: The City of London and the 1822-1825 Loan Bubble*. New Haven, Conn.: Yale University Press, 1990.
- Day, James M. "Texas Letters and Documents." *Texana*, 6 (1968), 87-95.
- Depalo, William. *The Mexican National Army 1822-1852*. Texas A&M Military

- Series, no. 52. College Station, Tex.: Texas A & M Press, 1997.
- Deshields, James T. *Tall Men with Long Rifles*, 2nd ed. San Antonio, Tex.: Naylor Co, 1971, 246.
- Dienst, Alexander. "The Navy of the Republic of Texas, Part I." *Quarterly of the Texas State Historical Association*, 12, no.3 (Jan. 1909), 165-203.
- Esdaile, Charles J. *The Spanish Army in the Peninsular War*. Manchester, U.K.: Manchester University Press, 1988.
- Faulk, Odie B. *The Leather Jacket Soldier: Spanish Military Equipment and Institutions of the Late 18th Century*. Pasadena, Calif.: Socio-Technical Publications, 1971.
- . *The Last Years of Spanish Texas 1778-1821*. London: Mouton & Co., 1964.
- Fincham, John W. *A History of Naval Architecture*. 1821. Reprint, London: Scolar Press, 1979.
- Francaviglia, Richard V. *From Sail to Steam, Four Centuries of Texas Maritime History*. Austin, Tex.: The University of Texas Press, 1998.
- Frantz, Joe B. "The Mercantile House of McKinney & Williams, Underwriters of the Texas Revolution." *Bulletin of the Business Historical Society*, 26, no. 1 (1952), 1 -18.
- Garavaglia, Louis A. and Charles G. Wonnan. *Firearms of the American West 1803 -1865*. Albuquerque, N. M.: University of New Mexico Press, 1984.
- Garrison, George G. *Texan Diplomatic Correspondences*. 2 vols. Washington D. C.: Government Printing Office, 1908.

- Glendenning, I., *British Pistols and Guns: 1640-1840*. 2nd ed. New York: Arco Publishing Company, 1967.
- Guthrie, Keith. *Texas Forgotten Ports Mid-Gulf Coast Ports from Corpus Christi to Matagorda Bay*. Austin, Tex.: Eakin Press, 1988.
- Hamilton, T. M., (ed.). *Indian Trade Guns*. Union City, Tenn.: Pioneer Press, 1982.
- Hanson, Jr., Charles E. *The Northwest Gun*. 2nd ed. Lincoln, Neb.: Nebraska State Historical Society, 1992.
- . “Ketland & Co., Second Chapter,” *Museum of the Fur Trade Quarterly*, 30, no. 4 (1994), 13-14.
- Harding, D. F. *Small Arms of the East India Company 1600-1856*. Vol. 1, *Procurement and Design*. London: Foresight Books, 1997.
- . *Small Arms of the East India Company 1600-1856*. Vol. 2, *Catalogue of Patterns*. London: Foresight Books, 1997.
- Haugh, George F., (ed.). “History of the Texas Navy.” *Southwestern Historical Quarterly*, 63 (April 1960), 572-579.
- Henson, Margaret S. *Lorenzo de Zavala; The Pragmatic Idealist*. Fort Worth, Tex.: Texas Christian University Press, 1996.
- Hicks, James E. *US Military Firearms 1776 – 1956*. La Canada, Calif.: J. E. Hicks, 1962.
- Hill, Dan. *The Texas Navy: In Forgotten Battles and Shirtsleeve Diplomacy*. 1937. Reprint, Austin, Tex.: State House Press, 1987.
- Hitsman, J. Mackey. *The Incredible War of 1812: A Military History*. 1965. Reprint,

- Toronto: Robin Brass, 1999.
- Hudgins, Joe D., Terry Kieler, and Gregg Dimmick. "Tracking the Mexican Army through the Mar de Lodo; April 29 – May 1836." *Houston Archaeological Society Report*, 16 (Fall 2000).
- Hudgins, Joe D. and Gregg Dimmick. "A Campsite of the Retreating Mexican Army; April, 1836, 41WH91, Wharton County, Texas." *Houston Archaeological Society Report*, 13 (1998).
- Hudgins, Joe D. "Post West Bernard (41 WH16)-Republic of Texas Armory 1837-1839, Wharton County Texas." *Texas Archaeological Society*, 57 (1986).
- Hume, Ivor N. *A Guide to Artifacts of Colonial America*. New York: Knopf, 1970.
- Jenkins, John H. "The Texas Navy, Los Diablos on the High Seas." *The American West*, 5, no. 3 (May 1968), 35-41.
- Kauffman, Henry J. *American Copper and Brass*. Camden, N.J.: Thomas Nelson & Sons, 1968.
- Kelly, Pat. *River of Lost Dreams; Navigation on the Rio Grande*. Lincoln, Neb.: University of Nebraska Press, 1986.
- King, P. W. "Iron Ballast for the Georgian Navy and Its Producers." *The Mariner's Mirror*, 81, no. 1 (1995), 15-20.
- Koury, Michael. *Arms for Texas: A Study of the Weapons of the Republic of Texas*. Fort Collins, Tex.: The Old Army Press, 1973.
- Lavery, Brian. *The Arming and Fitting of English Ships of War*. Annapolis, Md.: Naval Institute Press, 1987.

- Lavin, James D. *A History of Spanish Firearms*. New York: Arco, 1965.
- Lomax, D. A. N. *A History of the Services of the 41st (The Welch) Regiment, (Now 1st Battalion the Welch Regiment), from Its Formation, in 1719, to 1895*.
Devonport, U.K.: Ye Caxton Press, 1899.
- Long, David F. *Nothing Too Daring: A Biography of Commodore David Porter*.
Annapolis, Md.: United States Naval Institute, 1970.
- Llull, Francisco F. and J. Hefter. "The Spanish Louisiana Regiment in the Floridas 1779- 1781." *Military Collector and Historian: Journal of the Company of Military Historians*, 16, no. 2 (1964), 79-80.
- Lyman, John. "Register Tonnage and Its Measurement." *The American Neptune*, 5, no. 3 (July 1945), 223-234.
- McGowen, J. H. and J. L. Brewton. *Historical Changes and Related Coastal Processes, Gulf and Mainland Shorelines, Matagorda Bay Area*. Austin, Tex.: University of Texas, 1975.
- McKinney, Bobby J. "Excavated Military Relics of the Texas Revolution and the Republic of Texas, 1836-1846." *Military Collector & Historian*, 51, no. 3 (1999), 116-121.
- Meuse, William A. *The Weapons of the Battle of New Orleans*. Battle of New Orleans Sesquicentennial Historical Booklets, no. 9. New Orleans, La.: The Battle of New Orleans, 150th Anniversary Committee of Louisiana, 1965.
- Moller, George D. *American Military Shoulder Arms, from the 1790s to the End of the Flintlock Period*. Vol. 2. Niwot, Colo.: University Press of Colorado,

1993.

Morgan, Charles S. "New England Coasting Schooners." *The American Neptune*, 21, no. 1 (1963), 5-21.

Morton, Robert A. and Mary J. Pieper. *Shoreline Changes on Matagorda Island and San Jose Island (Pass Cavallo to Aransas Pass): An Analysis of Historical Changes of the Texas Gulf Shoreline*. Austin, Tex.: University of Texas Press, 1976.

Müller, Heinrich. *Guns, Pistols, Revolvers: Hand Firearms from the 14th to 19th Centuries*. Translated by M.O.A. Stanton. New York: St. Martin's Press, 1980.

Nance, Joseph M., *Attack and Counter Attack: the Texas-Mexican Frontier, 1842*. Austin, Tex.: University of Texas Press, 1964.

Neumann, G. *Swords and Blades of the American Revolution*. 3rd ed. Texarkana, Tex.: Rebel Publishing Company, Inc., 1991.

———. *The History of Weapons of the American Revolution*. New York: Harper & Row, 1977.

Newbolt, Sir Henry. *The Story of the Oxfordshire and Buckinghamshire Light Infantry*. London: The Offices of "Country Life," 1915.

Nichols, Ruth G. "Samuel May Williams" *Southwestern Historical Quarterly*, 56, no. 2 (1952), 189-210.

Nieto, Angolina, Joseph Hefner, and Mrs. John Nicholas Brown. *El Soldado Mexicano: Organizacon, Vestuario, Equipo*. Mexico: Epiciones Nieto-Brown-Hefter, 1958.

Norman A. V. B. and G. M. Wilson. *Treasures from the Tower of London: An*

- Exhibition of Arms and Armour*. Bradford, U.K.: Lund Humphries, 1982.
- Pérez, José Borja. *La Historia de las armas de fuego portátiles a través de la colección del Ejército*. Madrid: Ministerio de Defensa, 1999.
- Priest, Graham. *The Brown Bess Bayonet 1720-1860*. Norwich, U.K.: Tharston Press, 1986.
- Rees, Gareth. "Copper Sheathing: An Example of Technological Diffusion in the English Merchant Fleet." *Journal of Transport History*, 1 (1971), 85-94.
- Reilly, Robert M. *American Socket Bayonets and Scabbards: A Comprehensive Illustrated History of Socket Bayonets, Scabbards, and Frogs in America, from the Colonial through to the Post-Civil War Period*. Lincoln, R. I.: A. Mowbray, 1990.
- Reilly, R. "The Republic of Texas Tryon Musket." *The Texas Gun Collector* (1955), 31.
- Roberts, R. and J. S. Olsen. *A Line in the Sand: The Alamo in Blood and Memory*. New York: The Free Press, 2001.
- Ronnberg, Erik A. R. "The Coppering of 19th Century American Merchant Sailing Ships." *Nautical Research Journal*, 26, no. 3 (1980), 125-148.
- Rose, Victor M. *Historia of Victoria*. Victoria, Tex.: Bookmark, 1961.
- Rubí, B. Barcelo. *El Armamento Portátil Español (1764-1939), una labor artillería*. Madrid: Liberia Editorial San Martín, 1976.
- Russel, Carl P. *Guns on the Early Frontier: A History of Black Powder Weapons from*

- Colonial Times to the Mexican War*. 2nd ed. New York: Barnes and Noble Books, 1996.
- Sánchez, Joseph P. *Spanish Bluecoats: the Catalonian Volunteers in Northwestern New Spain 1676-1810*. Albuquerque, N.M.: University of New Mexico Press, 1990.
- Santos, Richard G. *Santa Anna's Campaign Against Texas, 1836-1836: Featuring the Field Commands Issued to Major Vicente Filisola*. 2nd ed. Revised, N.p., Texian, 1968.
- Scheina, Robert L. "The Forgotten Fleet: The Mexican Navy on the Eve of War, 1845." *American Neptune*, 30, no. 1 (1970), 46-55.
- Smith, Zachery F. *The Battle of New Orleans*. Filson Club Publications, no. 19. 1904. Reprint, Bowie, Md.: Heritage Books, Inc, 1988.
- Staniforth, Mark. "The Introduction and Use of Copper Sheathing-A History." *Australian Institute of Maritime Archaeology*, 9, nos. 1, 2 (1985), 21-48.
- Steffy, Richard, *Wood Ship Building and the Interpretation of Shipwrecks*. College Station, Tex.: Texas A&M Press, 1994.
- Tomalin David J., Paul Simpson and John M. Bingeman. "Excavation Versus Sustainability *in situ*: a Conclusion on 25 Years of Archaeological Investigations at Goose Rock, a Designated Historic Wreck-site at the Needles, Isle of Wight, England." *International Journal of Nautical Archaeology*, 29, no. 1 (2000), 3-42.
- Turlington, Edgar. *Mexico and Her Foreign Creditors*. New York: Columbia University Press, 1930.
- Warren, Harris G. "The Origin of General's Mina's Invasion of Mexico." *Southwestern*

Historical Quarterly, 42, no. 1 (1938), 1-20.

Webster, Donald B. *American Socket Bayonets, 1717-1783*. Historical Arms Series,

no. 3. Ottawa, Canada: Museum Restoration Service, 1986.

Wells, Tom H. *Commodore Moore and the Texas Navy*. Austin, Tex.: University of

Texas Press, 1960.

Wilbanks, Ralph L., Wes Hall, and Gary E. McKee. *Search for L'Aimable*. Scottsdale,

Ariz.: National Underwater and Marine Agency, 2000.

Wilkinson, Frederick. *British and American Flintlocks*. New York: Country Life

Collectors' Guides, 1971.

Wilkinson-Latham, Robert. *British Artillery on Land and Sea 1790-1820*. Bristol, U.K.:

David & Charles, 1973.

SUPPLEMENTAL SOURCES CONSULTED

Bonilla, Juan de Dios. *Apuntes para la Historia de la Marina Nacional*. Mexico: N.p.,

1946.

Bryce, Douglas, *Weaponry from the Machault, An 18th Century French Frigate*.

National Historic Parks and Sites Branch, Ottawa, Canada: Parks Canada, 1984.

1492-1792.

Calvo, Jaun L. *Armamento Reglementario y Auxiliar del Ejercito Español. Libro no. 1.*

Modelos Portales de Avancargo 1717-1843. Barcelona: N.p., 1975.

- Engelhardt, A. B. "The Story of European Proof Marks. Part I: Historical Notes on the Development of Proof in Europe." *Gun Digest*, 7 (1953), 2 - 12.
- . "The Story of European Proof Marks. Part II: The Development of Proof During the 19th Century." *Gun Digest*, 8 (1954), 160 -183.
- Faulk, Odie B. *The Last Years of Spanish Texas 1778-1821*. The Hague: Mouton, 1964.
- Flaccus, Elmer W. "Commodore David Porter and the Mexican Navy." *Hispanic American Historical Review*, 39, no. 3 (1954), 365-373.
- Ffoulkes, C. J., *Inventory and Survey of the Armouries of the Tower of London*. London: His Majesty's Stationary Office, 1915.
- Frantz, Joe B. "The Mercantile House of McKinney & Williams, Underwriters of the Texas Revolution." *Bulletin of the Business Historical Society*, 26, no. 1 (1952), 1 -18.
- Gardner, R. *Small Arms Makers: A Directory of Fabricators of Firearms, Edged Weapons, Crossbows, and Polearms*. New York: Crown Publishers, 1962.
- Gluckman, A. *United States Muskets, Rifles, and Carbines*. Harrisburg, Pa.: Stackpole Co., 1959.
- Greener, W. W., *The Gun and Its Development*. 9th ed. New York: Bonanza Books, 1910.
- Hamilton, T. M. *Colonial Frontier Guns*. Chardon, Neb.: Fur Press, 1980.
- Hamilton, T. M. "Firearms on the Frontier: Guns at Fort Michilimackinac 1715-1781." *Reports in Mackinac History and Archaeology*, 5. Lansing, Mich.: Mackinac Island State Park Commission, 1976.

- Hardin, Stephen L. *Texas Iliad, A Military History of the Revolution of Texas*. Austin, Tex.: University of Texas Press, 1994.
- Haythornwaite, Philip J. *Weapons & Equipment of the Napoleonic Wars*. Poole, U.K.: Blandford Press, 1979.
- Hicks, James E. *Notes on French Ordinance 1717 to 1936* (Mt. Vernon, N.Y.: N.p., 1938).
- Ibarra, Celia Gutierrez. *Documentos sobre la colonacion en Texas*. Mexico: Instituto Nacional de Antropologia e Historia. 1991.
- Lafitte, Jean. *The Journal of Jean Lafitte: The Privateer-Patriot's Own Story*. New York: Vantage Press, Inc., 1958.
- Lenk, T., *The Flintlock: Its Origin History and Development* (London: Bramhall House, 1965).
- Navi, Antonio Lopez de. *Aportion para un Ensayo Historico de la Marina de Guerra Mexicana*. Veracruz: Escuela Naval Militar, 1934.
- Neu, C. T. "The Case of the Brig Pocket." *Texas Historical Association Quarterly*, 12, no. 4 (April 1909), 247-95.
- Rankin, Robert H. *Small Arms of the Sea Services; A History of the Firearms and Edged Weapons of the U.S. Navy, Marine Corps, and Coast Guard from the Revolution to the Present*. New Milford Conn.: N. Flayderman, 1972.
- Rehling, J. P. "Firearms Used in Mexico." *Gun Report* 5, no. 5 (October 1959), 18-19, 31.
- Scheina, Robert L. "Vessels of the Mexican Navy, 1846-1848." In *Surfboats and Horse*

Marines: U.S. Naval Operations in the Mexican War, 1846- 1848. Annapolis, Md.: United States Naval Institute, 1969.

United States Cartridge Company. *Illustrated Catalogue of United States Cartridge Company's Collection of Firearms.* Old Greenwich, Conn.: WE Inc., 1947.

Weller, Jac. "Shoulder Arms: Principal Weapons of the American Revolution." *The American Arms Collector* (July 1958), 66-71.

Winkler, Ernest W. *Secret Journals of the Senate Republic of Texas 1836-1845.* Austin, Tex.: Austin Printing Co., 1911.

Winston, James E. "Notes on Commercial Relations Between New Orleans and Texan Ports 1838-1839." *Southwestern Historical Quarterly* (Oct. 1930), 91-105.

APPENDIX I
ARMS MARKS

Artifact	Type	Pattern	lock marks	furniture marks
14902	musket fragment	India	TOWER	X (interior)
14903	musket fragment	India	NA	VI (interior)
14946	pistol fragment	British	tulip, Sharpe	
14947	musket fragment	Spanish 1757	NA	
14982	musket fragment	Short Land	crown, GR, TOWER,	stylized crown over 3, D (interior)
14986	musket fragment	Spanish 1757	YBASETA	
14988	musket fragment	India	crown, GR, TOWER	
14989	musket fragment	Short Land	crown, GR	B, D
14995	musket fragment	India	TOWER, crown, GR, broad arrow	XI (interior), C
14996	musket fragment	India	TBA	NO:179: (exterior, bow of trigger guard)
14947	barrel fragment	unknown	NA	
14988-2	barrel fragment	India	NA	II (interior)
14988-3	barrel fragment	Spanish 1757	NA	
14992-2	barrel fragment	India	NA	XI (ramrod channel), XIII (forepipe)
14992-3	barrel fragment	unknown	NA	
14992-4	barrel fragment	British	NA	BB (interior)
14992-5	barrel fragment	unknown	NA	
14992-6	barrel fragment	unknown	NA	
14996-2	barrel fragment	British	NA	
14996-3	barrel fragment	British	NA	
14914	buttplate	India	NA	
14915	buttplate	India	NA	D over 41 (exterior tang)
14916	buttplate	India	NA	GBIM5CN40 (exterior tang)
14917	buttplate	India	NA	ribbon, bugle over 52 (exterior tang)
14918	buttplate	India	NA	III,
14919	buttplate	India	NA	III (interior)
14920	buttplate	India	NA	XIII (interior)
14929	buttplate	India	NA	
14930	buttplate	India	NA	B125 (exterior tang), X (interior)
14934	buttplate	India	NA	C (interior)
14988-4	buttplate	Short Land	NA	XLI (exterior tang)
14998	buttplate	British	NA	P (interior)
14999	buttplate	India	NA	
15000	buttplate	India	NA	
14907	trigger guard	India	NA	
14913	trigger guard	Spanish 1757	NA	
14926	trigger guard	unknown	NA	
14938	trigger guard	India	NA	
14939	trigger guard	Spanish 1757	NA	
14941	trigger guard	unknown	NA	
14942	trigger guard	unknown	NA	
14943	trigger guard	India	NA	
14944	trigger guard	India	NA	III, C, 3 (interior)
14981	trigger guard	Short Land	NA	IC (interior)
14984	trigger guard	India	NA	
14986-2	trigger guard	Short Land	NA	P (interior)
14989-2	trigger guard	India	NA	VII (interior)

14994	trigger guard	India	NA	
14995-2	trigger guard	India	NA	R?(interior)
14995-5	trigger guard	unknown	NA	
14995-7	trigger guard	India	NA	XI
14935	forepipe	India	NA	VI

Italicized letters are not visible

APPENDIX II**GLOSSARY***

*Terminology related to ship technology or firearms cited from James Ballingall, *A Plan for the Greater safety of Lives and Property in Steam Vessels, Packets, Smacks, and Yachts* (Evans Library, Texas A&M University, College Station, London: W. Morrison, 1832) microform, xxi-xxviii and *Deanes' Manual of the History and Science of Fire-arms* (London: Longman, Brown, Green, Longmans, and Roberts, 1858).

barque (bark): a sailing vessel with its two forward masts square-rigged and its rear mast rigged fore-and-aft.

braze: to solder with a high-melting metal, especially brass.

brig: a two-masted ship with square sails.

brown bess: the nickname for a British military musket produced in the 18th and early 19th centuries.

carabina: Spanish term for carbine.

carbine: a firearm with a shorter barrel, often used for cavalry.

corvette: a sailing warship smaller than a frigate, with one tier of guns.

escopeta: Spanish term for a firearm.

espada ancha: a Spanish short sword.

filibuster: an adventurer who engages in unauthorized warfare against another country.

flintcap: lead piece used to hold the flint in place in a flintlock arm.

frame: in shipbuilding, signifies a number of pieces of timber bolted together, in order to form the bottom and sides of a ship.

frigate: a fast, medium-sized sailing warship of the 18th and early 19th centuries.

furniture: the necessary equipment of a ship, trade, etc.

fusil: term for a flintlock arm after it was reintroduced into France following the Thirty year's war. Fusil is derived from the Italian word for flint, a *focile*.

galleon: a large, heavy Spanish warship and trader of the 15th and 16th centuries, with three or four decks at the stern.

gunboat: a small armed vessel of shallow draft, used to patrol rivers, etc.

gunrunner: vessel involved in the smuggling of guns and ammunition.

gunwale: a plank or wale which runs round the vessel's upper works. In merchant ships it is called the covering board, as it lies on the ends of the top-timbers and stanchions which support the rail which passes through it. The gunwale is also called the Plank Sheer. The upper edge of the side of a ship or boat.

Indiaman: a merchant ship traveling regularly between England and India.

keel: the principal piece of timber of a ship. It extends from the stem to the stern-post and in a small vessel it may consist of one piece throughout. For those of larger size, the keel is formed of two or three pieces, which are scarfed together, and laid on blocks. The other timbers which compose the ship are erected on it.

launch: the largest boat carried by a warship.

lighter: a large open barge used chiefly in loading and unloading larger ships lying offshore.

miquelet lock: a Spanish lock similar in its firing mechanism to the flintlock.

munición: Spanish term for ammunition.

musket: a smooth-bore, long-barreled firearm used, as by infantry soldiers, before the invention of the rifle.

packetboat: a boat that travels a regular route carrying passengers, freight, and mail.

patilla: Spanish term for a gun's lock.

pitch: tar boiled to a harder and more tenacious consistency.

piroque: a canoe made by hollowing out a log.

presidio: a military post, fort, garrison.

rifle: a firearm having spiral grooves in the barrel to spin the bullet and so give it greater accuracy and distance.

schooner: a vessel with two or more masts, rigged fore and aft.

sheathing: thin boards or sheets of copper nailed on the bottom of a vessel, to protect it from worms.

ship: a sailing vessel with a bowsprit and at least three square-rigged masts.

sloop: a small boat with a single mast and jib.

stand: a musket and its a bayonet.

treenails: cylindrical oak pins driven through the plank and timbers to fasten them together.

wale: heavy plank fastened to the outside of the hull of a wooden ship.

APPENDIX III
VESSELS AT THE PORT OF GALVESTON, 1815-1845

The data provided in this appendix is a spreadsheet presentation of the United States consular records for the port of Galveston 1815 - 1845. More specific information for these vessels was derived through cross referencing vessels in the New Orleans Ship Enrollment Registers. The total number of vessels derived from these sources for the years between 1815 and 1845 is 364.

The data presented in the appendix includes vessel dimensions, ports of origin, shipbuilding locations, and dates of manufacture. The tonnage for a vessel enrolled in the United States between 1789 and 1864 was calculated using the formula $(L-3/5B) \times B \times D/95$. When the vessel was afloat the formula $L-3/5B$ was used. The former formula used the actual keel length of a vessel, which was difficult to ascertain once the vessel was afloat. Length (B) was measured from the fore part of the stem to the afterside of the stern, above the deck. Breadth was measured at the broadest area above the wales to the outside of the planking. The depth of the vessel (D), for single decked vessels, was taken from the underside of the deck plank to the top of the ceiling planks.¹

¹ John Lyman, "Register tonnage and Its Measurements," *The American Neptune*, 5 (1945), 226.

ship name	nat.	ship type	tons	length	beam	depth	shipbuilding date/location	reference
Abe	US	brig	235					GCR 1-6/1842
Adrian	US	schooner	149					GCR 7/1840
Adventure	US	schooner	122					GCR 1-6/1839
Albert	US	brig	150					GCR 7-12/1839
Albert Gallatin A. Galatin)	US	steamboat	94	127'	18'	4'6"	1839, Pittsburg, PA	GCR 6-12/1840, WPA 3:4
Alert	US	schooner	71					GCR 1-6/1839
Alex(ander) Washington	US	schooner	101	79'5"	23'3"	6'4"	1835, Accomac, VA	GCR 1/3/1840, WPA 3:6
Alexander	US	schooner	64	68'	20'8 7/16"	5'8 7/16"	1835, Chinds Landg., NJ	GCR 12/1839, WPA 3:5
Algeria	US	sloop	50					GCR 12/1840
Alligator	US	schooner	42					GCR 1-6/1842
Allure	US	schooner	81					GCR 7-12/1842
Alonzo	US	brig						GCR 8/30/1817
Alpine	US	schooner	121					GCR 12/1840, GCR 7/1840
Amalia Guiseppina	AUS	ship						GCR 1
Amazon	US	schooner	58	56'6"	17'3"	6'11"	1833, Vinal Haven, ME	GCR 1-6/1839, WPA 4:11
Amelia	US	schooner	69					GCR 1-6/1839
America Free	VEN	brig						GCR 9/8/1817
American Trader	US	schooner	123					GCR 7-12/1839
Angelina	US	schooner	100					GCR 6/1841
Angeline	US	schooner	114					GCR 1-6/1840
Angeline	US	schooner	110					GCR 7-12/1831
Ann	US	schooner	129					GCR 7-12/1839
Anton	US	schooner	88					GCR 1-6/1842
Apphia	US	brig	119					GCR 7-12/1839
Asp	US	schooner	140					GCR 7-12/1839
Atlantic	US	schooner	87	65'5"	20'6"	7'8"	1833, Stonington, CN	GCR 7-12/1841
Augusta	US	schooner	96					GCR 1-6/1839
Augustus Lord	US	schooner	79	64' 2 7/16"	19' 3"	7'6"	1836, Kittory, ME	GCR 1/3/1840, WPA 3:15
Austin	TX	ship	589	125'	31'	12'6"	~1839, Baltimore, MD	NR 15, GCR 7/1840
Austira?	US	schooner	89					GCR 7/1840
Axis	US	schooner	94					GCR 12/1839, WPA 3:1 59

ship name	nat.	ship type	tons	length	beam	depth	shipbuilding date/location	reference
Balize	US	sloop	19					GCR 7/1840
Baranger*	US	schooner	83					GCR 1-7/1844
Bella del Mar	US	brig	125	73'	23'6"	8'8"	1839, Brook Haven, NY	GCR 5/15/1845, WPA 4:27
Belle of Attakapas	US	steamboat	246					GCR 1-6/1842
Bellona	US	schooner	70	63'4"	18'4"	7'	New Orleans, LA	GCR 8/30/1817, WPA/1 13
Bevin	US	brig	108					GCR 1-6/1839
Boston Packet	US	schooner	69	73'6"	22'2"	6'4"	1823, Killingworth, CN	GCR 12/1839 WPA 3:28
Bostonian	US	barque*	269	101'2"	24'2 1/2"	12'1 1/4"	1839, Thomastown, ME	GCR 5/15/1845, WPA 4:35
Boxer*	US	brig						GCR 11-12/1838
Brace	US	schooner	118					GCR 5/15/1845
Brasil	US		180					GCR 11-12/1838
Brazos	US	brig	405					GCR 1/3/1840
Brazos	US	schooner	99	73'7"	22'7"	7'1 1/2"	1841, Kingston, RI	GCR 1-6/1842, WPA 4:36-37
Breeze	US	ship	*19					GCR 1-6/1840
Brighton	US	steamboat	118					GCR 7/1840
Bruze?	US	sloop	19					GCR 1/3/1840
Calibra	MEX							GCR 8/30/1817
Carmelita	US	schooner						GCR 8/30/1817
Catherine	US	brig	199					GCR 7-12/1839
Cato	GB	brig						GCR 1
Caty and Sally	US	schooner	99					GCR 11-12/1838
Ceyton	US	brig	99					GCR 12/1841
Ceyton	US	schooner	78					GCR 1/3/1840
Chadahocha	US	brig	116					GCR 6/1843-1/1844
Challenge								GCR 1
Charles	US	brig	124					GCR 7-12/1839
Charles	US	schooner	74	62'2"	17'4.5"	8'1 1/2"	1830, Duxbury, MA	GCR 7/1840, WPA 3:38
Charles Henry	US	schooner	85					GCR 7-12/1842
Charlotte	US	schooner	58	62'6"	19'6"	5'5"	1832, Escambia, FL	GCR 1-7/1844, WPA 4:49
Chase*	US	schooner	129					GCR 1/3/1840
Citizen	US	schooner	44					GCR 1-6/1839

ship name	nat.	ship type	tons	length	beam	depth	shipbuilding date/location	reference
Citizen	US	schooner	131					GCR 7-12/1839
Cohanout, Cohannis	US	schooner	98					GCR 6/1841
Col. Hanson	US	schooner	131					GCR 12/1841, GCR 1-6/1842
Col. Woods	US	steamboat	134	146'	19'6"	5'	1839, Brownsville, PA	GCR 1-6/1842, WPA 4:54
Colonel Wigginson	US	sloop	5	23'2"	9'2"	3'	1838, Johnstown, PA	GCR 1-6/1839, WPA 3:43
Columbia	US	schooner	75	61'6"	18'3"	8'1"	1833, Gloucester, MA	GCR 12/1839, WPA 3:44
Columbia	US	schooner	61	64'1"	19'2"	5'10"	1835, Newbury, MA	GCR 1-6/1842 WPA 4:55
Columbia	US	steamboat	423	164'6"	22'6"	11'10"	1835, New York, NY	GCR 12/1839, WPA 3:44
Columbia	US	steamboat	125					GCR 11-12/1838
Comet	US	brig	118	73' 6"	22' 8"	8' 4"	1833, Jones Creek, DE	GCR 1/3/1840, WPA 3:45
Comet	US	schooner	10	30'7"	9'10"	3'11"	New Orleans, LA	GCR 1/3/1840, WPA 3:46
Comet	US	schooner	64					GCR 1-6/1839
Commanche	US	schooner	57					GCR 12/1840
Cordelia	US	schooner	98					GCR 7-12/1840
Corine	US	schooner	85	77'2"	22'8"	5'9"	1831, New York, NY	GCR 11-12/1838, WPA 3:50
Crusoe	US	brig	130?					GCR 1-6/1843
Cuba	US	steamboat	569	177'6"	25'4"	13'	1837, Baltimore, MD	GCR 12/1839 WPA 3:55
Cuba	US	steampacket	124	136'5"	17'	5'3"	1835, Cincinnati, OH	GCR 12/1839, WPA 3:55
Cuba or Carla	US	brig	187					GCR 1-6/1842
Cumberland	US	brig	182					GCR 7/1840
Curlew	US	schooner	110					GCR 7-12/1839
Currency	US	schooner	122	79'11"	20'11"	8'3"	1837, Belfast, ME	GCR 1/3/1840 WPA 3:56
Cutter	US	sloop						GCR 6/1843-1/1844
Cybelles	GB	brig						GCR 1
Damon	US	brig	183	83'7"	24'	10'4"	1825, Chatham, CN	GCR 7-12/1839, WPA 3:57
Davy Crockett	US	schooner	31	53'9"	17'1"	4'1"	1834, Express Island	GCR 7-12/1840, WPA 3:59
Dayton	US	steamboat	111	125'4"	17'9"	3'2"	1835, Pittsburgh, PA	GCR 7/1840, WPA 3:59
Declaration	US	schooner	120					GCR 7-12/1841
Delaware	US	schooner	70	66'11"	21'3"	5'9"	1833, New Haven, CN	GCR 12/1839, WPA 3:1 59
Delaware	US	schooner	131					GCR 12/1840
Delia	US	brig	166					GCR 11-12/1838

ship name	nat.	ship type	tons	length	beam	depth	shipbuilding date/location	reference
Delta	US	schooner						GCR 11-12/1838
Devorador	US	brig						GCR 8/30/1817
Diana	US	brig	61	55'4"	17'2"	7'7"		GCR 8/30/1817, WPA 3:1 33
Dolphin	US	schooner	97	68'9"	22'6"	6'6"	1837, Stoningham, CN	GCR 12/1838, WPA 3:62-63
Draco	US	brig	160					GCR 5/15/1845
Dream	US	schooner	33	48'	15'	5'6"	1838, New Albany, IN	GCR 12/1840, WPA 3:63
Echo	US	schooner	117					GCR 1-6/1839
Eclipse	US	schooner	79					GCR 1-6/1839
Edie Prebble	US	schooner	133					GCR 11-12/1838
Edward Kent (Edie Kent)	US	schooner	99					GCR 1-6/1840
Edwin	US	schooner	133					GCR 1/3/1840
Eliza	US	schooner						GCR 8/30/1817
Eliza & Betsy	US	schooner	44	55'6"	17'9"	5'4"	1820, Dennis, MA	GCR 1-6/1839, WPA 3:67
Eliza Messerole	US	schooner	172					GCR 7-12/1839
Eliza Nichols (Eliza Nicoll)	US	schooner	74	62'8"	20'10 1/2"	6'9 1/2"		GCR 12/1840, WPA 3:69
Elizabeth	US	brig	141					GCR 1-6/1839
Elsa	US	ship	349					GCR 7-12/1839, 1/3/1840
Elvira	US	schooner	82				1836, Saybrook, CN	GCR 1-6/1842, WPA 4:88
Emblem	US	schooner	62	71'8"	20'	6'	1836, New London, CN	GCR 11-12/1838, WPA 3:70
Emerline	US	brig	98					GCR 1-6/1840
Emma	US	schooner	42					GCR 7-12/1842
Empresario	US	brig	118	92'8"	17'11"	6'	1838, Baltimore, MD	GCR 1/3/1840, WPA 3:73
Endeavor	US	schooner	13	32'9"	11'	4'6"		GCR 12/1841, WPA 4:90
Enterprise	US	brig	94	66'6"	20'9"	8' 1/2"	1821, Carteret Cty., NC	GCR 12/1839, WPA 3:73
Esperanza	MEX							GCR 8/30/1817
Esperanza	US							GCR 8/30/1817
Eugene	US	brig	233	90'	25'	12'6"		GCR 1/18/1817, WPA/1 42
Eugenia	VEN							GCR 8/30/1817
Evening Port								GCR 8/12/1817
Experiment	US	schooner	86	67'10"	23'	6'7"	1832, Lodi, NY	GCR 1-6/1839, WPA 3:77
Experiment		schooner	31					GCR 1-6/1839

ship name	nat.	ship type	tons	length	beam	depth	shipbuilding date/location	reference
Falcon	US	schooner	23	45'10"	17'1"	5'7"	1839, Algiers	GCR 6/1841, WPA 4:96
Farmer Return	US	schooner	56	60'7"	19'7"	5'7"	1839, South Kingston, RI	GCR 12/1841, WPA 4:99
Flirt	US	schooner	51					GCR 12/1840
Florida	US	schooner	75					GCR 12/1840
Floridan	US	schooner	81	79'5"	25'2"	6'1"	1841, Baltimore, MD	GCR 1-6/1842
Fox	US	schooner	97	77'	22'6"	6'6"	1836, Westerley, RI	GCR 1/3/1840, WPA 3:82
Frances	US	schooner	80					GCR 1-6/1839
Frances	US	schooner	84					GCR 1-6/1839, GCR 6/1841
Frances Amoy*	US	schooner	98					GCR 6/1841
Francis	US	schooner	71					GCR 1-6/1840
Francis Ashby	US	brig	125	80'	22'	8'1"	1837, Stoningham, CN	GCR 1-6/1841, WPA 3:83
Fur Trader	US	schooner	15	47'	12'2"	3'1"	1843, Cincinatti, OH	GCR 1-7/1844
G. W. A. Tate	US	schooner	21	45'10"	14'6"	3'10"	1843, Algiers	GCR 1-7/1844
Galveston	TX	brig	178					GCR 7/1840, GCR 1-6/1842
Galveston	US	brig	412					GCR 7/1840
Garden	US	schooner	88					GCR 1-6/1839, GCR -6/1841
Garonne		brig						GCR 1
General Arismanden	VEN							GCR 8/30/1817
Gentile	US	schooner						GCR 11-12/1838
George	US	brig	132					GCR 1/3/1840
George Henry	US	schooner	110	70'3"	21'7"	8'5 1/2"	1833, Tauton, MA	GCR 1-6/1839, WPA 3:88
George Henry	US	schooner	82					GCR 6/1841
George Klotts	US	schooner	140					GCR 7/1840
Georgeana	US	schooner						GCR 8/30/1817
Gertrude	US	brig	154					GCR 7-12/1839
Glide	US	sloop	7					GCR 7-12/1842
Gordon Wright	US	schooner	135					GCR 1-6/1839
Grecian	US	steamboat	88	120'6"	18'4"	4'3"	1839, Cincinatti, OH	GCR 7-12/1839, WPA 3:92
Groton	US	schooner	114					GCR 7/1840
Guerrero	VEN							GCR 8/30/1817
Harriet	US	schooner	62	62'6"	18'3 1/2"	6'3"	1836, Mathews Cty., VA	GCR 7/1840, WPA 3:94

ship name	nat.	ship type	tons	length	beam	depth	shipbuilding date/location	reference
Harriet Louisa	US	schooner	113	65'	24'1"	7'5"	1837, Perth Amboy, NJ	GCR 12/1839 WPA 3:94
Harriet Porter	US	schooner	90					GCR 1-6/1839
Harvey	US	schooner	99					GCR 1-6/1842
Harvey * Bru*	US	schooner	134					GCR 1/3/1840
Helen	US	schooner	73					GCR 1-6/1842
Henry	US	brig	153					GCR 1-6/1841
Henry	US	schooner	74	63'7"	20'9"	6'4"	1830, Glastonbury	GCR 1/3/1840, WPA 3:97
Henry	US	schooner	99	74'9"	21'1"	7'3"	1837, Baltimore, MD	GCR 7-12/1839, WPA 3:97
Henry	US	schooner	91					GCR 7-12/1840
Henry A. Br*	US	schooner	134					GCR 7-12/1839
Henry Clay	US	schooner	89	24'4"	20'	8'1"	1831, Chatum, MA	GCR 12/1840, WPA 3:97
Henry Clay	US	schooner	124					GCR 7/1840
Hermosa	US	schooner	133					GCR 1-6/1839
Heroine	US	schooner	99					GCR 1-6/1839
Hidalgo	VEN							GCR 8/30/1817
Hoagly	US	schooner	72					GCR 1-6/1839
Homer	US	brig	123					GCR 1-6/1841
Hope Howes*	US	brig	99	74'4"	20'3"	7'6 1/2"	1835, Dennis, MA	GCR 10-12/1844, WPA 4:130
Hornet	US	schooner	30	49'6"	15'4"	4'9 1/2"	1832, Mathews Cty. VA	GCR 12/1840, WPA 3:100
Independence	US	schooner	125					GCR 7-12/1839
Intrepid	US	schooner	128					GCR 7-12/1841
Isabella	US	schooner	95*					GCR 1-6/1839
James Madison	US	schooner	39					GCR 1-6/1839
James W. Caldwell	US	schooner	54	61'	21'2"	4'1"	1831, Raccoon Creek, NJ	GCR 12/1839 WPA 3:110
Jasper	US	schooner	91	66'	20'7"	7'10"	1834, Steuben, ME	GCR 12/1839, WPA 3:111
John B. Woolfred	US	schooner	80	67'3"	20'6"	6'9"	1836, Dorchester., MD	GCR 1-6/1839, WPA 3:112
John Bartlet	US	brig	104					GCR 1/3/1840
John Bell	US	schooner	71					GCR 1-6/1839
John Hancock	US	brig	137					GCR 12/1840
John McClu*	US	schooner	129					GCR 12/1839
John S. McKim	US	steamboat	244	175'	23'	9'	1844, Alloway, NJ	GCR 5/15/1845, WPA 4:146

ship name	nat.	ship type	tons	length	beam	depth	shipbuilding date/location	reference
Josefinia*	VEN							GCR 8/30/1817
Joseph H. Marsh	US	schooner	159	86'	25'1"	8'6"	1839, Perth Amboy, NJ	GCR 7/1840, WPA 4:149
Josephine	US	schooner						GCR 8/30/1817
Juana	US	brig						GCR 8/30/1817
Kingston	US	steamboat	218	159'	9'	7'8"	1836, Newport, RI	GCR 12/1841, WPA 4:153
Kite	US	schooner	96					GCR 1-6/1839
Kosciusko	US	schooner	30	47'7"	15'4"	4'11"	1835, New Haven, CN	GCR 11-12/1838, WPA 3:116
Kosuisko, Koscusko	US	schooner	122					GCR 1-6/1840
Lady of the Lake	US	schooner	43	57'	15'	4'11"	1830, Dorchester., MD	GCR 12/1839, WPA 3:118
Lafayette	US	schooner	41	50'6"	16'5"	5'11"	1824, Troy, MA	GCR 1-6/1839, WPA 3:119
Lancet	US	brig						GCR 1-6/1840
Laura Virginia	US	schooner	108	76'6"	21'4"	7'7"	1839, Baltimore, MD	GCR 7-12/1839, WPA 4:156
Lenora	US	sloop	18	36'	14'5"	4'6"	1840, Cincinnati, OH	GCR 7/1840, WPA 3:123
Leo	US	steamboat	83	96'	21'	4'6"	1842, Louisiana, MO	GCR 5/15/1845, WPA 4:159
Levant	US	barque	146					GCR 7-12/1839
Leviathan	US	brig						GCR 1
Lewillan (Lewellyn)	US	schooner	55	57'6"	20'3"	5'6"	1841, East Lyme, CN	GCR 1843/1844, WPA 4:160
Lion	US	schooner	99					GCR 1-6/1839
Lone Star	TX	schooner	48	60'2"	20'2"	4'9"	1844, Middleton, CN	GCR 10-12/1844, WPA 4:164
Lore	US	schooner	97					GCR 11-12/1838
Luda	US	schooner	41	51'9"	17'3"	5'6"	1842, Cincinnati, OH	GCR 1843/1844, WPA 4:169
Maria	US	schooner	92					GCR 12/1839, GCR 1
Marida or Masida	US	brig	188					GCR 12/1841
Mark, Mar	US	schooner	80					GCR 1-6/1839
Marshall	US	sloop	70*					GCR 1-6/1839
Martha	US	schooner	30*					GCR 10-12/1844
Mary	US	schooner	48					GCR 12/1839
Mary Ann	US	brig	182	78'	23'7"	11'6"	1827, Middleton, CN	GCR 1-6/1839, WPA 3:139
Mary Claire	US	schooner	50	61'9"	20'8"	4'8"	1830, Baltimore, MD	GCR 1-6/1843, WPA 4:183
Mary Eliza	US	schooner	162					GCR 1/3/1840
Mary Elizabeth	US	brig	169	87'4"	23'5 1/2"	9'4"	1833, Eastport, ME	GCR 1/3/1840, WPA 3:139

ship name	nat.	ship type	tons	length	beam	depth	shipbuilding date/location	reference
Mary Elizabeth	US	schooner	80	67'	20'6"	6'10"	1839, Somerset Cty., MD	GCR 1-6/1843, WPA 4:183
Mary Washington	US	schooner	69	83'4"	22'	6'	1834, Baltimore, MD	GCR 1-6/1839, WPA 4:186
Maryland	US	brig	126	67'	21'9"	10'2 1/2"	1808, Dartmouth, MA	GCR 8/30/1817, WPA/1 90
Maryland	US	steamboat	100	137'	18'	4'3"	1837, Pittsburgh, PA	GCR 7-12/1840, WPA 4:184
Masmona	US	ship	380					GCR 5/15/1845
May (Way)*	US	schooner	20					GCR 11-12/1838
Mentor	US	brig	154					GCR 7-12/1839
Merchant	US	schooner	99	74'2"	21'8"	7'1"	1837, Dorchester., MD	GCR 7/1840, WPA 3:144
Meteor	US	schooner	129					GCR 7/1840
Mexican Congresso	MEX							GCR 7/28/1817
Minambia*	US	schooner	69					GCR 1/3/1840
Minerva or Minera*	US	schooner	89					GCR 12/1840, GCR 6/1841
Mit*	US	schooner	129					GCR 7/1840
Monmouth	US	steamboat	235	156'6"	18'6"	8'4"	1836, Baltimore, MD	GCR 1-6/1842, WPA 4:196
Morning Star	US	schooner	84					GCR 12/1839
Mosquito	MEX							GCR 8/30/1817
Mount Vernon	US	schooner	65	65'	18'2"	6'4"	1815, St. Mary Cty., MD	GCR 8/30/1817, WPA1:95
Musanetive*	US	brig						GCR 8/30/1817
Naiad	US	schooner	24					GCR 1/3/1840
Namakanta, Nahncakanta	US	brig	184					GCR 7-12/1839
Nancy	US	schooner	74*					GCR 12/1841
Nantucket	US	schooner	74	65'10"	20'8"	6'5"	1832, Vassalboro, ME	GCR 7/1840, WPA 3:151
Nautilus	US	schooner	60	54'2"	16'3"	7'10 1/2"	1825, Essex, MA	GCR 12/1839
Navace*	US	schooner	99					GCR 7/1840
Neptune	US	brig	135					GCR 1-6/1842
Neptune	US	schooner	85					GCR 1-6/1842
Neptune	US	steamboat	745	215	25'4"	14'	1836, New York, NY	GCR 1-6/1842, WPA 3:154
Neptune	US	steamship						GCR 1
New Castle	US	steamboat	253	126'	24' 2"	8' 9"	1826, Philadelphia, PA	GCR 1-6/1839, WPA 3:155
New England	US	schooner	92	70'1"	19' 1/2"	7'10"	1831, Freeport, ME	GCR 1/3/1840, WPA 3:155
New York	US	steamship	365	160'6"	22'6"	10'6"	1837, New York, NY	GCR 5/15/1845, WPA 4:207

ship name	nat.	ship type	tons	length	beam	depth	shipbuilding date/location	reference
Nile	US	brig	131					GCR 7-12/1840
Ninitta	US	schooner	128					GCR 1-6/1839
Nomade	FRN	brig						GCR 2
North	US	brig	122					GCR 7-12/1839
North Bound	US	brig	175					GCR 1-6/1843
Nurad or Narad	US	schooner	24					GCR 12/1839
Ocean	US	schooner	75					GCR 7-12/1840
Olive Branch	US	sloop	17					GCR 1-7/1844
Olivia	US	schooner	82					GCR 1-6/1842
Olynthus	US	schooner	77	62'6 1/2"	21'7"	6'10"	1826, Chatham, CN	GCR 1-6/1839, WPA 3:162
Ontario	US	schooner	92					GCR 1-6/1840
Oral	US	schooner	112					GCR 1-6/1839
Orator	US	schooner	88	65'6"	23'	7'1"	1836, Brook Haven, CN	GCR 1-6/1842, WPA 4:216
Orazaba	US	brig	129					GCR 7-12/1839
Oregon	US	schooner	94	68'5"	22'5"	7'3"	1832, Glastonbury, CN	GCR 1-7/1844, WPA 4:216
Oriole	US	schooner	110					GCR 1-6/1839
Ossage	US	brig	179					GCR 1-6/1842
Pacific	US	schooner	97	70'9"	20'	7'10"	1837, Swansea, MA	GCR 12/1840, WPA 3: 167
Pagent	US	schooner	59					GCR 1-7/1844
Palestine	US	brig	111					GCR 1-6/1840
Pallac*	US	brig						GCR 8/30/1817
Panthor	US	sloop	30					GCR 7-12/1841
Patrick Henry	US	steamboat	93					GCR 7-12/1840
Patriot	US	sloop	47					GCR 7-12/1840
Pauline	US	schooner	21					GCR 8/30/1817
Pearl	US	*	59					GCR 11-12/1838
Pelican	US	schooner	100					GCR 7-12/1840
Pioneer	US	brig	128					GCR 7-12/1840
Pioneer	US	schooner	139					GCR 1-6/1843
Pistul?	US	schooner	30					GCR 5/15/1845
Plume	US	sloop	48					GCR 1-6/1839

ship name	nat.	ship type	tons	length	beam	depth	shipbuilding date/location	reference
Poinsett	US	steamboat						GCR 2
Priam	US	schooner	33					GCR 7-12/1839
Pucelle	US	schooner						GCR 8/30/1817
Puerto Rico	US	schooner	137					GCR 7-12/1839
Randolph	US	brig	120					GCR 1/3/1840
Ranger	US	schooner	56					GCR 1-7/1844
Rawland & John	US	schooner	79					GCR 1-6/1839
Reaper	US	brig	130	76'9 1/2"	21'8 1/2"	9'	1820, Baltimore, MD	GCR 1-7/1844, WPA 4:241
Regency	US	brig	116					GCR 5/15/1845
Reinze	US	schooner	108					GCR 1-6/1839
Relanifrago	US	privateer						GCR 11/15/1817
Republic	US	steamboat	262					GCR 5/15/1845
Retrieve	TX	brig	116					GCR 1-6/1842
Richard	US	schooner	55					GCR 1/3/1840
Rio Grande	US	schooner	98					GCR 12/1841
Rival	US	sloop	20					GCR 1-6/1839
Rob Mills	US	schooner	147					GCR 1-6/1842
Robert & James	US	schooner	57					GCR 1-6/1839
Robert Center	US	schooner	69	74'	24'7"	4'10"	1830, Saybrook, CN	GCR 12/1840, WPA 3:182
Robert Mills	US	schooner	98					GCR 7/1840
Rodney	US	schooner	99					GCR 1/3/1840
Rolla	US	schooner	65	60'3"	17'6"	7'2"	1827, Salisbury, MA	GCR 1/3/1840, WPA 3:184
Romp	US	schooner	79					GCR 1/3/1840
Romp	US	schooner	107					GCR 7-12/1839
Rosa	US	schooner						GCR 8/30/1817
Rufus Putnum	US	steamboat	98	127'	16'	4'11"	1835, Mardetta, OH	GCR 11-12/1838, WPA 3:187
Sam Houston	TX	brig	93	75'8"	20'	7'	1836, Eden, ME	GCR 1843/1844, WPA 3:191
Sam Ingham	US	schooner	99					GCR 1-6/1842, GCR 1-6/1843
Santa Anna	US	schooner	36					GCR 11-12/1838
Sapphia*	US	brig	119*					GCR 1-6/1840
Sarah Foyle	TX?	sloop						GCR 2

ship name	nat.	ship type	tons	length	beam	depth	shipbuilding date/location	reference
Savannah	US	steamboat	305					GCR 7-12/1840
Scioto Belle	US	steamboat	95	118'6"	18'	4'8"	1842, Parkersburg, VA	WPA 4:259, GCR 1
Scorpion	TX	schooner	130					GCR 1/3/1840
Sea Serpent	US	schooner	64					GCR 1-6/1841
Seminole	US	schooner	96	71'	21'	7'6"	1838, Dorchester., MD	GCR 1-6/1839, WPA 4:262
Senator	US	brig	193					GCR 1-6/1841
Shakespear	US	schooner	124					GCR 1/3/1840
Shanondoah (Shenandoah)	US	schooner	62	77'	20'	5'6"	1830, Dorchester., MD	GCR 12/1839, WPA 3:197
Signal	US	schooner	97					GCR 1-6/1842
Situate or Scituate	US	schooner	86					GCR 7/1840, GCR 1-6/1842
Skylark	US	schooner	119					GCR 1-6/1839
Spartan	US	steamboat	99					GCR 10-12/1844
St. Patrick	US	brig	140					GCR 12/1841
Star Republic	US	ship	305					GCR 5/15/1845
Tangin or Tonquin	US	schooner	125					GCR 7-12/1840
Texas	US	schooner	9	33'6"	10'7"	3'1"	1839, New Orleans, LA	GCR 1-6/1839, WPA 3:208
Tim Brothers	US	barque?	273					GCR 5/15/1845
Tinsan*	US	brig	130					GCR 12/1839
Tom Bowline*	US	brig						GCR 1/18/1817
Tomochicke (Tomochichi)	US	steamboat	236	150'	28'1"	8'5"	1835, Charleston, SC	GCR 1-6/1841, WPA 3:210
Topic	US	schooner	114					GCR 1-6/1842
Two Sisters	US	schooner	94					GCR 7-12/1839
Uncas	US	schooner	74					GCR 5/15/1845
Union		brig						GCR 1
Van Buren	US	schooner	74					GCR 1-6/1839
Vertice	US	schooner	58					GCR 7-12/1840
Vesta	US	steamboat	35					GCR 7-12/1840
Victoria	US	steamboat	88	123'	16'	4'6"	1837, Brownsville, PA	GCR 12/1841, WPA 4:290
Victory	MEX							GCR 8/30/1817
Vincennes	US	sloop						GCR 2
Viper	TX	schooner	141					GCR 1-6/1839

ship name	nat.	ship type	tons	length	beam	depth	shipbuilding date/location	reference
Virginia	US	brig	129					GCR 1/3/1840
Virginia	US	ship	320					GCR 7/1840
Virtue	US	schooner	58					GCR 1-6/1840
Vista	US	steamboat	35					GCR 12/1840
W. A. Tallman	US	brig	159					GCR 1-6/1839
W. Watson	US	schooner	151					GCR 7/1840
Warrick*	US	schooner	120					GCR 11-12/1838
Warsaw	US	schooner	97					GCR 1-6/1840
Washington	US	sloop	17	37'9"	13'5"	4'2"	1838, Philadelphia, NY	GCR 6/1841, WPA 4:294
Washington	US	sloop	35					GCR 1-6/1843
Water Witch	US	sloop	15					GCR 1-6/1839
Wave	US	schooner	70	70'3"	20'4"	6'5"	1829, Rochester, NY	GCR 1/3/1840, WPA 3:223
Wilder	US	schooner	121					GCR 6/1843-1/1844
William Bryan	US	schooner	96	79'	22'8"	6'	1836, Portland, CN	GCR 10-12/1844, WPA 4:299
William E. Jester	US	schooner	112	74'6"	22'9"	7'9"	1835, Milford, DE	GCR 7/1840, WPA 3:227
William Fury	US	barque	264*					GCR 10-12/1844
William Henry	US	schooner	130	76'4"	20'7 1/2"	9'5"	1836, Nobleboro, ME	GCR 12/1839 WPA 3:228
William J. Watson	US	schooner	151					GCR 7-12/1839
William Penn	US	schooner	75	66'	21'	6'6"	1834, Dorchester., MD	GCR 1-6/1842, WPA 4:301
Yew Tree	US	schooner	30	50'6 1/2"	13'11"	4'10 1/2"	1839, New Albany, IN	GCR 12/1839,WPA 3:230
Yucatan	US	brig	177					GCR 5/15/1845

ABBREVIATIONS

GCR Consulate, *Dispatches from the United States Consuls at Galveston, 1817-1845*, (DeGolyer Library, Southern Methodist University, Dallas; Washington, D. C.: National Archives and Records Services, 1964), microfilm.

GCR 1 Galveston Paper, May 23, 1844 in Consulate, *Dispatches*, vol. 2.

GCR 2 Civilian and Galveston Gazette, June 8, 1844, Consulate, *Dispatches*, vol. 2.

NR Navy Department, Annual Report of the Secretary of the Navy (Whiting's Press, Nov. 1839).

WPA Works Progress Administration, *Ship Registers and Enrollments of New Orleans* (6 vols. N.p., 1942).

COUNTRY ABBREVIATIONS

AUS Austria

GB Britain

MEX Mexico

TX Republic of Texas

US United States

APPENDIX IV
WRECKED VESSELS IN TEXAS, 1815-1845

ship name	nat.	ship type	tons	length	beam	depth	built	date and location of wreck	reference
Angelina		steamboat						1850, near Evadale, Nueces R.	BLK 36
Archer (Galveston, Brazos)	TX	brig	400	110'	28	11	1839-40	Galveston	APP 206, NR, JMD
Ariel	US	steamer	86				1823	1830, San Jacinto River	H 12, Kel 107
Atlantic	US	schooner	87	65'5"	20'6"	7'8"	1833	1842, Galveston	GCR 7-12/1841
Brazoria		schooner						1835, Brazos River	AP 3:66
Brutus	TX	schooner	125	82'	22'	8'	1834	1837, Galveston harbor	WPA 3:30, LP I:260
Canon		schooner						1832, Pass Cavallo	Bex 2, Bex 3
Cardena		schooner						1834, Aransas Pass	LIN 30-31
Ceres		steamboat	50	102'9"	15'3"	3'4"	1833	Sabine River	WPA 3:37
Constitution	US	steamship	262	150'4"	24'2"	7'7"	1839	1838, Matagorda	WPA 3:48
Emeline		schooner	87	74'	22'7"		1826	Galveston	DC 488, WPA 3:71
Flash	TX	schooner						Galveston	J 4:72, D I:95
Flight		brig						1837, Galveston	F 17, N 189-90
General Bustamente	MEX	sloop						1830, Matagorda/Lavaca Bay	Bex 4
Hannah Elizabeth	US	schooner	74	67'10	20'10"	6' 1 3/4"	1829	1835, Pass Cavallo	LP I:275, WPA 3:92
Invincible	TX	schooner	130					1837, Galveston	HG 576 BU 1, DC 483
Lively	MEX	schooner	30					~1822, Galveston	BG 141-2, 148
Maria	US	schooner	92					1844, Mobile to Sabine River	GCR 12:1839, GCR 1
Mary Elizabeth	US	schooner						1842, Galveston	Nan 119, We 118
Meteor	US	schooner	129					1840, Galveston Island	GCR 7/30/1840
Mexico								1835, Brazos Bar	J 3:89
Montezuma (Brazo)	MEX	schooner						1836, mouth of Rio Grande	S 47, DC 652
Ocean		steamboat	177	108'6"	27'2"	6'9"	1834	1836, mouth of Brazoria R.	WPA 3:160, Gar I:143
Opposition	TX	schooner						1839, en route to New Orleans	Lin 13
Orleans		schooner						mouth of Rio Grande R.	H 79
Pelicano de Campeche	MEX	schooner	97					1836, Pass Cavallo	C 22
Pioneer	TX	steamboat						1842, en route to Matagorda	BLK 40
Rufus Putnam		steamer						Sabine R. near Belgrade	BLK 40
Sabine	US	schooner	60	66'6 1/2"	19'	5'5 1/2"	1830	1834, Galveston	C 14, WPA 3:188
San Antonio (Asp)	TEX	schooner	170	66'	21 1/2'	8'	1838	1842, Matagorda to Yucatan	APP 211, JMD
San Croix		schooner						1836, Copano Bay	J :254

ship name	nat.	ship type	tons	length	beam	depth	built	date and location of wreck	reference
San Felipe	TX	schooner						1835, Pass Cavallo	J 2:348, DC 81
Santa Rosa	SPN	galleon						1815, Matagorda Bay	AR 50
Tamaulepas (Tamaulipas)	US	schooner	99	78'	23'	6'5"	1829	1836, Velasco/Brazoria Bar	J 4:285
Tomas Toby (De Kalb)	TEX	schooner	99	80'	21'	8'	1829	1837, Galveston Harbor	WR, BU 2
Transport	US	schooner						1830, mouth of Brazos	Bex 5
Union		brig						1844, Galveston	GCR 1
Unknown								1834, Aransas Pass	AP 3:264-5, GC 10
Unknown								1834, Aransas Pass	LIN 31
Unknown								1818, Copano/Matagorda Bay	Bex 1
Unknown								1817, Matagorda Bay	TY 31
Unknown								1817, Matagorda Bay	TY 31
Unknown								1817, Matagorda Bay	TY 31
Unknown								1817, Matagorda Bay	TY 31
Unknown								1817, Matagorda Bay	TY 31
Unknown								1817, Matagorda Bay	TY 31
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Unknown								1817, Matagorda Bay	TY 31
Unknown								1817, Matagorda Bay	TY 31
Unknown								1817, Matagorda Bay	TY 31
Unknown								1817, Matagorda Bay	TY 31
Unknown	MEX		30					1820s, mouth of Brazos R.	AP 1:735
Unknown								1830, mouth of Brazos R.	HEN 5
Unknown								1830, mouth of Brazos R.	HEN 5
Unknown								1830, mouth of Brazos R.	HEN 5
Unknown								1817, Pass Cavallo	Bex 6
Virginia	US	brig	129					1840, Galveston Bar	GCR 1/3/1840
Wharton (Colorado)	TX	brig	405	110'	28'	11'	1839	Galveston	NR 20, APP 206
Wild Cat	US	schooner	51	60'10"	19'	5'6"	1829	1834, Aransas Pass	LIN 30-31, WPA 3:225
Wisconsin		steamboat	125					Sabine R.	BLK 39

ABBREVIATIONS

- AP 1 Eugene C. Barker, *The Austin Papers*, Annual report of the American Historical Association, 2, no. 1 (1924).
- AP 3 Eugene C. Barker, *The Austin Papers October 1834-January 1837* (Austin, Tex: University of Texas, 1927).
- APP House, Appendix to the Journals of the House of Representatives, 5th Cong. (Evans Library, Texas A&M University, College Station, Tex.; Austin, Tex: Gazette, 1841), microfilm.
- AR J. Barto Arnold, *A Matagorda Bay Magnetometer Survey and Site Test Excavation Project*, Texas Antiquities Committee Publication no. 9 (Austin, Tex, 1982).
- Bex 1 Juan Manuel Zambrano to Antonio Martínez, Oct. 19, 1818, *Béxar Archives*.
- Bex 2 José Mariano Guerra to Antonio Elozúa., May 19, 1832, *Béxar Archives*.
- Bex 3 Mariano Cosío to Antonio Elozúa, May 30, 1832, *Béxar Archives*.
- Bex 4 Antonio Elozúa, June 21, 1830, *Béxar Archives*.
- Bex 5 Manuel Mier y Terán de to Erasmo Seguín, Sept. 3, 1830, *Béxar Archives*.
- Bex 6 Filipe Roque de la Portilla to Joaquin de Arredonde, May 9, 1818, *Béxar Archives*.
- BG Lester G. Bugbee, "What Became of the Lively," *Quarterly of the Texas State Historical Association*, 3, no. 2 (1899) 141-148.
- BLK William T. Block, "A History of Jefferson County, Texas from Wilderness to Reconstruction," (master's thesis, Lamar University 1976).
- BU 1 John Buchanon, "An Expose of the Strength, Disposition, and Employment of the Government Vessels Commissioned for War and Transport," (Columbia: Navy Department, 1836) M. S. Navy Papers, Texas State Library. A copy of the original document from the Dienst Papers, The Center for American History, University of Texas at Austin.

- BU 2 Buchanan, John, "List of Officers Bearing Commissions of Letters of Marque and Reprisal" Navy Dept. (Columbia 1836) M. S. Navy Papers, Texas State Library. A copy of the original document from the Dienst Papers, The Center for American History, University of Texas at Austin.
- C S. W. Cushing, *Adventures in the Texas Navy and at the Battle of San Jacinto* (1857; reprint, Austin, Tex: W. M. Morrison Books, 1985)
- D Alexander Dienst, "The Navy of the Republic of Texas, Part I," *Quarterly of the Texas State Historical Association*, 12 (Jan. 1909), 165-203.
- F Joe B. Frantz, "The Mercantile House of McKinney & Williams, Underwriters of the Texas Revolution," *Bulletin of the Business Historical Society*, 26, vol. 1 (1952), 1 - 18.
- Gar George G. Garrison, *Texan Diplomatic Correspondences* (2 vols. Washington D.C.: Government Printing Office, 1908).
- GC General Council, *Journal of the Proceedings of the General Council of the Republic of Texas* (Houston, Tex: National Intelligencer Office, 1839).
- GCR Consulate, *Dispatches from the United States Consuls at Galveston, 1817-1845*, (DeGolyer Library, Southern Methodist University, Dallas; Washington, D. C.: National Archives and Records Services, 1964), microfilm.
- GCR 1 Galveston Paper, May 23, 1844 in Consulate, *Dispatches from the United States Consuls at Galveston, 1817-1845*, vol. 2 (DeGolyer Library, Southern Methodist University, Dallas; Washington, D. C.: National Archives and Records Services, 1964), microfilm.
- H Dan Hill, *The Texas Navy: in Forgotten Battles and Shirtsleeve Diplomacy* (1937; reprint, Austin, Tex: State House Press, 1987).
- HEN Margaret S. Henson, *Lorenzo de Zavala; The Pragmatic Idealist* (Fort Worth: Texas Christian University Press, 1996).
- HG George F. Haugh (ed.), "History of the Texas Navy," *SHQ*, 63 (April 1960), 572-579.
- J John H. Jenkins (ed.), *The Papers of the Texas Revolution, 1835-1836* (10 vols.

- Austin: Presidial Press, 1973).
- JMD James M. Daniel, *The Ships of the Texas Navy: A List Compiled by James M. Daniel* (San Jacinto: Museum of History Association, 1948).
- Kel Pat Kelly, *River of Lost Dreams; Navigation on the Rio Grande* (Lincoln, Neb: University of Nebraska Press, 1986).
- LIN John J. Linn, *Reminiscences of Fifty Years in Texas* (1883; reprint, Austin, Tex: The Steck Company, 1986).
- LP Charles Adams Gulick Jr. (ed.), *Papers of Mirabeau Buonaparte Lamar*, vol. 5 (1921; reprint, Austin, Tex: A. C. Baldwin and Sons, 1973),
- N Ruth G. Nichols, "Samuel May Williams" *SHQ*, 56, no. 2 (1952), 189-210.
- Nan Joseph M. Nance, *Attack and Counter Attack: the Texas-Mexican Frontier, 1842* (Austin, Tex: University of Texas Press, 1964)
- NR Navy Department, *Annual Report of the Secretary of the Navy* (Whiting's Press, Nov 1839).
- OC William C. Brinkley, *Official Correspondences of the Republic of Texas 1835-1836* (New York: Appleton-Century Co. Inc., 1936).
- S Robert L. Scheina, "The Forgotten Fleet: The Mexican Navy on the Eve of War, 1845," *American Neptune*, 30, no. 1 (1970), 46-55.
- TY Virginia H. Taylor, *The Letters of Antonio Martinez, the Last Spanish Governor of Texas, 1817-1822* (Austin, Tex: Texas State Library, 1957).
- Wel Tom H. Wells, *Commodore More and the Texas Navy* (Austin: University of Texas Press, 1960).
- WPA Works Progress Administration, *Ship Registers and Enrollments of New Orleans* (6 vols., n.p., 1942).
- WR Francis B. Wright, "Examination of Phoenix, Correo and Thomas Toby", M.S. Navy Papers Texas State Library, a copy in the Dienst Papers, Barker Collection, Center for American History, Austin Texas.

APPENDIX V
LIST OF ITEMS AUCTIONED FROM THE WRECK OF *HANNAH ELIZABETH*

Document No. 2²

List of articles claimed by Peter Kerr

100 barrels Flour at \$7.50.....	\$750.00
200 Bales Tobacco, at \$7.....	1400.00
5 Cask Gin at.....	62.00
5 do. Brandy.....	86.00
22 Barrels Whiskey.....	<u>243.00</u>
	\$3.541.00
50 percent on which, (the amount he is to pay is)	<u>1270.50</u>
Amount of sales per auctioneer's acct. and numbered 3.....	2843.83
	\$4114.33

Document No. 3³

Account sales of the Cargo of the wreck of the schooner *Hannah Elizabeth* sold for account of whom it may concern, per order of Captain W. A. Hurd

Josiah Tilley lot of buckets.....	\$2.50
A. Robertson, lot of castings.....	4.00
Dr. Alford, 3 kegs of lard.....	12.00
A. Robertson, 1 set wheels.....	30.00
J. M. Shreve, pd.. 1 set wheels.....	28.00
Ditto ditto ditto... ..	28.00
J. Tillev, 1 set wheels.....	23.50

² William L. Cazneau, Doc. no. 2., Jenkins, *Papers*, 4:217.

Grayson, pd., stove.....	23.00
S.R. Fisher, pd., 1 carriage and harness.....	100.00
J. M. Shreeve, pd., 2 jars crockery.....	21.00
A. B. Fleury, 1 hogshead ditto.....	40.00
F. Desauque, 1 box shoes... ..	22.00
A. Robertson, 1 box tin ware.....	10.00
J. E. Robertson, 1 plough... ..	7.50
Mr. Crookes, 1 lot sundries.....	10.00
D. Decrow, 1 piece rope.....	4.00
J. E. Robertson, 3 boxes wine.....	13.00
A. B. Fleury, 1 box tea, and axes.....	15.50
Ditto 2 iron posts.....	6.00
J. H. Boyce, 1 lot champain.....	30.00
Dr. Alford, 1 bag garlic.....	3.00
M. Morrison, 29 boxes soap.....	26.00
Dr. Johnson, 1 lot cassin.....	2.00
J. M. Shreve, pd., 1 box cheese.....	9.00
Ditto ditto 1 trunk Britannias.....	34.00
Ditto ditto ditto.....	43.00
R. H. Boyce 1 trunk plantillas.....	51.00
A. Robertson, 2 trunks shoes.....	61.00
R. H. Boyce, 1 trunk platillas.....	49.00
T. Stewart, pd., 20 boxes soap.....	40.00
A. B. Fleury, patent balance & saw.....	10.00
R. H. Boyce, 5 boxes chocolate.....	11.50
J. M. Shreve, pd., 1 box dry goods.....	41.00
Capt. Watlington, 1 barrel whiskey.....	14.00
Mr. Desauque 10 barrels sundries.. ..	62.00

³ William L. Cazneau, Doc. No. 3, Jenkins, *Papers*, 4:218-219.

E. Decrow, 7 kegs nails.....	8.00
J. E. Robertson, 3 barrels sundries.....	3.50
Dr. Johnson, 1 box medicines.....	28.00
J. M. Shreve, pd., 1 lot sundries.....	37.00
Mr. Harris, 8 barrels flour.....	59.00
T. Stewart, pd., 15 boxes wine.....	27.50
J. M. Shreve, pd.. 14 boxes tobacco.....	170.00
Mr. Desauque 17 boxes soap.....	12.00
J. M. Shreve, pd., 1 hogshead sundries.....	31.00
J. M. Shreve, pd., 1 lot sundries.....	5.50
Mr. Crookes, 1 lot leather.....	9.50
A. Robertson, 1 box sugar.....	6.50
M.. Shreve, pd.. 1 box dry goods.....	250.00
A. B. Fleury 1 trunk clothing and shoes... ..	70.00
Mr. Sharpe. pd.. 1 trunk boots.....	40.00
R. H. Boyce 1 trunk brogans.....	50.00
Mr. Desauque, 6 bags coffee.....	62.00
Mr. Crooke, 1 box shoes. &c.....	32.50
J. M. Shreve, pd., 1 box dry goods.....	166.00
Ditto ditto ditto.....	175.00
Mr. Desauque, 1 box dry goods.....	270.00
T. Stewart, pd.. 9 barrels flour.....	52.00
Mr. Harris, 1 plough	6.00
Mr. Grayson pd.. 8 barrels flour.....	34.00
Howard & Fleury 1 jar crockery	10.00
Ditto 9 barrels flour.....	4.00
E. Robertson. 1 barrel liquor.....	11.50
Kendrick & Alford, 1 iron pot.....	10.50
J. M. Shreve, pd., I bedstead.....	38.00

Wm.A.Hurd,pd., wreck of vessel and balance of cargo.....	275.00
J. E. Robertson, chance for a drift boat.....	20.00
D.Decrow, chance for guns and cannon.....	<u>5.50</u>
	\$2993.50
Brought forward.....	1993.50
Charges, my commission. 5 per cent, and clerk hire	<u>149.67</u>
	\$2843.83

Errors excepted.

William L. Cazneau, Auc.

Matagorda, December 18, 1835.

APPENDIX VI

CATALOG

The catalog is an all inclusive list of all the artifacts recovered in the survey. The original number of artifact retrieved from the wreck was 78, including 10 non-provenience items.

All the artifacts were encased, to some extent, in concretions. During the process of degradation, the iron corrosion products react to fluctuations in the pH of the water, dissolved calcium carbonate, and dissolved carbon dioxide to form a calcareous covering around the artifact. This covering ranged from between a few millimeters to a few centimeters in thickness. The concretion can form around, and encase, multiple artifacts. The total number of artifacts, following removal from the concretions, and conservation, numbers over 250. This includes over 20 fasteners, 100 shot of varying sizes, over 60 fragments of dunnage, more than 30 pieces of firearm furniture, and 20 firearm fragments.

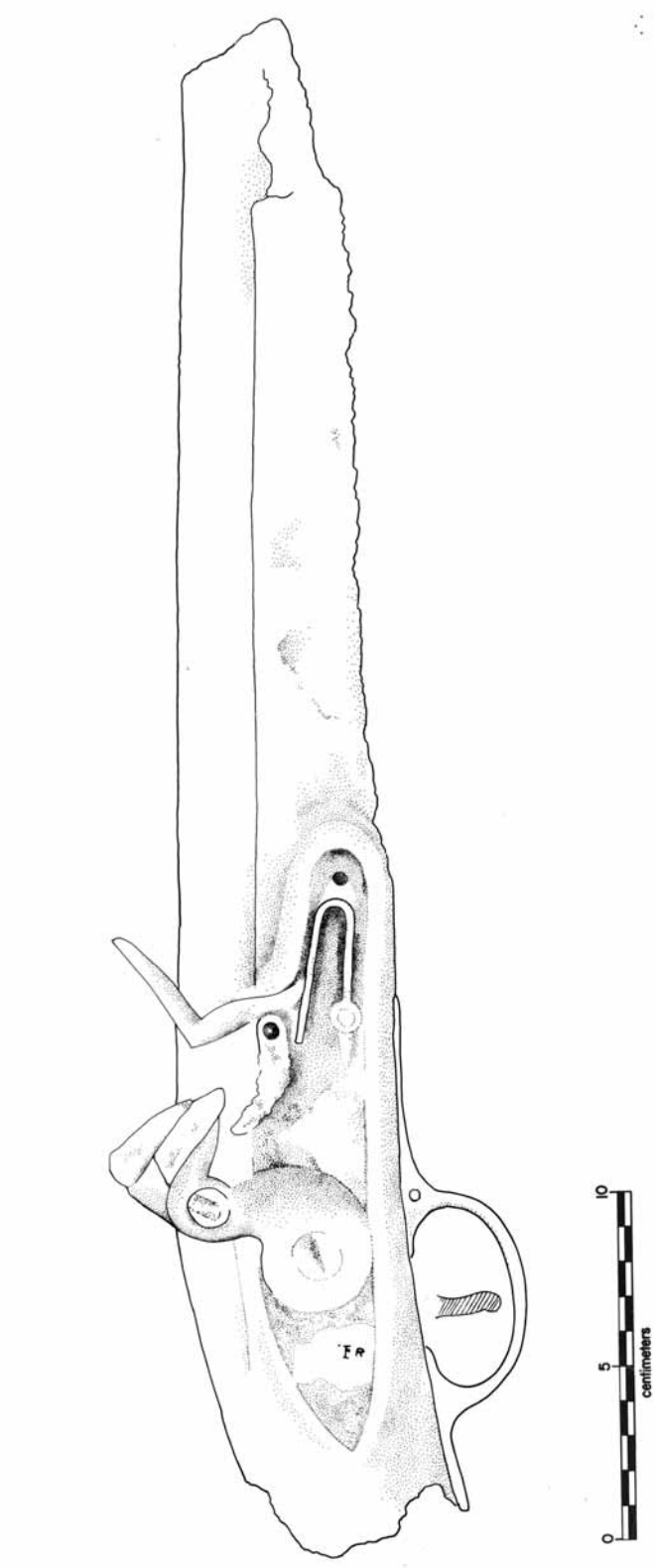
The measurements included in the catalog were, in some cases, taken prior to conservation, and in most cases were rounded to the nearest $1/16^{\text{th}}$ of an inch. All the measurements of the firearms were taken following mechanical cleaning, but prior to disassembly. The condition of the firearm artifacts, due to the fragility of the wood and iron pieces was very poor. The illustrations, therefore, are reconstructions of the arms from in-situ analysis and radiographic evidence. Detailed measurements that are not in the catalog are included in tables 1-3 and 5-6.

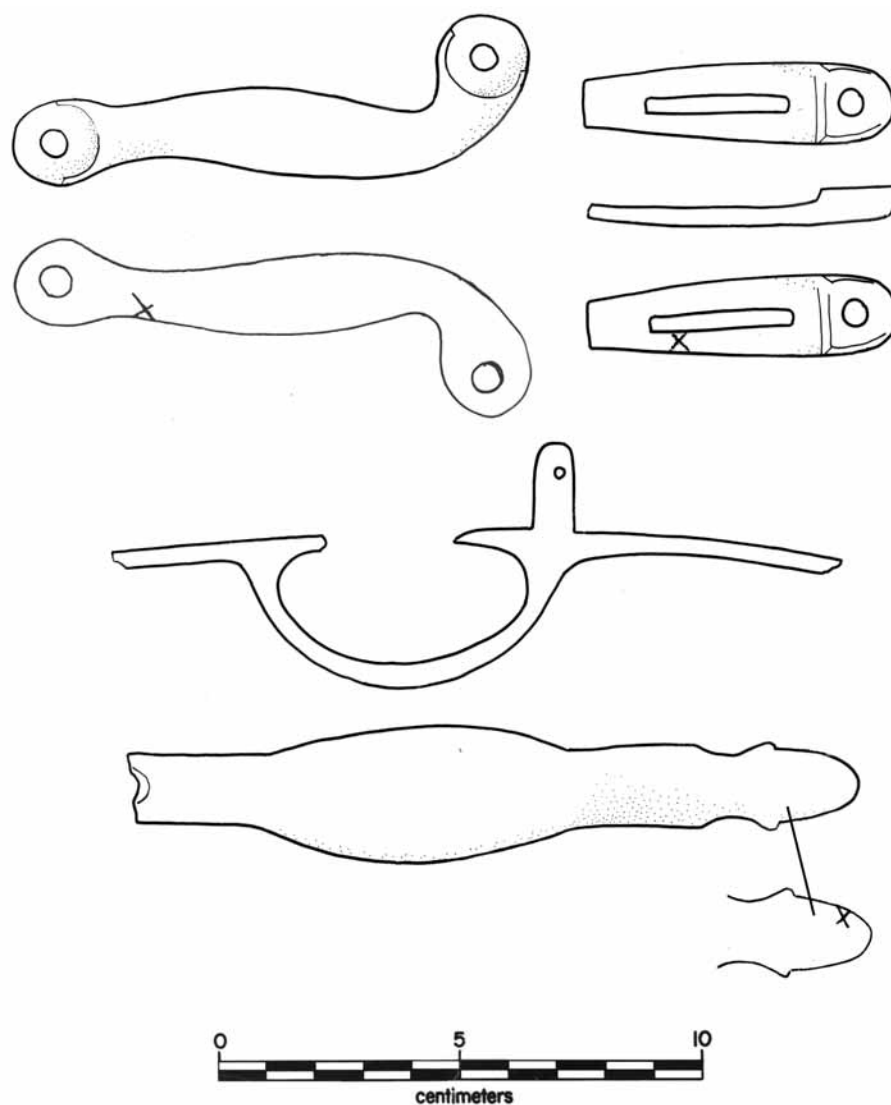
The degradation of the iron, in some cases, was so great that the concreted artifact was no longer extant. In place of the artifact was a mold of the original, including much of the diagnostic detail. An epoxy resin was used to fill this void in

order to create a cast of the original artifact within the concretion. This method of conservation was used to replicate nails, a sling swivel, an eyehook, and parts of the lock mechanisms of various guns. The measurements and illustrations of these artifacts were taken from the epoxy replicas.

The illustrations in the catalog and elsewhere in this thesis were drawn by the author. The author created all photographic and radiographic images used in the conservation, reconstruction, and illustration of artifacts. The Pass Cavallo artifacts were largely conserved by Helen Dewolf, Amy Borgens, and John Hamilton with Donny Hamilton and Helen Dewolf advising.

MUSKET FRAGMENTS





14902

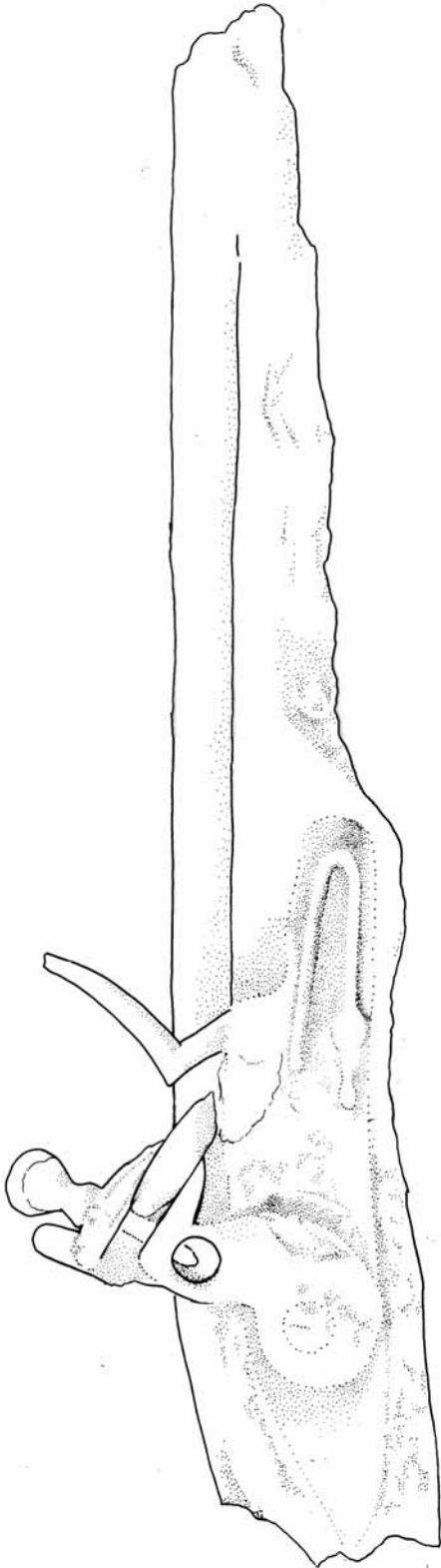
India Pattern Musket Fragment

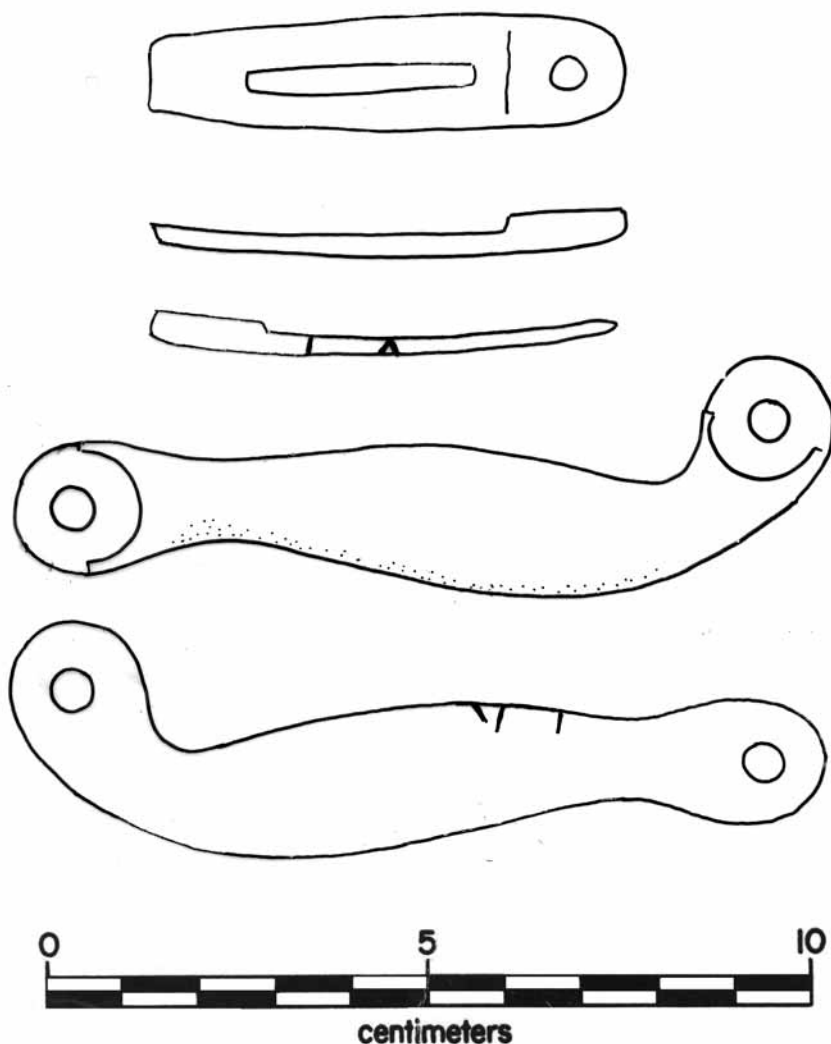
Length: 15 1/3 in (44.50 cm)

Location: 2 m between datums 2 and 3

Condition: poor

Heavy toredo damage to the gun stock. Corrosion of the lockplate is severe, only a partial mark is evident, an ER on the tail of the lockplate. This is part of an engraved TOWER maker's mark. The reinforced throat-hole cock indicates the weapon was manufactured between 1809 and 1815. Brass furniture consists of a sideplate, trigger plate, and trigger guard. All these items are marked with the Roman numeral X, an assembly mark.





14903

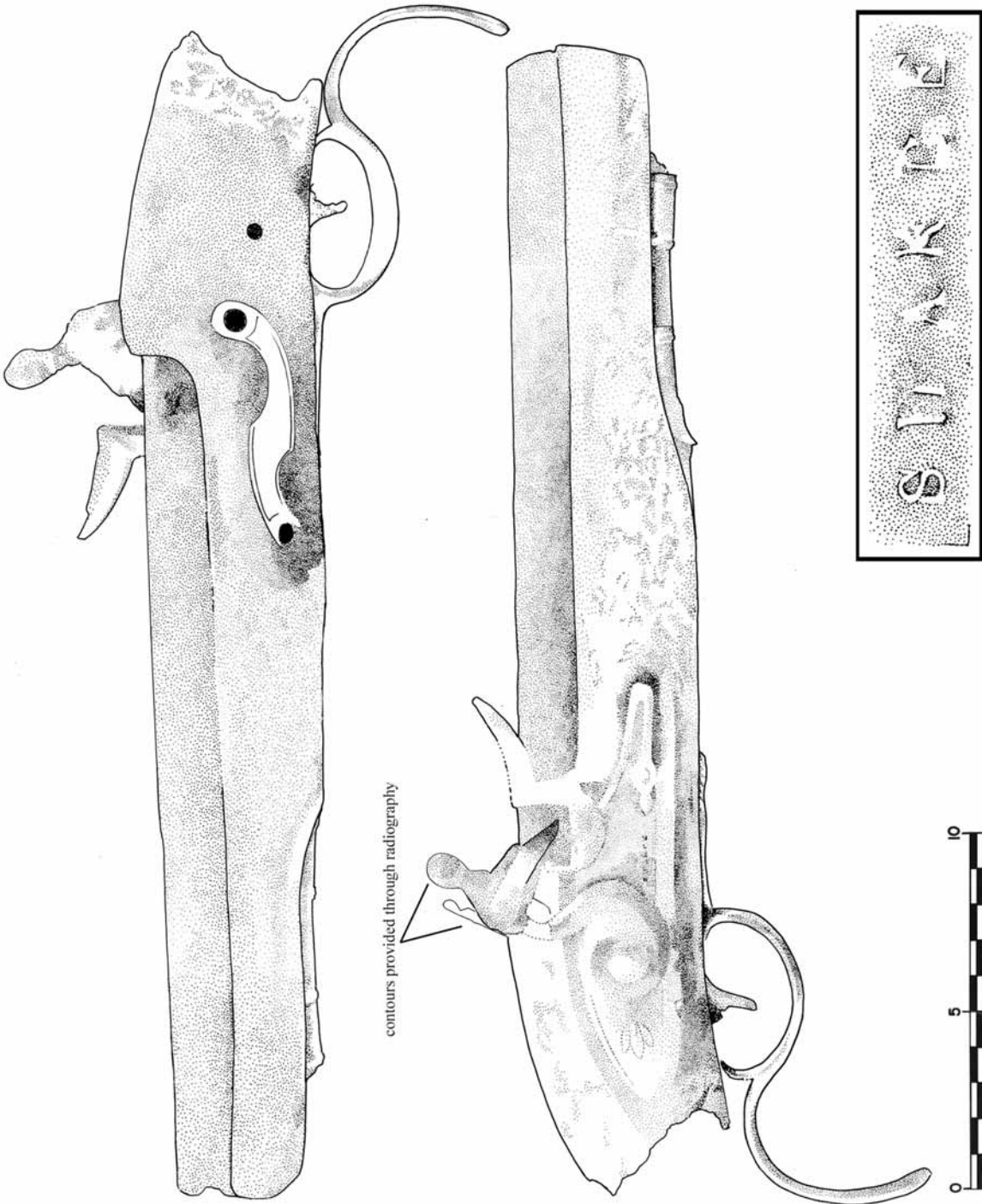
India Pattern Musket Fragment

Length: 14 ¼ in (36.40 cm)

Location: datum 1

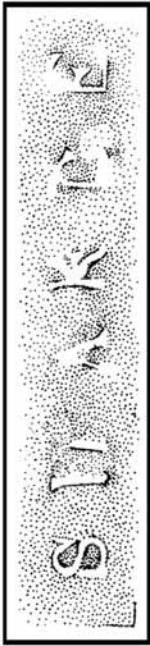
Condition: fair

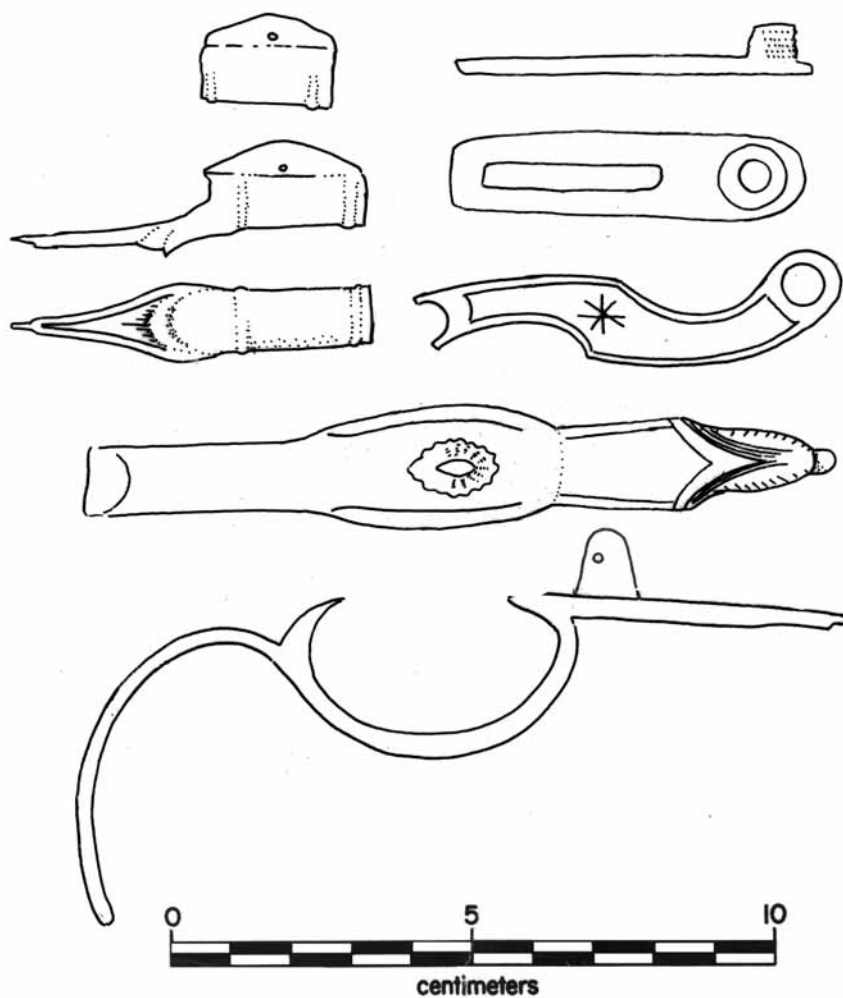
Heavy tored damage to the gun stock. Corrosion of the lockplate is severe; there are no visible lock markings. The reinforced throat-hole cock indicates the weapon was manufactured after 1809. Brass furniture consists of a sideplate and trigger plate. Both are marked with the Roman numeral VI, which are workshop assembly marks. The diameter of the barrel, at the broken tip, is 1 ⅛ in (2.78 cm). There is a barrel lug brazing piece attached to the underside of the barrel. It measures ⅝ x 7/16 in (1.54 x 1.08).



contours provided through radiography

0 5 10
centimeters





14946

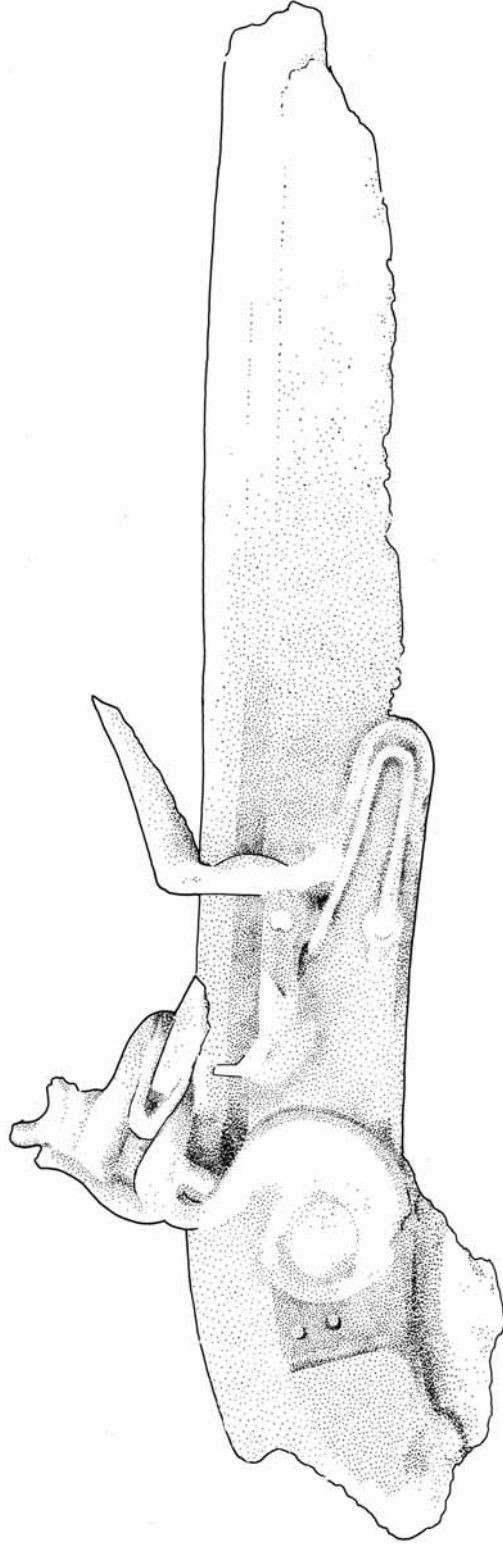
British Pistol Fragment

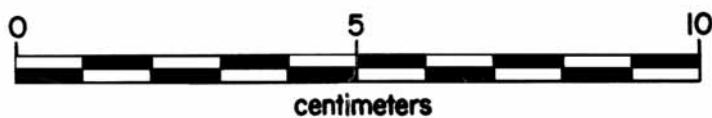
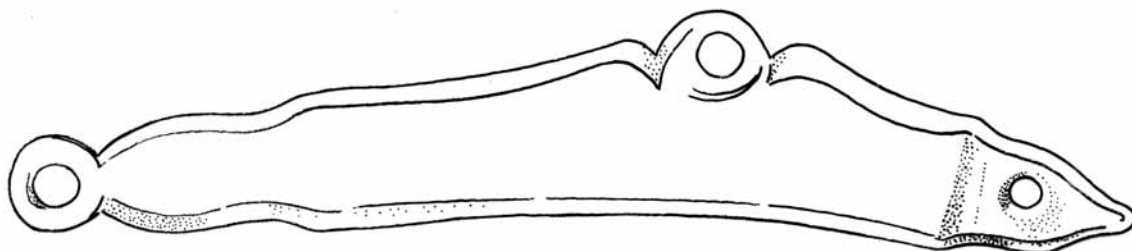
Length: 13 3/16 in (33.50 cm)

Location: no provenience, recovered in 1st survey

Condition: fair

The wood stock and butt cap at the end of the pistol are not extant. The brass furniture includes a trigger guard, trigger plate, sideplate, tailpipe, and first pipe. The forepipe, trigger guard, and sideplate are decoratively engraved. The ramrod is wood. An iron belt-hook was fitted over the sideplate. The pistol was stored in a fabric bag, hand-made from at least two fabric types; one plain and one pinstriped. The lock is engraved with a 'tulip' design on the tail of the lockplate; this is a mark of the Ketland Company. A maker's mark, 'SHARPE' is stamped on the lockplate, under the flash pan. A ramrod worm is fitted to the ramrod.





14947

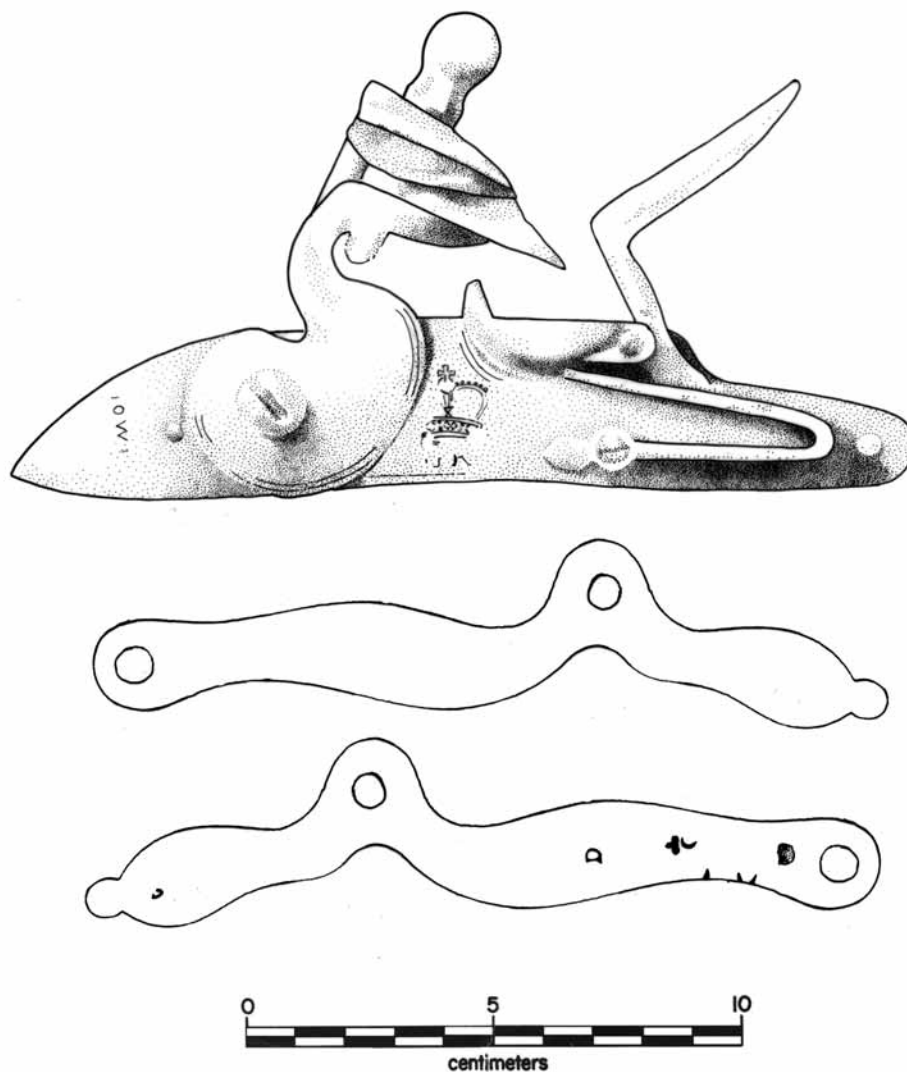
Spanish 1757 Model Musket Fragment

Length: 15 ⅓ in (36.40 cm)

Location: no provenience, recovered in 1st survey

Condition: poor

Musket fragment has severe toredo damage to the wood stock. The lock has a ring style jaw screw. Furniture items include a brass sideplate and evidence of an iron trigger plate. There are no marks on the lockplate. A single, partial mark is stamped on the top barrel face, near the flash pan.



14982

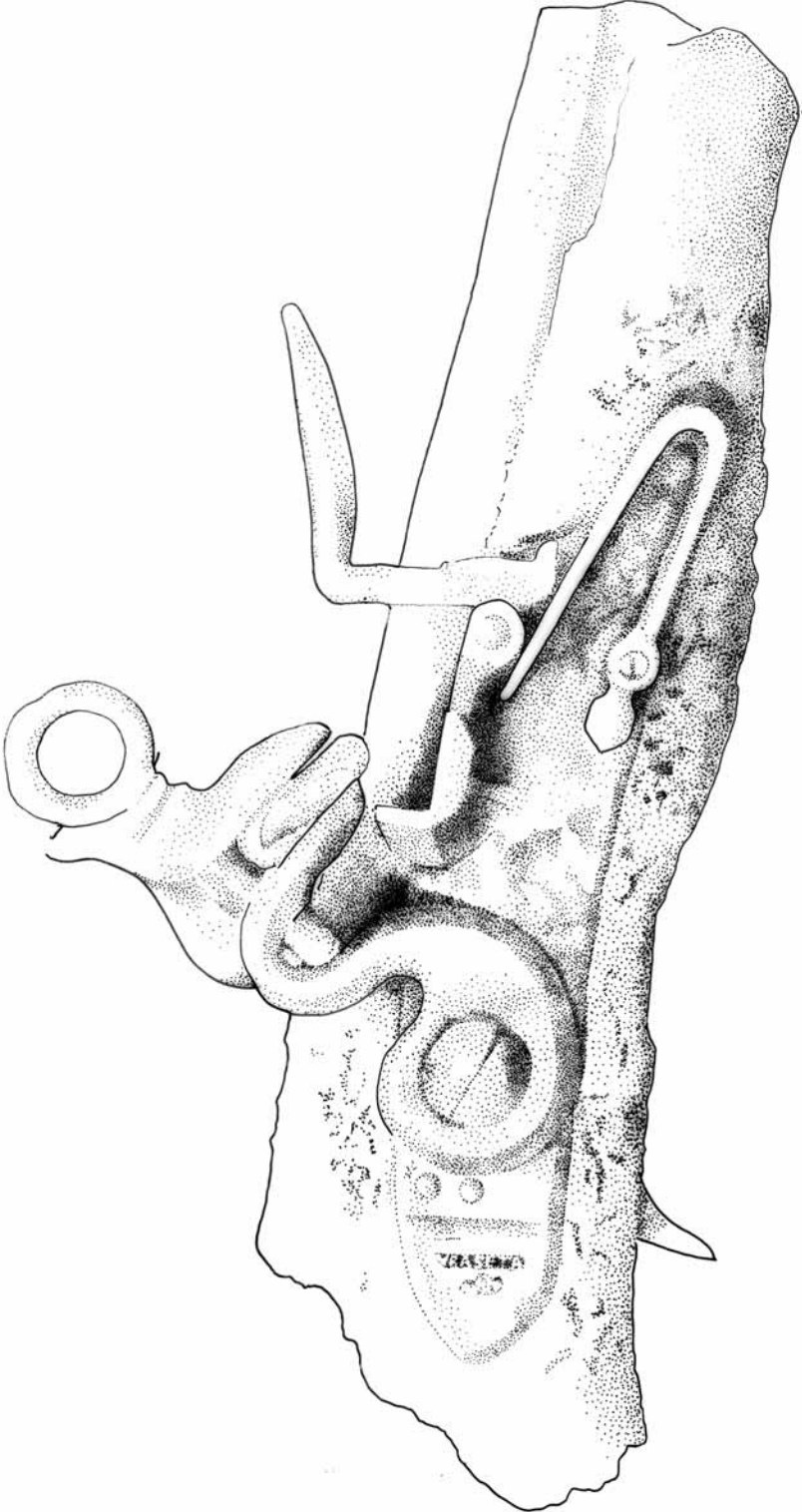
Short Land Musket Fragment

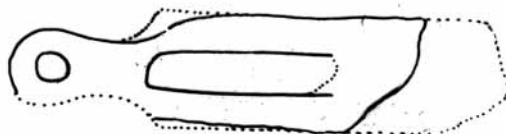
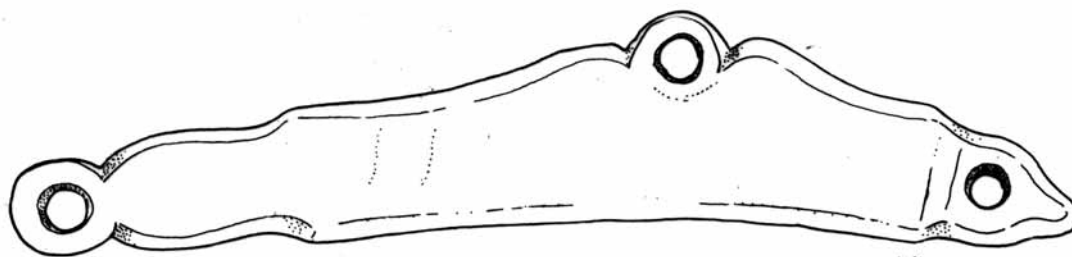
Length: 7 in (17.76 cm)

Location: midway between datums 1 and 3

Condition: good

Fragment consists solely of the lock as it is fastened into the sideplate. There is no remaining wood stock. The double-bridled lock is stamped with a still partially discernible 'TOWER' mark. Only the 'OWE' are now visible. Under the flash pan is etched crown over GR. The brass sideplate has a flat surface, a feature introduced in 1769. The interior surface of the sideplate is stamped with an indiscernible symbol, a D, and crown over a C.





14986

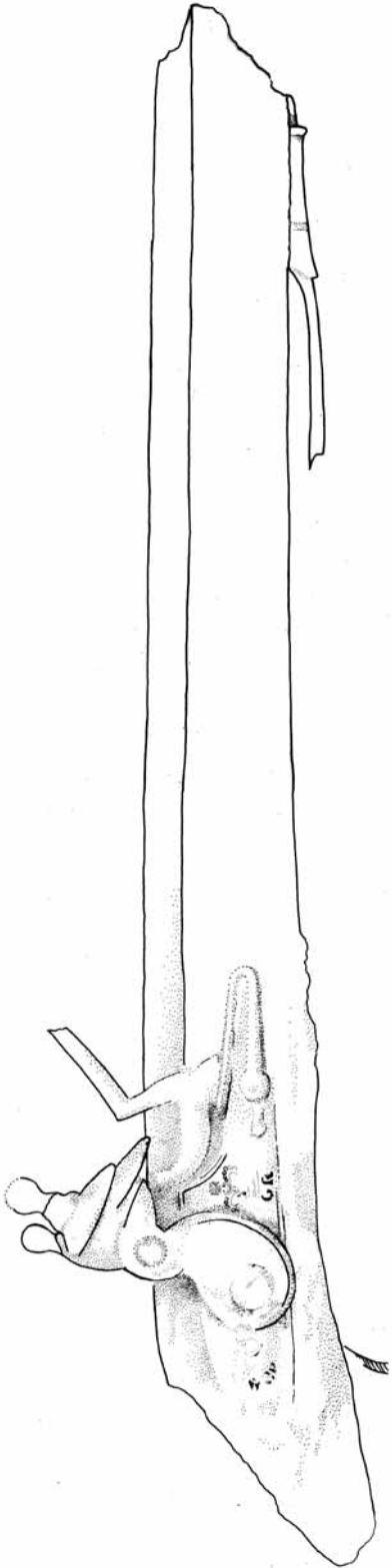
Spanish 1757 Model Musket Fragment

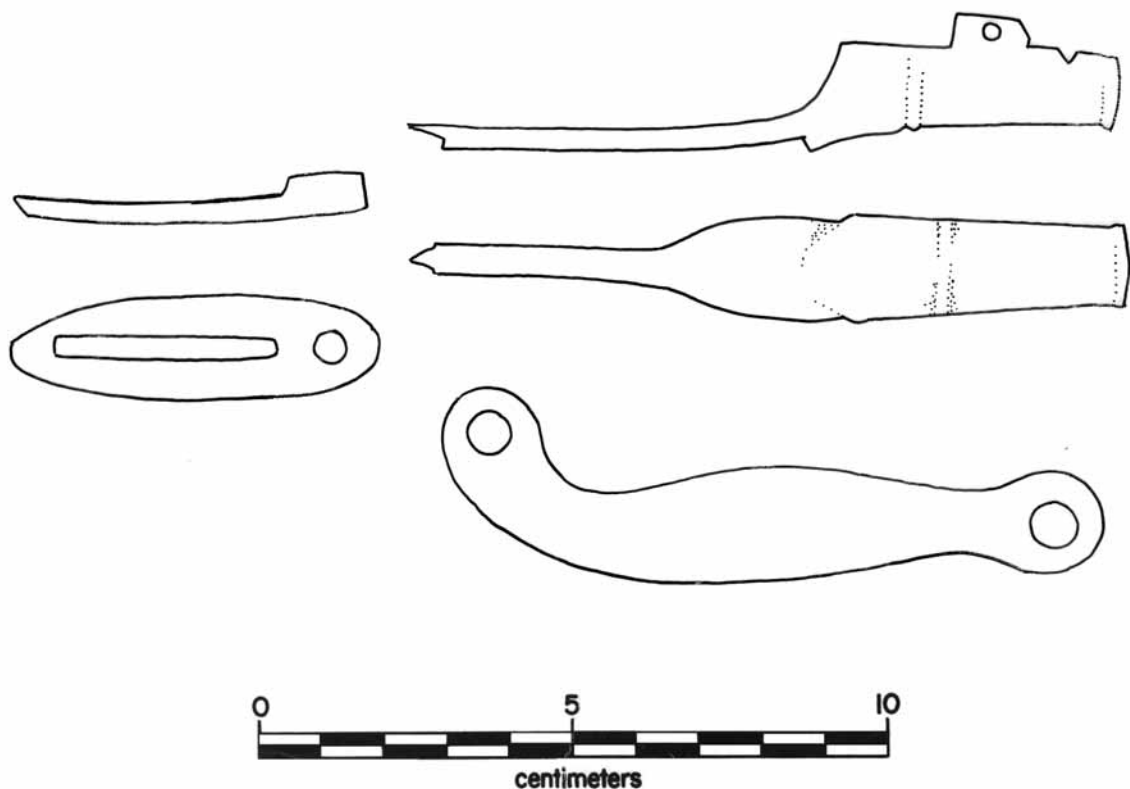
Length: 10 $\frac{1}{8}$ in (25.70 cm)

Location: datum 1

Condition: fair.

The wood stock is severely toredo damaged. The surfaces of the lock are in good condition. A maker's mark, YBASETA, is stamped within a rectangular cartouche on the tail of the lockplate. Neighboring this mark, to its left, is an unidentifiable shape or symbol. The lock has a ring style jaw screw. Furniture items include a brass sideplate and evidence of an iron trigger plate.





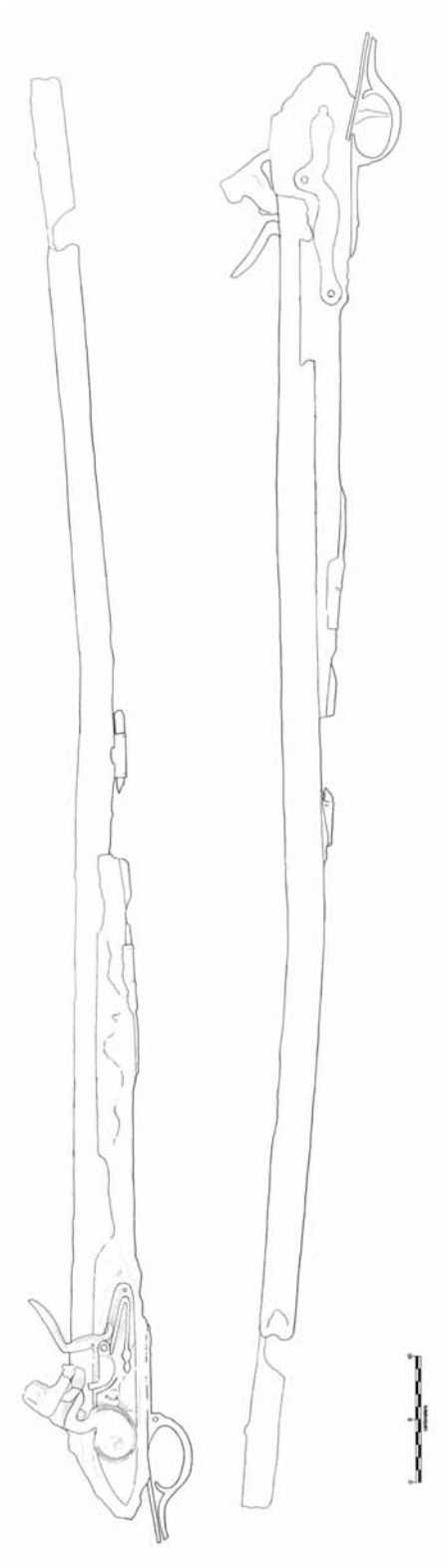
14988 India Pattern Musket Fragment

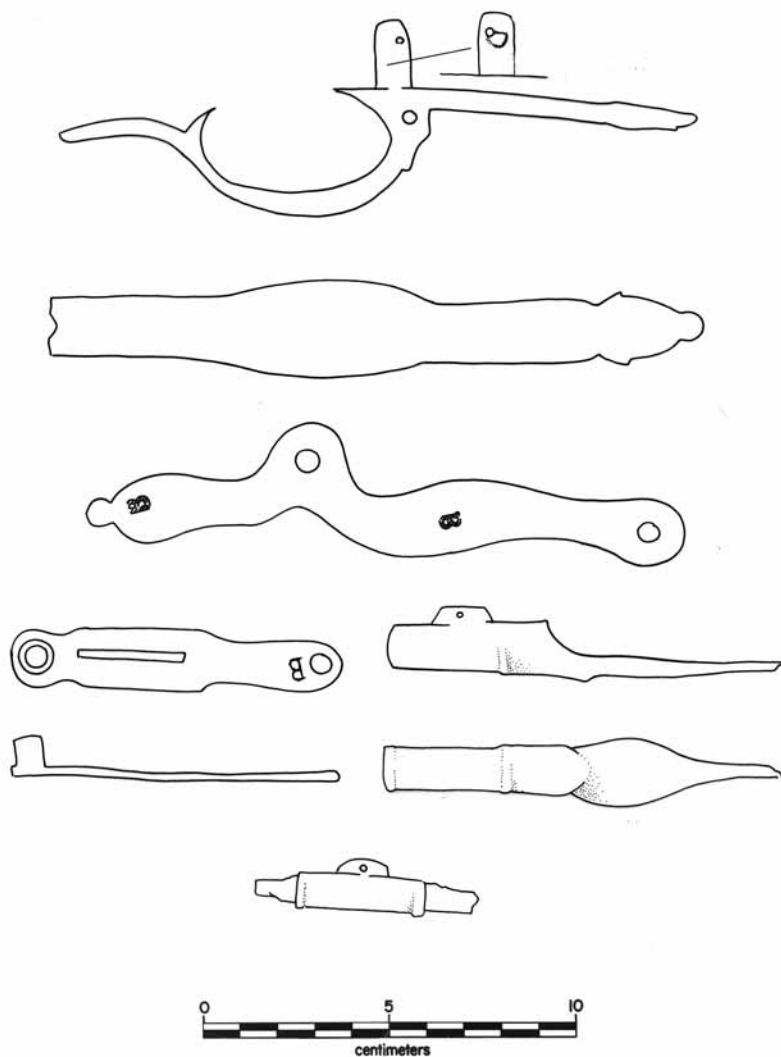
Length: 20 1/3 in (48.30 cm)

Location: datum 1

Condition: poor

The wood gunstock has severe toredo damage. The lock is double-bridled with a reinforced throat-hole cock. Furniture items include a brass sideplate, trigger plate, and tailpipe. The lockplate is marked with a 'WER', remains of a 'TOWER' mark. There is a single line engraving on the cock body and a double line engraving on the lockplate, under the pan. An etched crown and 'GR' are on the lockplate, under the pan. The reinforced throat-hole indicates that the musket was manufactured after 1809.





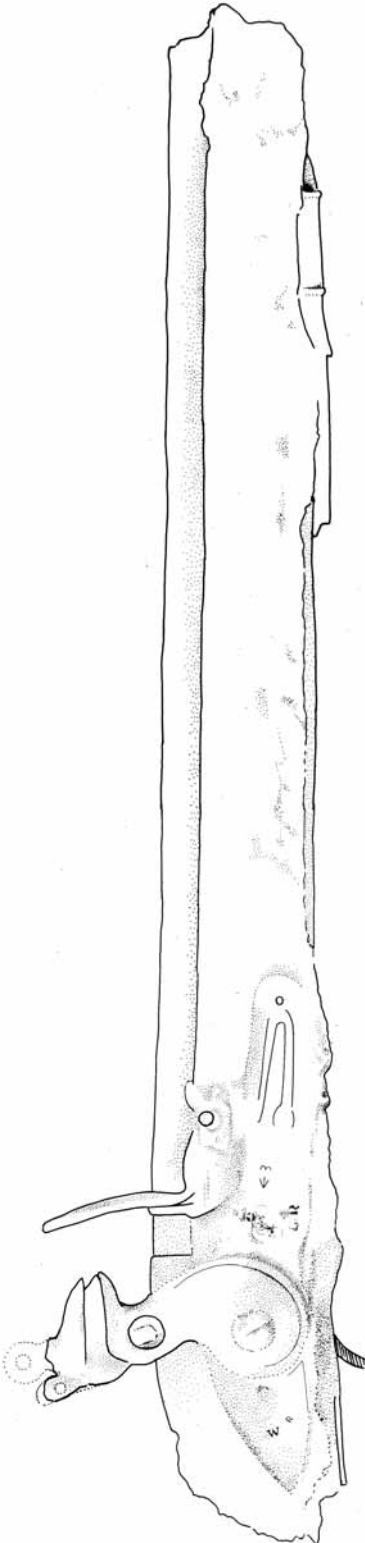
14989 Short Land Pattern Musket Fragment

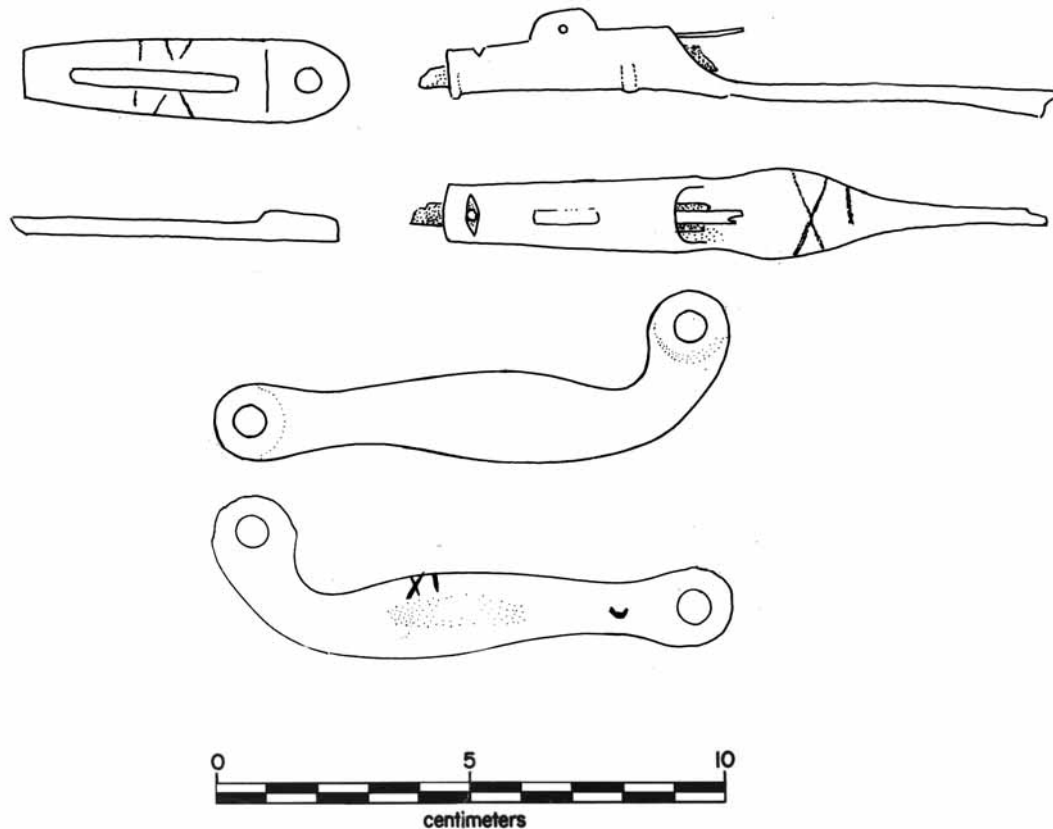
Length: 46 5/16 in (104.91 cm)

Location: datum 1

Condition: poor

This is the most complete musket fragment. There is severe toredo damage of the wood stock. A majority of the barrel has no affixed wood stock. The lock is double-bridled with a swan-neck cock. The surface of the lockplate, centrally located under the pan, is an etched crown over 'GR'. There is a double line engraving on the body of the cock. The brass furniture includes a broken trigger guard, trigger plate, rounded sideplate, tail pipe and 1st pipe. The ramrod is iron. The interior surfaces of the sideplate and trigger plate are stamped with the letter 'B'.





14995

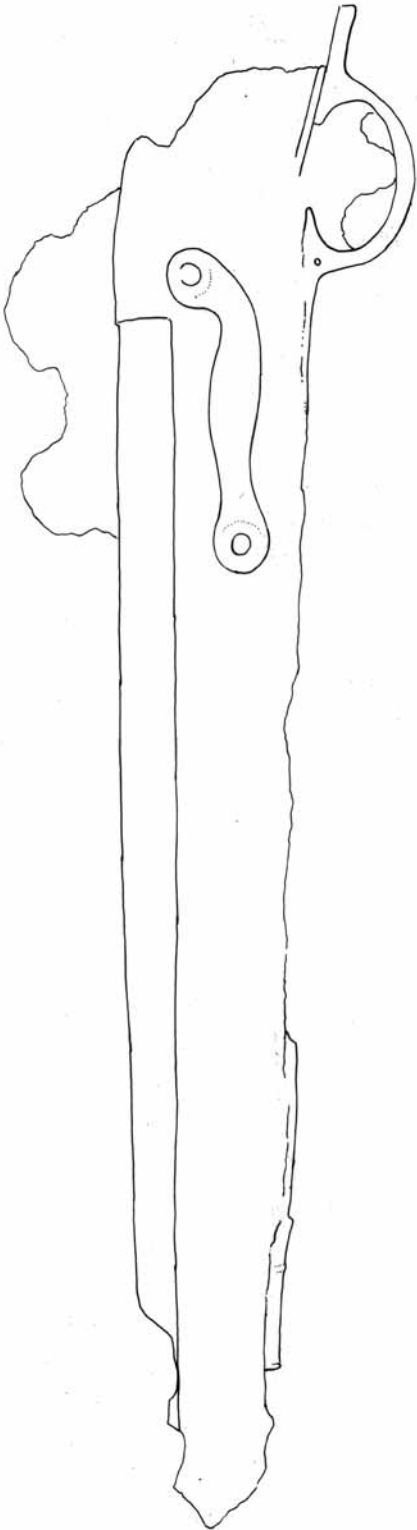
India Pattern Musket Fragment

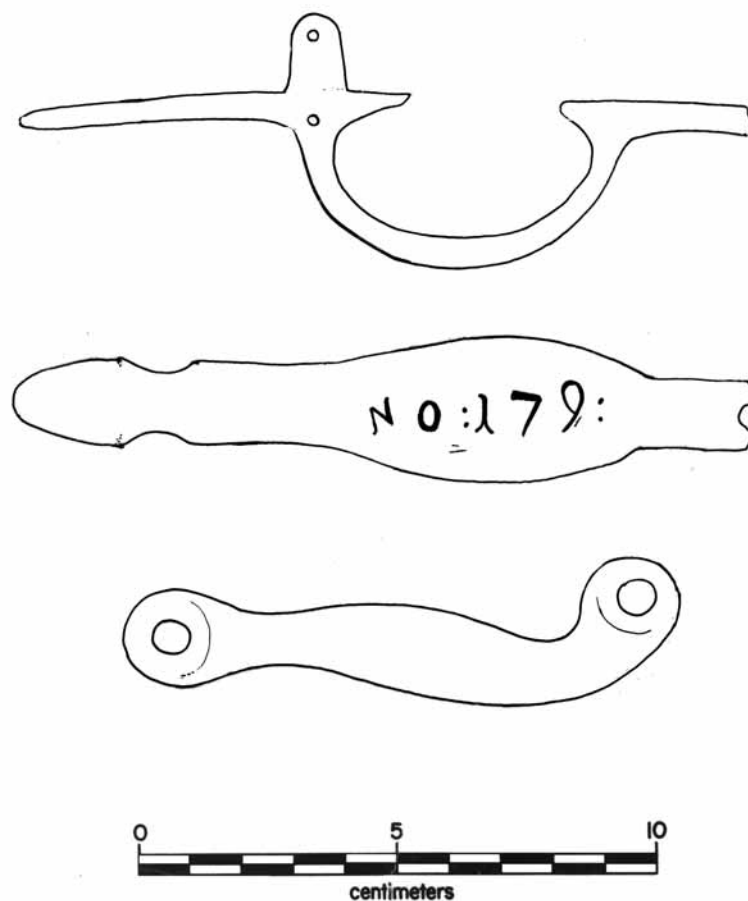
Length: 20 4/5 in (53.00 cm)

Location: datum 1

Condition: poor

The gun stock has severe toredo damage. The double-bridled lock has a reinforced throat-hole cock. The lock has severe surface corrosion, but some marks are partially discernible. The lockplate is stamped on the tail with a 'W' and 'R', a remnant of what was once a "TOWER" mark. Under the flash pan is an etched crown over a 'GR'. To the right of the crown is a broad arrow next to a small stylized crown. Single line engraving is evident on the cock body and the tail of the lockplate. Brass furniture includes a sideplate, trigger plate, and fore pipe. All three items are marked with the Roman Numeral XI. The inside of the sideplate also is marked with the letter 'C'. The ramrod is of iron.





14996

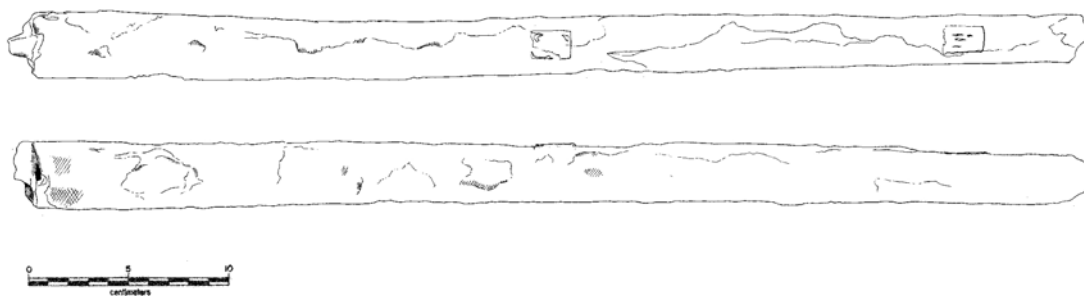
India Pattern Musket Fragment

Length: 19 ⁵/₈ in (24.45 cm)

Location: datum 2

Condition: poor

The wood stock has severe toredo damage. The double-bridled lock has a reinforced throat-hole cock, indicating it was manufactured after 1809. Brass furniture includes the sideplate, trigger plate, trigger guard, and tailpipe. The trigger guard is stamped on the bow with 'NO:179:'. The artifact is not completely mechanically cleaned, much of the lock is still obscured.

BARREL FRAGMENTS**14947-2****Barrel Fragment**

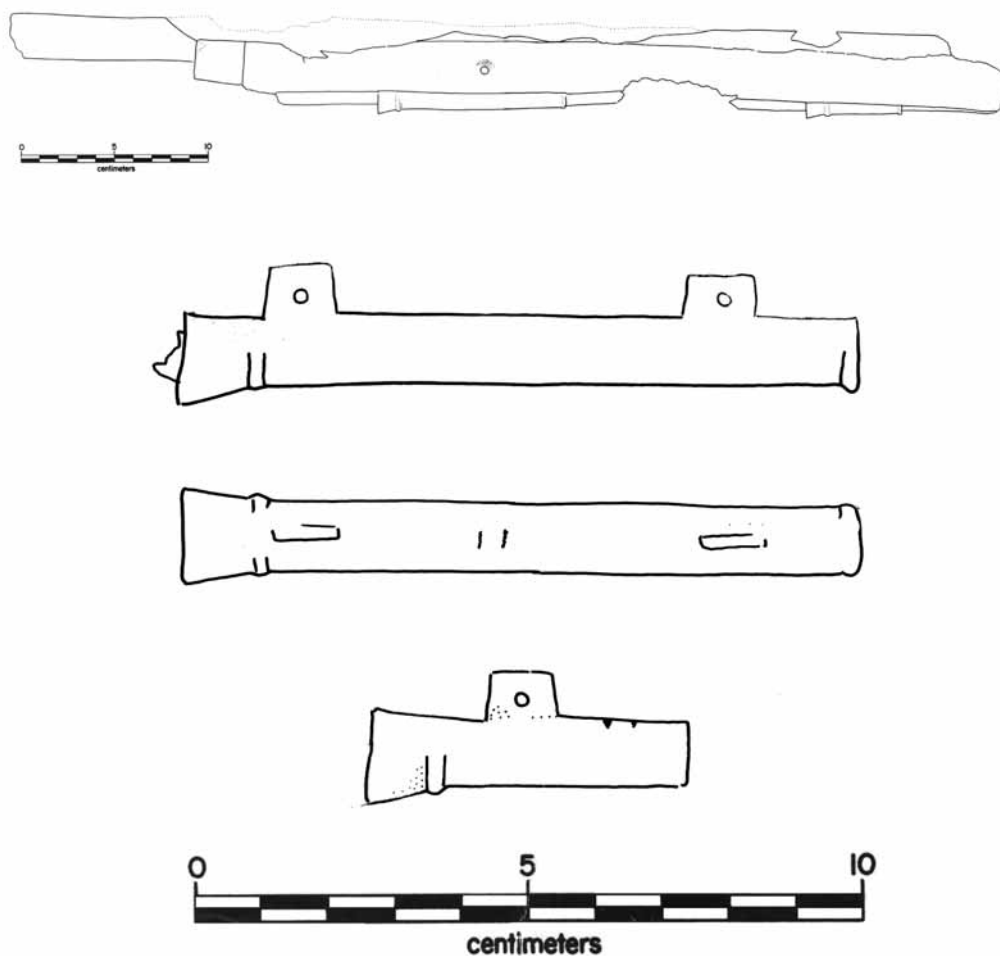
Length: 19 ¼ in (49.00 cm)

Diameter: (3.25 cm), breech

Location: no provenience, recovered in 1st survey

Condition: poor

No outer surface remains. Two cupreous brazing pieces are on the underside of the barrel surface. These measure 9/16 x 13/16 in (1.28 x 1.91 cm) and ½ x 7/8 in (1.24 x 2.05 cm).



14988-2

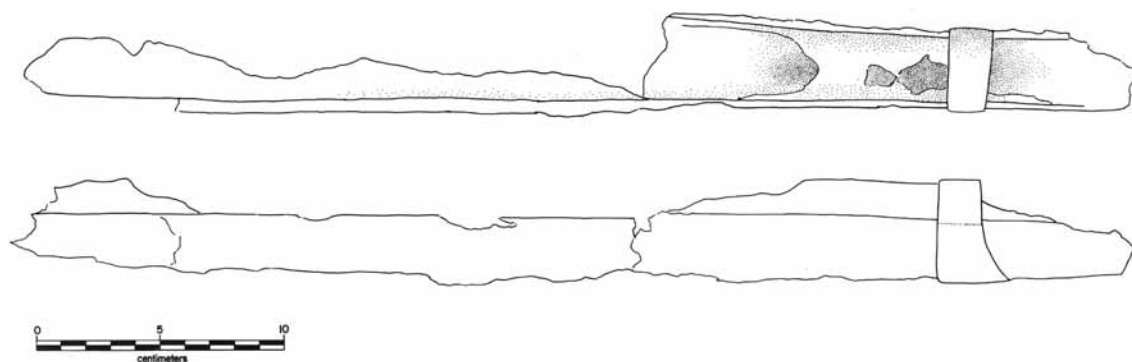
India Pattern Barrel Fragment

Length: 21 ¼ in (53.70 cm)

Location: datum 1

Condition: poor

Barrel fragment has mild toredo damage. Brass furniture includes an Pratt pipe and forepipe. The forepipe is 4 1/16 in (9.99 cm) in length with a diameter of 7/16 in. The diameter of the funnel shaped mouth is 9/16 in (1.49 cm). The Pratt pipe measures 1 15/16 in (4.85 cm) in length. The diameter of the funnel mouth is 9/16 in (1.42 cm). Both pipes have two file cuts; the Roman numeral mark II, a workshop assembly mark.



14988-3

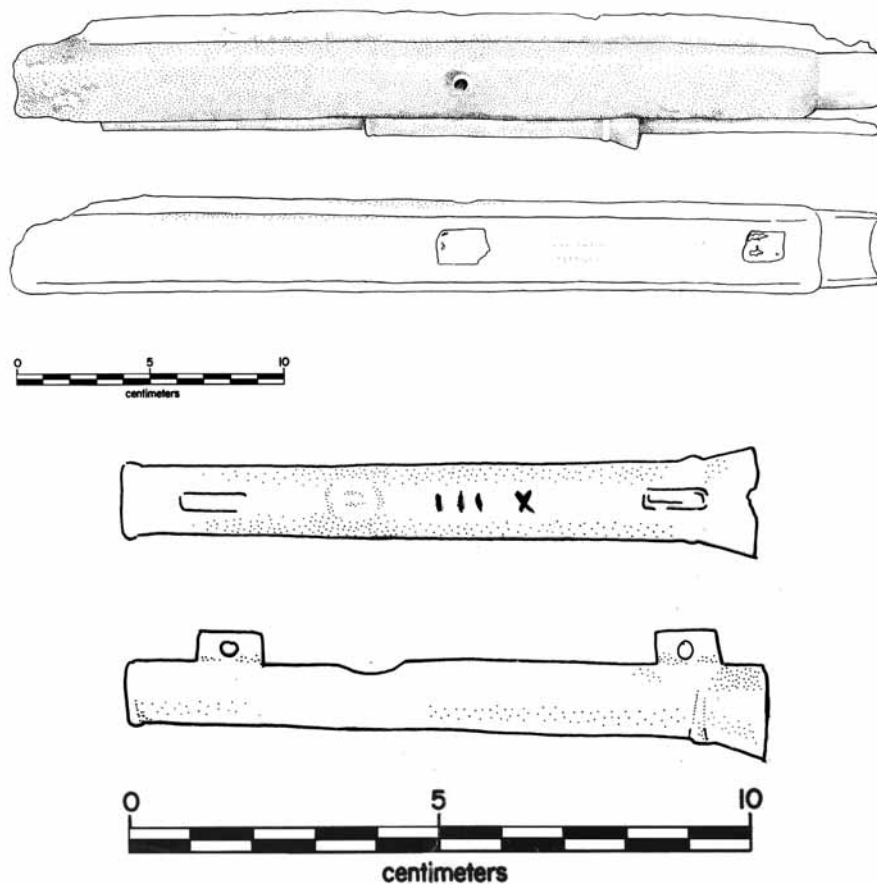
Spanish Barrel Fragment

Length: 17 7/10 in (44.90 cm)

Location: datum 1

Condition: poor

Barrel fragment includes brass barrel band. The barrel band has a height of 1 11/16 in (4.27 cm). The width, of the band across the stock, is 1 3/8 in (3.51 cm). The diameter of the barrel, just in front of the barrel band, is 1 1/16 in (2.67 cm). The condition of the barrel is incredibly poor. The piece is broken into two fragments and there is almost no remaining barrel. No marks are evident on the firearm.



14992-2

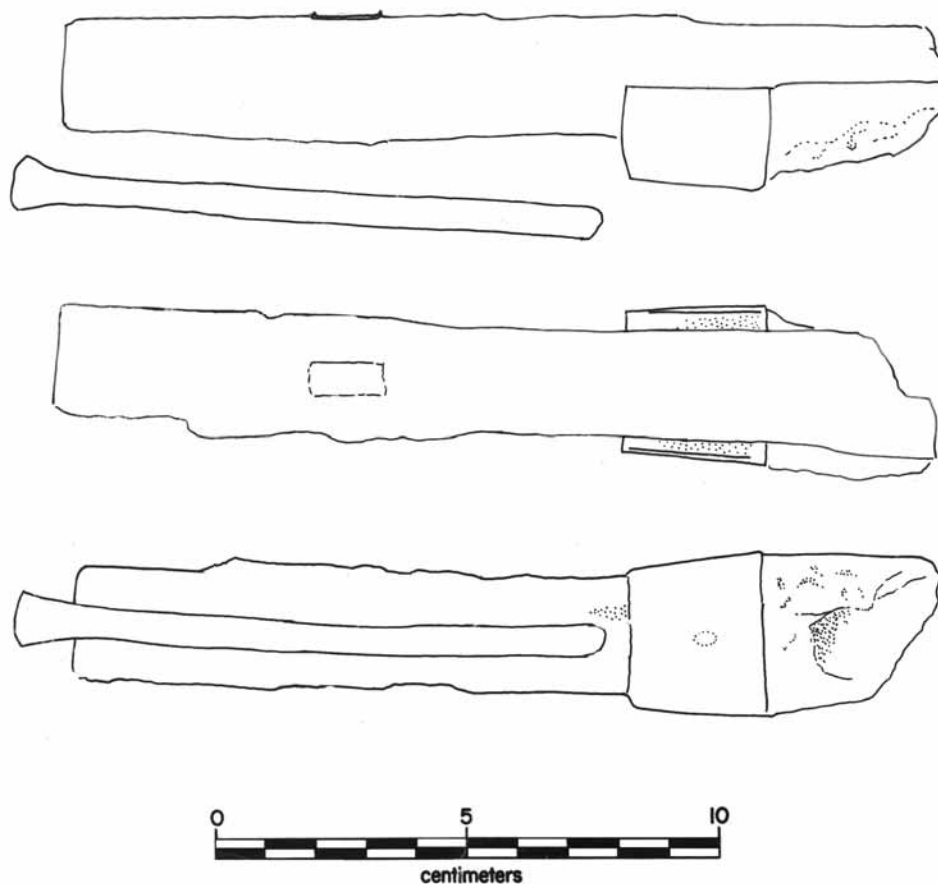
India Pattern Barrel Fragment

Length: 12 $\frac{7}{8}$ in (32.70 cm)

Location: datum 6

Condition: fair

Barrel fragment consists of wood gunstock, barrel, nosecap, forepipe, and ramrod. Inside of the wood gunstock (pictured) has two copper brazing pieces used to affix the lugs to the barrel. The length of the forepipe is 4 $\frac{1}{16}$ in (10.29 cm). The diameter of the forepipe is $\frac{7}{16}$ in (1.07 cm). The forepipe is marked with the Roman numeral XIII. The ramrod channel is marked XI. The width of the stock, at the attachment hole for the sling swivel, is 1 $\frac{5}{16}$ (3.37 cm). Part of the sling swivel was still evident during initial cleaning; the diameter of the wire was approximately $\frac{1}{8}$ in (.40 cm). The nosecap measures 1 $\frac{1}{8}$ x $\frac{7}{8}$ in (3.00 x 2.40 cm). The distance from the tip of the forepipe to the end of the nosecap is 3 $\frac{5}{8}$ in (9.15 cm). The barrel diameter is approximately $\frac{15}{16}$ in (2.38 cm).



14992-3

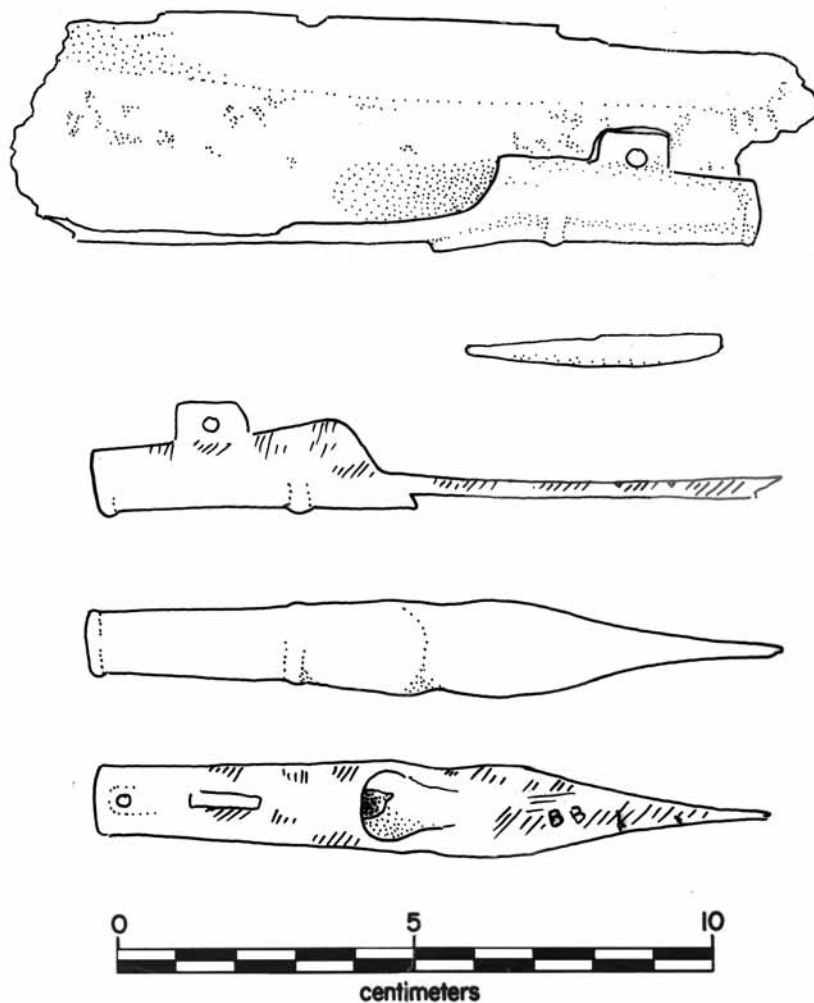
British Barrel Fragment

Length: $7 \frac{1}{8}$ in (18.50 cm)

Location: datum 6

Condition: poor

The fragment consists of a barrel, ramrod, nosecap, and wood stock. The diameter of the barrel at the muzzle is approximately $\frac{7}{8}$ in (2.15 cm). The ramrod has a diameter of $\frac{1}{4}$ in (.62 cm) and extends $\frac{7}{16}$ in (1.10 cm) past the muzzle of the barrel. The diameter of the ramrod widens to $\frac{7}{16}$ in (1.05 cm) at the tip. The nosecap is of cast brass and measures approximately $1 \frac{1}{16}$ x $1 \frac{3}{16}$ in (2.68 x 3.00 cm). The barrel extends $4 \frac{5}{16}$ (11.00 cm) past the nosecap. A copper or brass plate is affixed to the barrel at the muzzle as a brazing for the site/bayonet stud. The plate measures approximately $\frac{7}{16}$ x $\frac{1}{4}$ in (1.15 x .68 cm) and is located $1 \frac{15}{16}$ in (4.93 cm) from the tip of the muzzle. The tip of the neighboring barrel, 14992-6, was spaced $\frac{5}{16}$ in (.90 cm) from the gun stock, to the area adjacent the wood stock/nosecap juncture.



14992-4

British Barrel Fragment

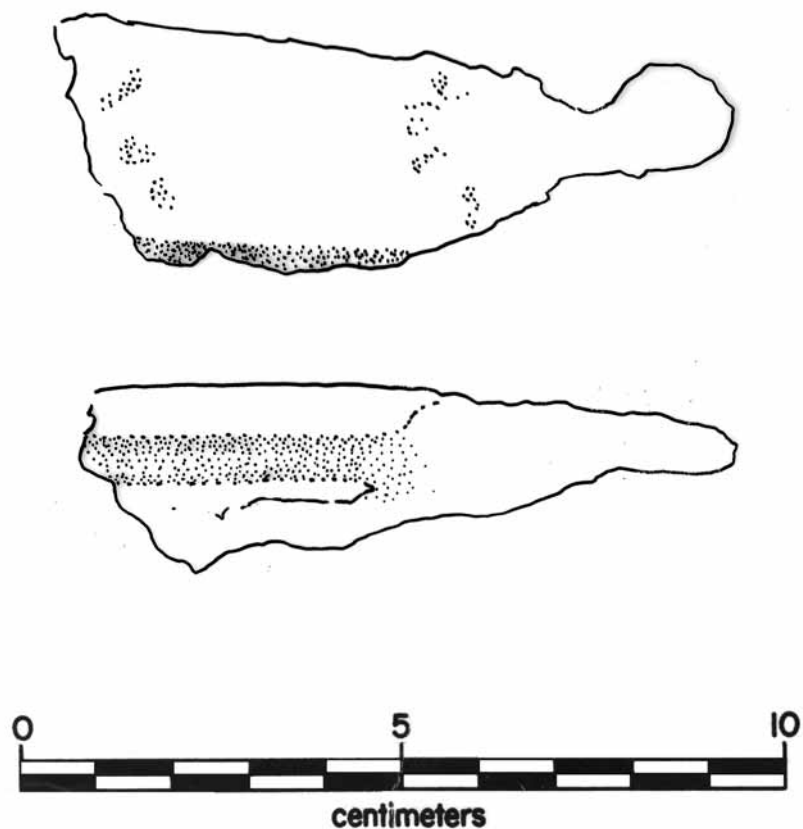
Length: 5 $\frac{5}{8}$ in (14.22 cm)

Width: 1 $\frac{1}{2}$ in (3.73 cm)

Location: datum 6

Condition: poor

Barrel fragment with tailpipe and ramrod. The tailpipe is 4 $\frac{1}{2}$ in (11.53 cm) long. The diameter of the mouth is $\frac{1}{2}$ in (1.11 cm). There are two file cuts, assembly marks, on the tail of the tailpipe. The interior surface of the tailpipe is stamped 'BB'. The diameter of the barrel, as measured from the impression in the concretion, is 1 inch (2.67 cm). The ramrod is 1 $\frac{11}{16}$ (4.34 cm) long and has a diameter of $\frac{3}{16}$ in (.50 cm).

**14992-5****Barrel Fragment**

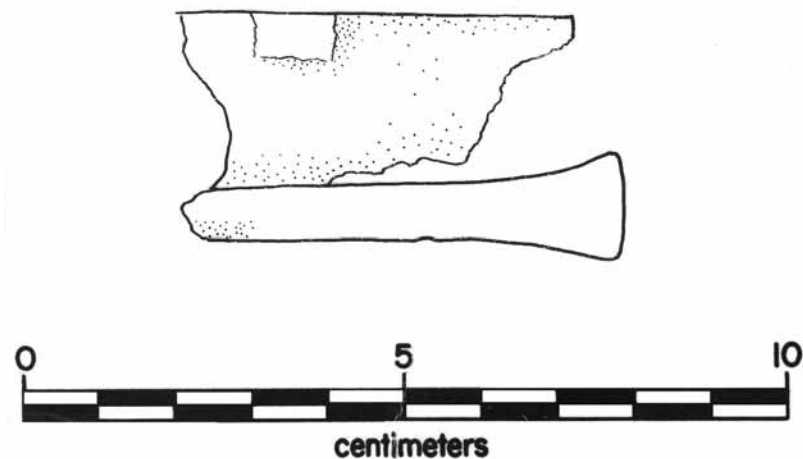
Length: $3 \frac{7}{16}$ in (8.78 cm)

Width: $1 \frac{5}{16}$ in (2.40 cm)

Location: datum 6

Condition: poor

Barrel fragment with ramrod channel. The width of the ramrod channel is $\frac{1}{4}$ in (.54 cm). The diameter of the barrel, as preserved in the concretion, is 1 inch (2.65 cm). The distance between barrel of this musket, and the neighboring barrel, 14992-4 was $\frac{11}{16}$ in (1.83 cm)



14992-6

Barrel Fragment

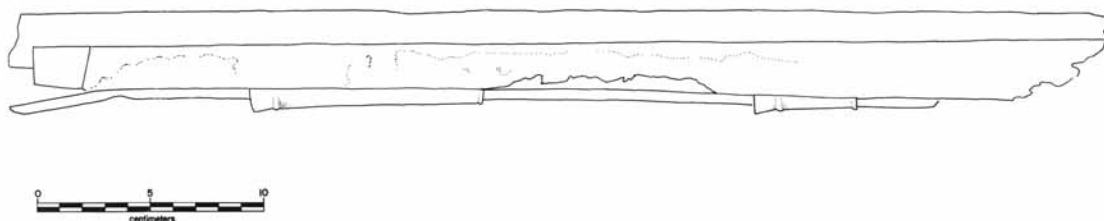
Length: 2 $\frac{1}{4}$ in (5.80 cm)

Diameter: $\frac{7}{8}$ in (2.23 cm)

Location: datum 6

Condition: poor

The barrel fragment consists solely of the end of the muzzle and the accompanying ramrod. The tip of the barrel is broken and does not have a complete circumference. The diameter of the barrel is $\frac{7}{8}$ in (2.20 cm). This measurement was taken 2 $\frac{1}{16}$ in (5.20 cm) from the end of the muzzle. The ramrod is of steel or iron and is approximately $\frac{1}{4}$ inch (.62 cm) in diameter. The ramrod extends $\frac{3}{8}$ in (.90 cm) past the end of the barrel and tapers to a diameter of $\frac{1}{2}$ in (1.40 cm). A small copper or brass brazing plate, for the bayonet stud, is located 1 $\frac{1}{4}$ in (3.2 cm) from the tip of the barrel. This plate measures approximately $\frac{7}{16}$ x $\frac{3}{8}$ in (1.17 x .90 cm) and may be incomplete.



14996-2

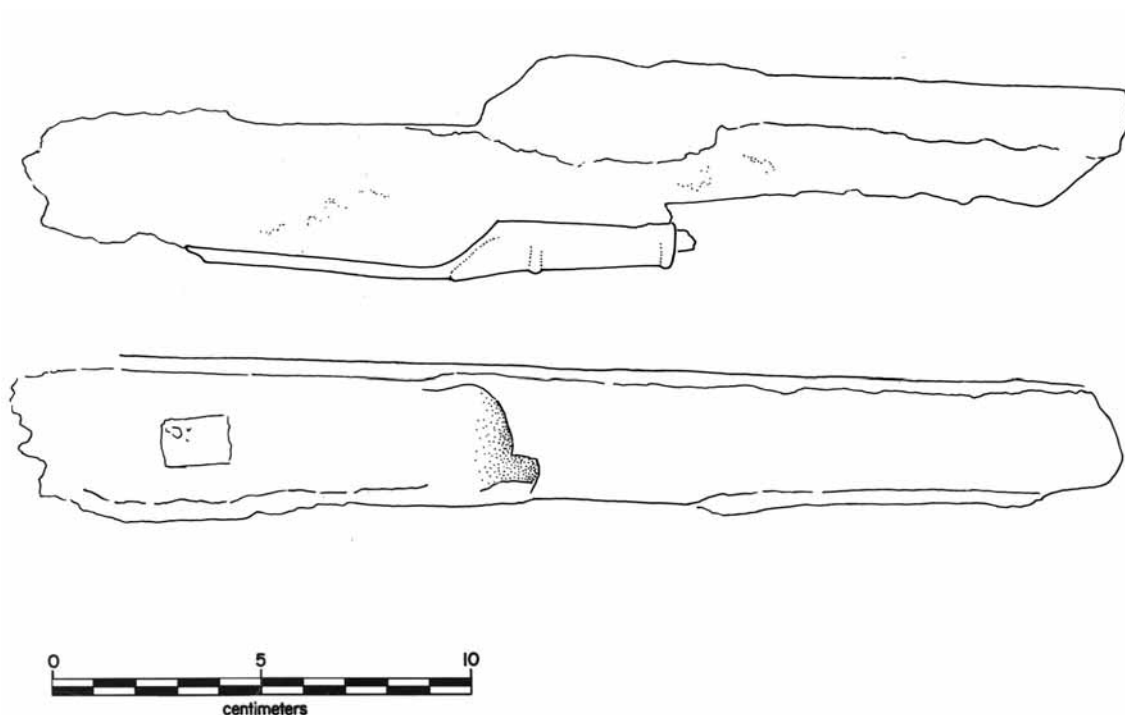
India Pattern Barrel Fragment

Length: $19 \frac{2}{3}$ in (48.80 cm)

Location: datum

Condition: poor

Barrel fragment includes the Pratt pipe, forepipe, and nosecap. The Pratt pipe is $1 \frac{7}{8}$ in (4.00 cm) long. The fluted mouth has a diameter of $\frac{1}{2}$ in (1.15 cm). The forepipe is 4 in (10.20 cm) long). The fluted mouth has a diameter of $\frac{9}{16}$ in (1.40 cm). The pipes are spaced $4 \frac{3}{4}$ in (12.10 cm) apart. The nosecap measures $1 \times \frac{13}{16}$ in (2.56 x 3.00 cm). The diameter of the barrel, near the nosecap, is $\frac{15}{16}$ in (2.45 cm). The diameter of the broken tip of the barrel is $\frac{7}{8}$ in (2.20 cm). The width of the wood stock, at the Pratt pipe, is $1 \frac{5}{16}$ in (3.40 cm).



14996-3

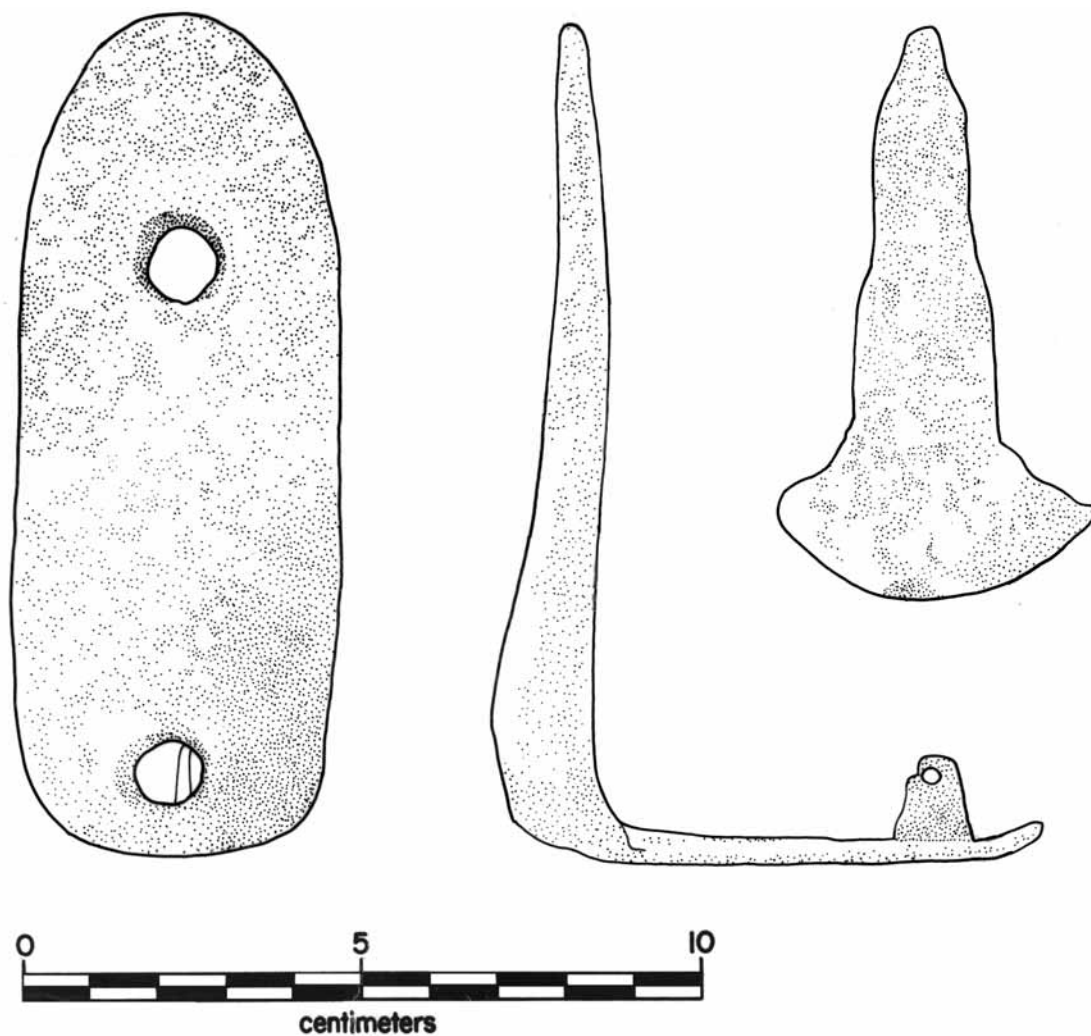
British Barrel Fragment

Length: 10 $\frac{3}{8}$ in (26.50 cm)

Location: datum

Condition: poor

Barrel fragment with tailpipe. Width of the stock at the rear tibe of the tail pipe is 1 $\frac{1}{2}$ in (3.80 cm). The width of the stock at the tip is 1 $\frac{1}{8}$ in (3.05 cm). The barrel diameter is approximately 13/16 in (2.15 cm). The tailpipe is 4 $\frac{1}{2}$ in (11.45 cm) in length. The diameter of the mouth is 7/17 in (1.18 cm). A brazing piece for the barrel lug is in the gunstock at the distal end of the barrel. It measures 7/16 x 11/16 in (1.15 x 2.10 cm).

BUTTPLATES**14914****Cupreous Buttplate**

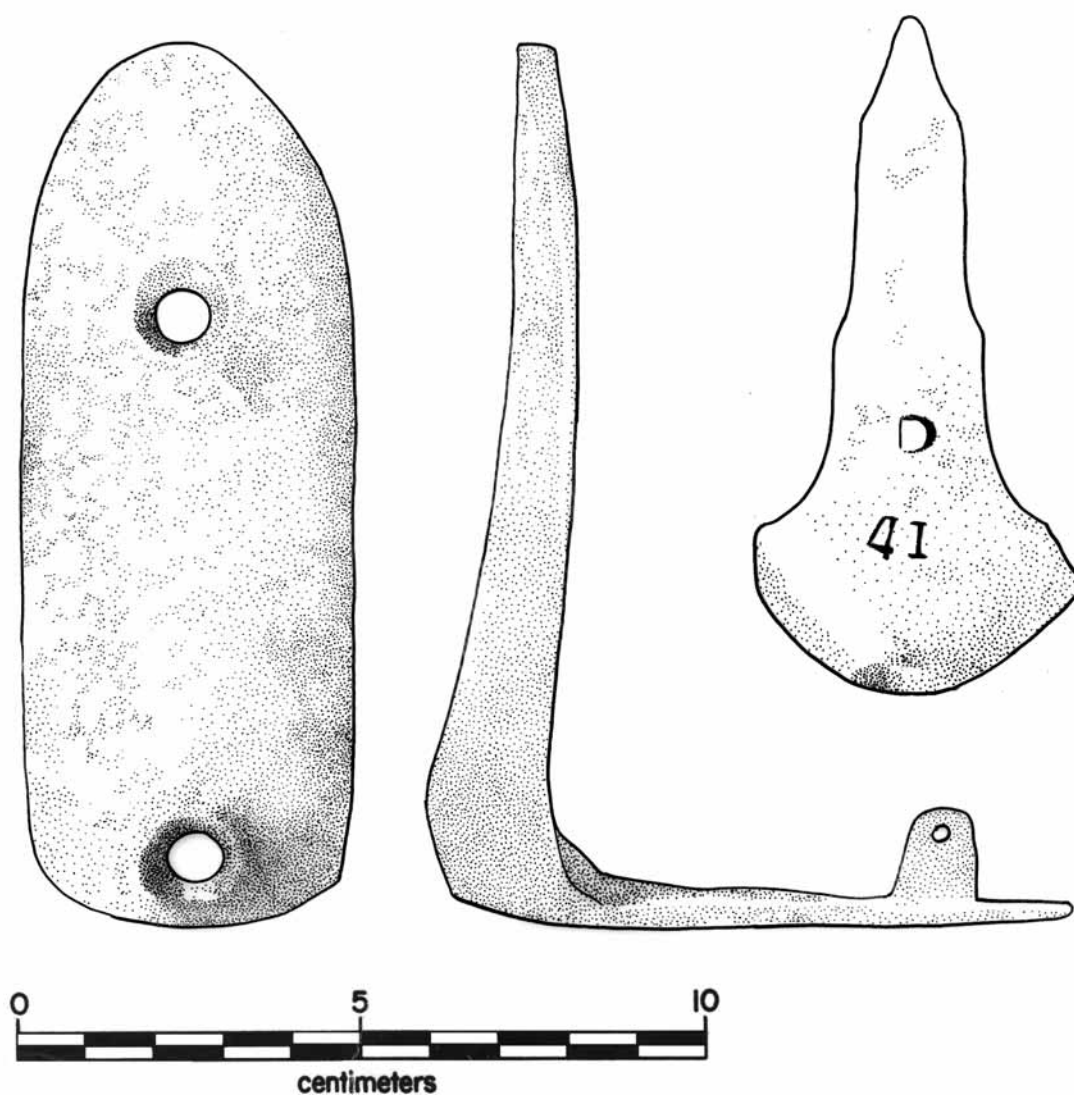
Length: 5 in (12.63 cm)

Location: datum x

Width: 1 7/8 in (4.80 cm)

Condition: poor

The lip widens from 1/16 to 3/16 in (.15 to .40 cm). Three faint parallel scratches mark the interior surface above the lower attachment hole; workshop assembly marks that represent the Roman Numeral III. An area of the exterior surface surrounding the upper attachment hole appears brushed.



14915

Cupreous Buttplate

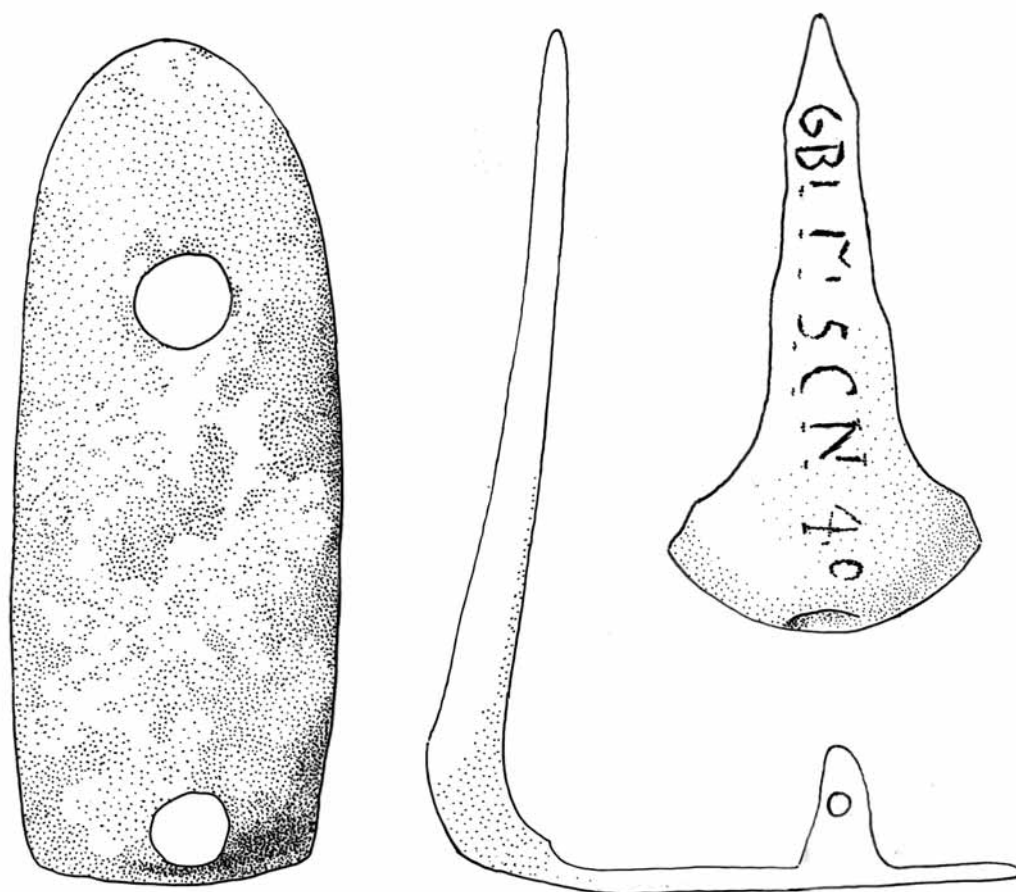
Length: 5 ⅛ in (13.00 cm)

Location: datum x

Width: 2 in (4.90 cm)

Condition: fair

The surfaces are lightly eroded. The lip between the interior and exterior surfaces widens from ⅛ to ¼ in (.20 to .60 cm). This begins in an area parallel to the center of the upper screw hole. The interior surface has a faint scratch or mark under the upper attachment hole. The only visible file marks are those which are at the base of the attachment lug on the tang and on the lug itself. The exterior surface of the tang is marked with a 'D' over 4I.



14916

Cupreous Buttplate

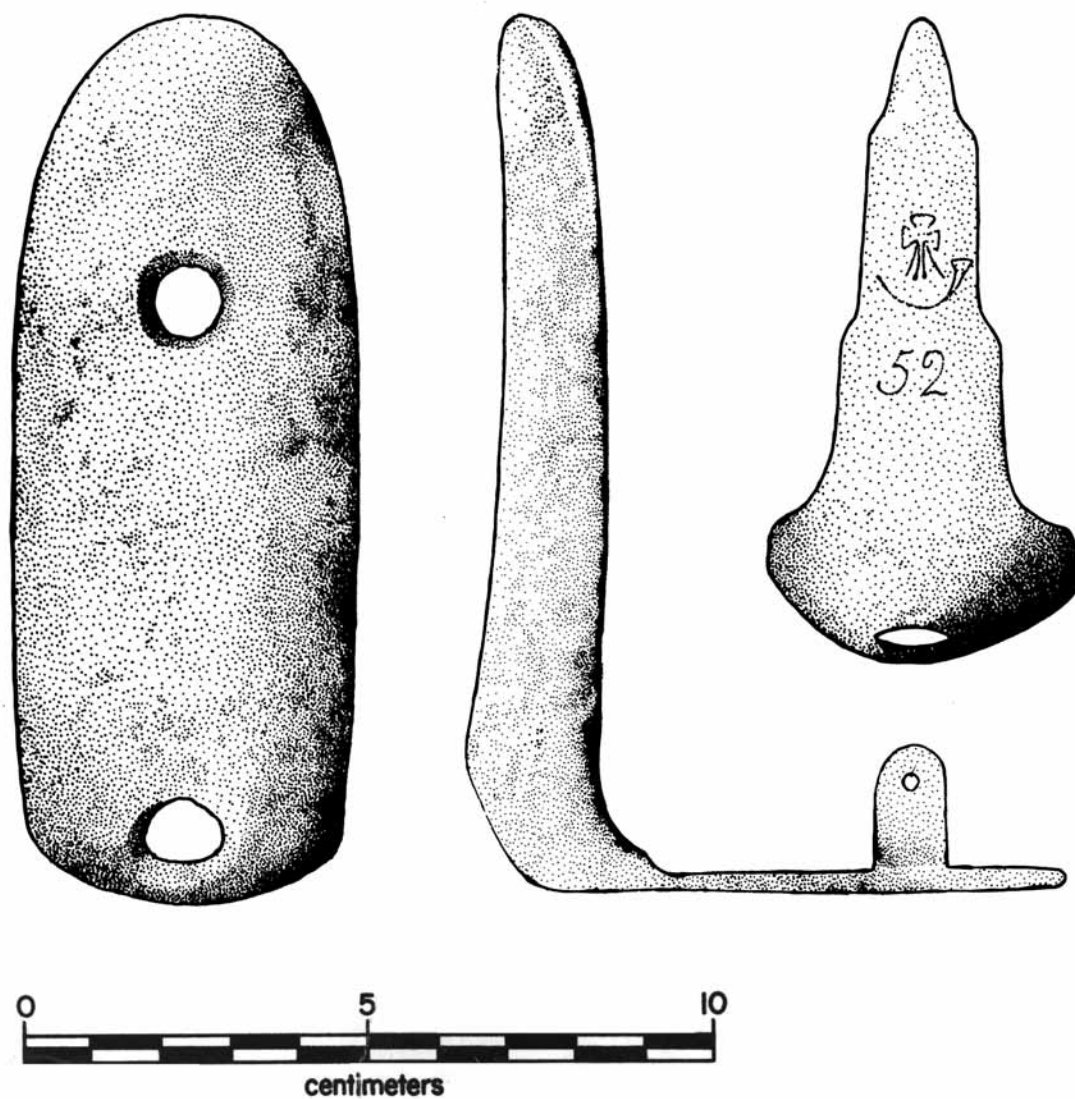
Length: 4 $\frac{7}{8}$ in (12.38 cm)

Location: datum x

Width: 2 in (4.80 cm)

Condition: fair

There are several file marks in the eroded surface at the base of the attachment lug. The lip widens from approximately $\frac{1}{16}$ to $\frac{1}{8}$ in (.10 cm to .35 cm) beginning at the lower edge of the upper attachment hole. The exterior surface of the tang has a possible regimental number scratched into it, GBI M 5 C N 40. This mark signifies the Grenadiers Bombay Infantry Model 5 Carbine Number 40.

**14917****Cupreous Buttplate**

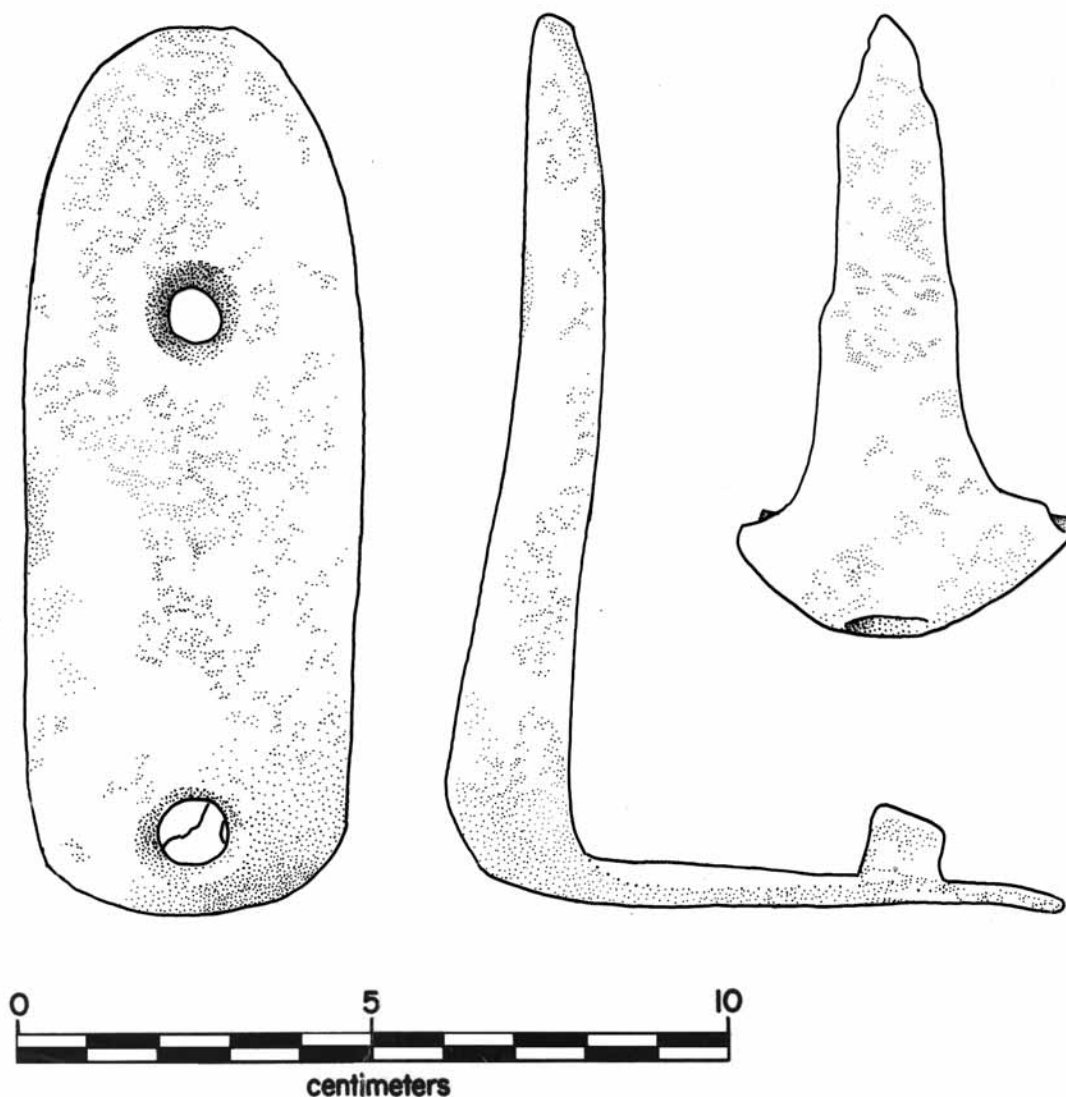
Length: 5 in (12.68 cm)

Location: datum x

Width: 2 in (5.05 cm)

Condition: fair

The surfaces of the buttplate are heavily eroded. The lip widens from 1/16 to 3/16 in (.10 to .50 cm) beginning at the bottom edge of the upper attachment hole. The tang is marked with the number 52 under a bugle. This etched mark is a representation of regimental symbol of the 52 Regiment of Foot, Light Infantry Unit.

**14918****Cupreous Buttplate**

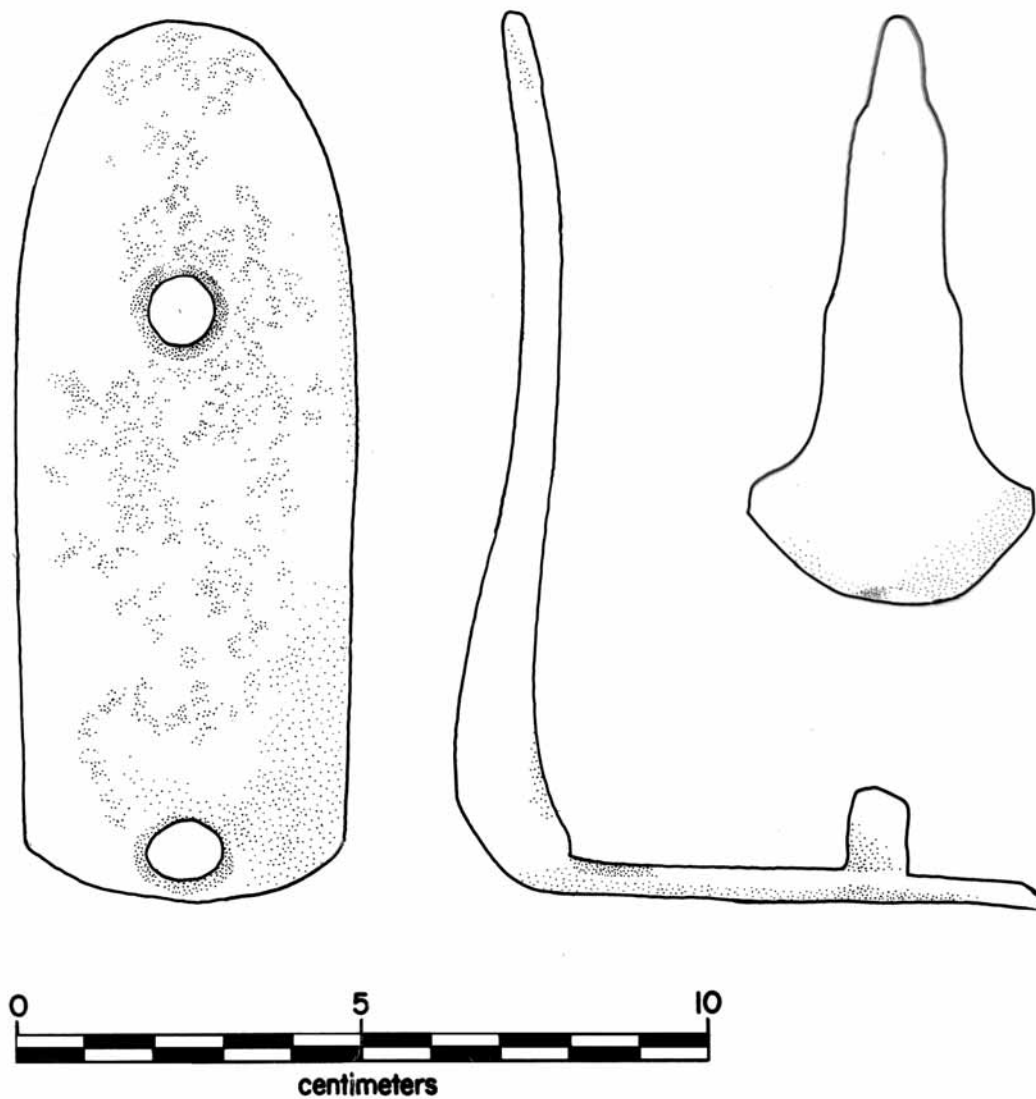
Length: ~5 in (12.67 cm)

Location: datum x

Width: 1 7/8 in (4.80 cm)

Condition: Poor

The surfaces of the buttplate are heavily eroded. The lip tapers from 1/16 to 3/16 inch (.09 to .49 cm) beginning adjacent the top of the upper attachment hole. There are three scratches, presumably file cuts, on the interior surface between the two attachment holes. This is the Roman Numeral III, a workshop assembly mark. There are file marks evident on the attachment lug and on the interior surface of the tang.

**14919****Cupreous Buttplate**

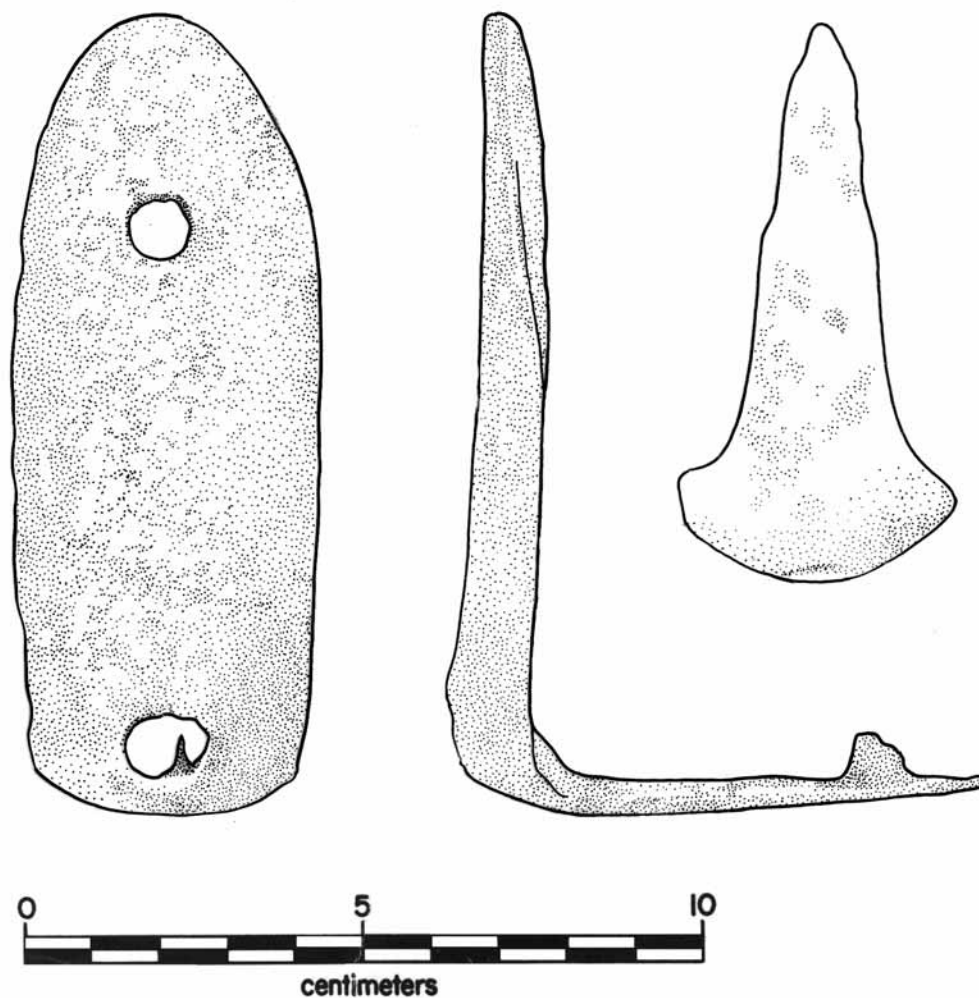
Length: ~5 1/8 in (12.88 cm)

Location: datum x

Width: 1 15/16 in (5.00 cm)

Condition: Poor

The surfaces are completely eroded. The lip widens from 1/16 to 3/16 (.15 to .47 cm). The attachment holes are countersunk. There are three scratches, presumably file cuts, on the interior surface between the two attachment holes. This is the Roman Numeral III, a workshop assembly mark.

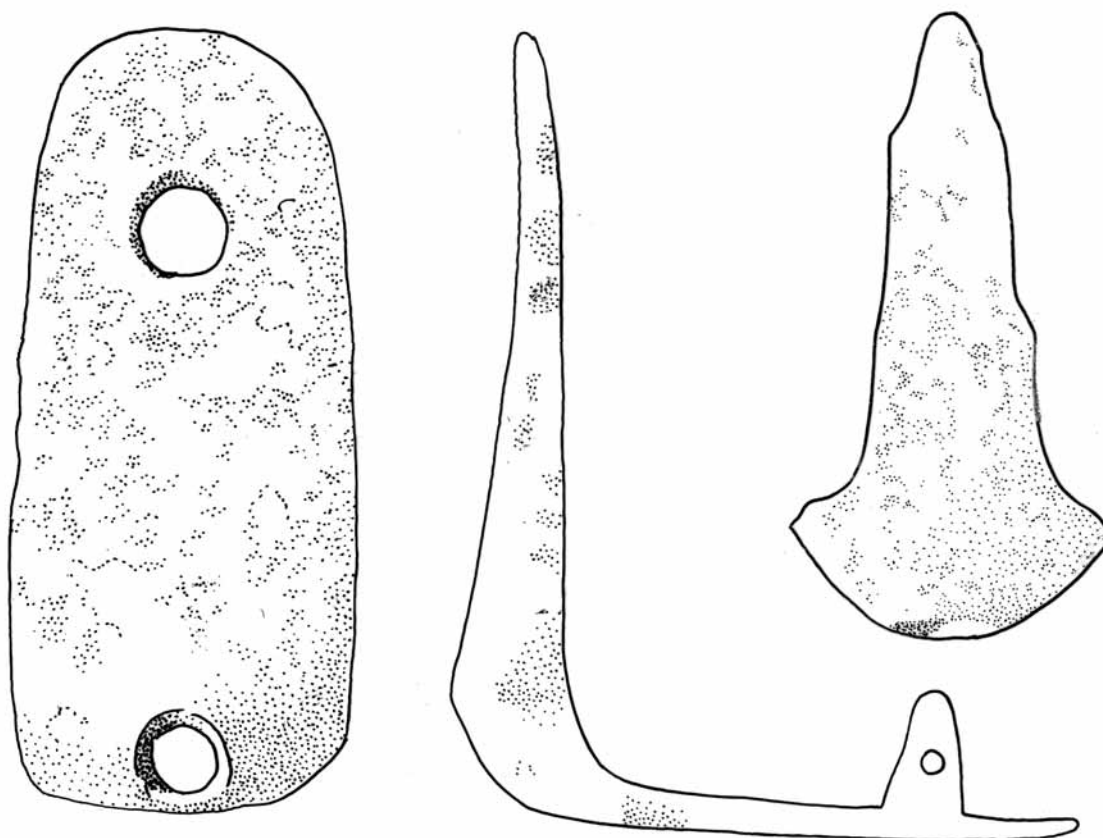
**14920****Cupreous Buttplate**Length: 4 $\frac{3}{4}$ in (12.00 cm)

Location: datum x

Width: ~1 $\frac{3}{4}$ in (4.50 cm)

Condition: fair

The buttplate surfaces are both eroded and worn. An X and four scratches are marked between the attachment holes on the interior surface. This is the Roman Numeral XIII (probably a mistake of the number XIV), a workshop assembly mark. The outside top edge of the buttplate is irregular. The lip widens from $\frac{1}{16}$ to $\frac{1}{8}$ in (.10 to .37 cm) beginning about at approximately the center of the buttplate. The attachment lug is broken before the pin hole.

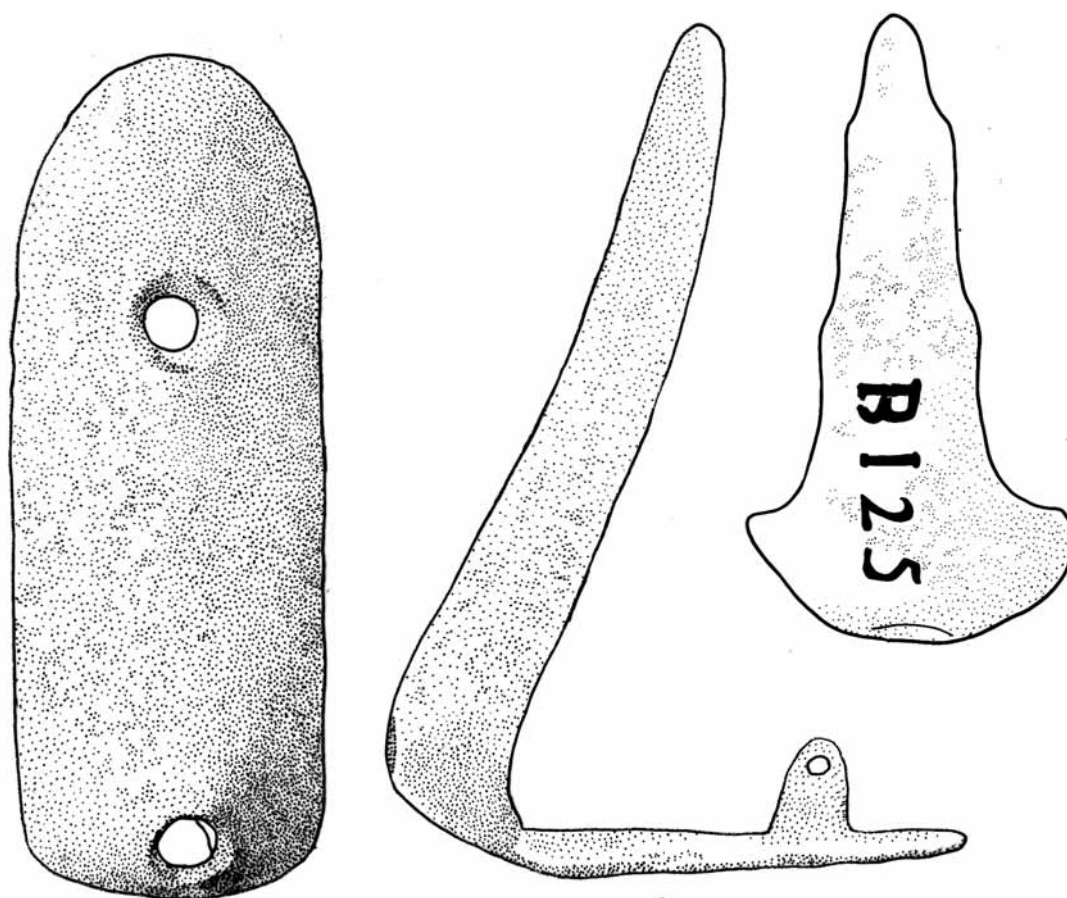
**14929****Cupreous Buttplate**Length: $\sim 4 \frac{3}{8}$ in (10.98 cm)

Location: datum x

Width: $1 \frac{7}{8}$ in (4.76 cm)

Condition: poor

The buttplate has substantial erosion. No file marks or proof marks are evident due to severity of surface corrosion. The lip widens to $\frac{1}{8}$ in (.28 cm) at the very top edge of the buttplate. Both attachment holes are countersunk. The top attachment hole has widened, due to erosion, to the outer hole diameter.

**14930****Cupreous Buttplate**

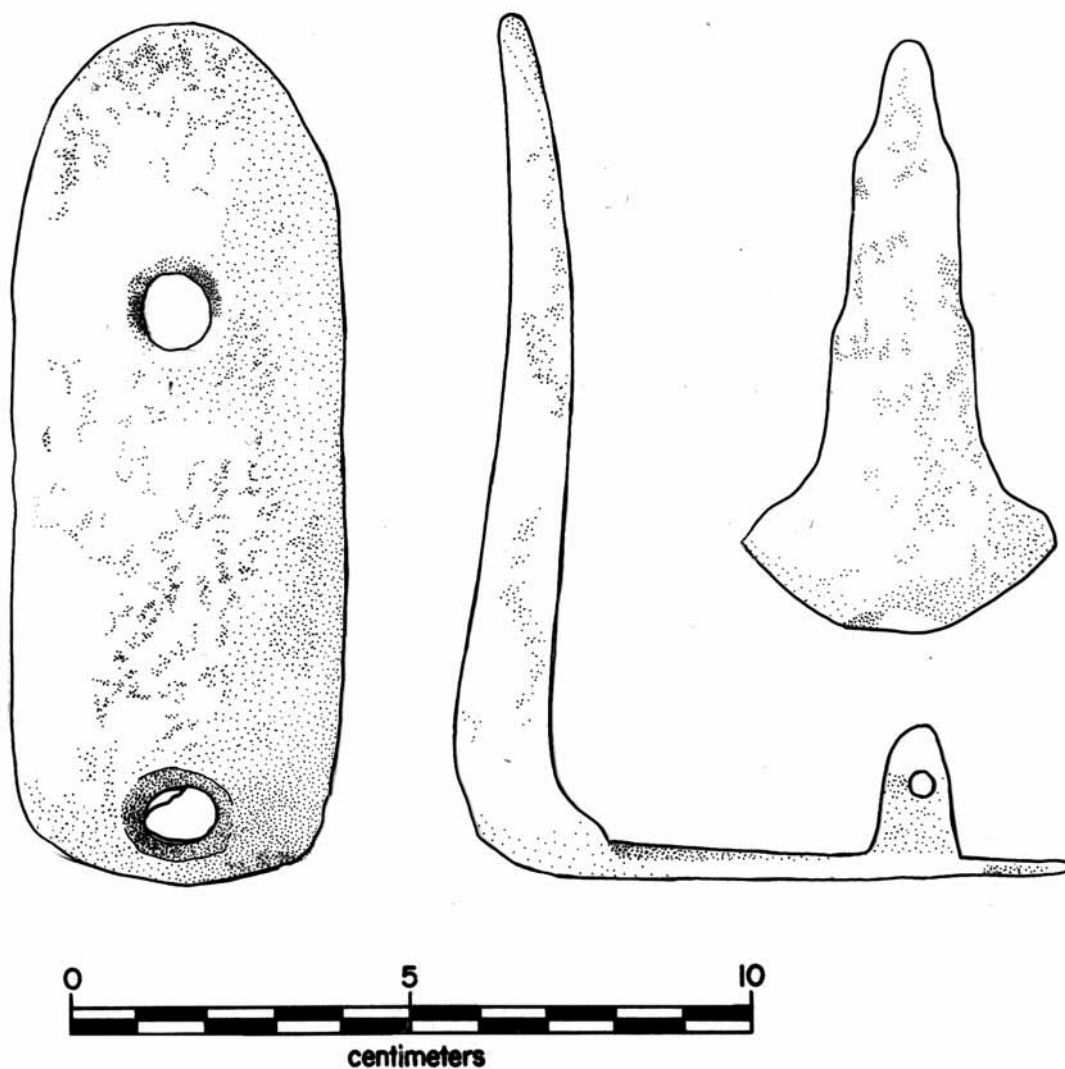
Length: 4 15/16 in (12.58 cm)

Location: datum x

Width: 2 1/16 in (5.15 cm)

Condition: Poor

The exterior surface of the buttplate is heavily eroded. The lip widens from 1/16 to 3/16 in (.15 to .48 cm), beginning at approximately the center of the butt. An X is scratched on the interior surface of the buttplate between the attachment holes. The three-step tang terminates in a blunt point. The tang is stamped B 125. Two small marks in the area of the second step may indicate more lettering which has not preserved. No file marks are evident.

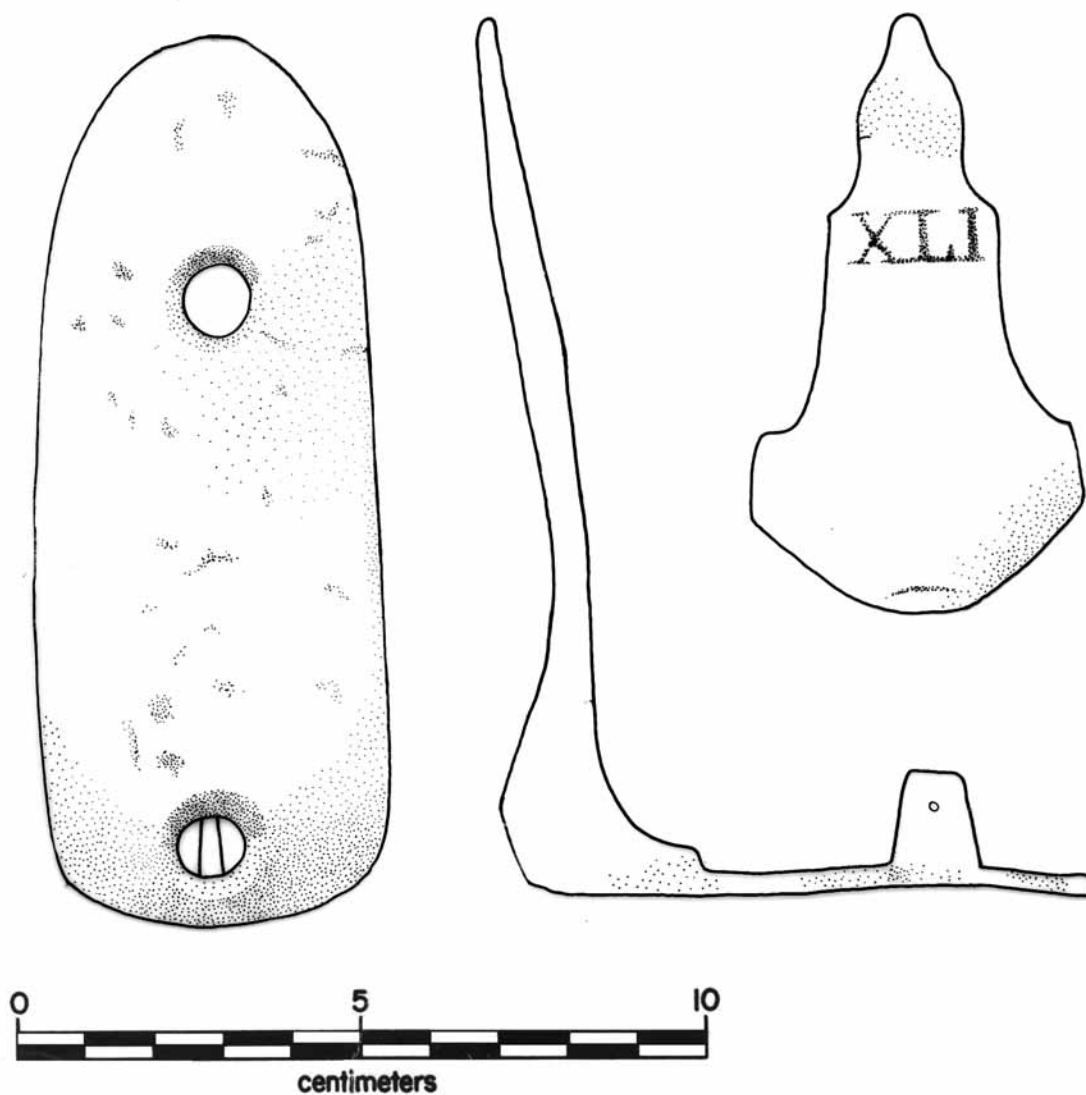
**14934****Cupreous Buttplate**Length: 4 $\frac{7}{8}$ in (12.36 cm)

Location: datum 3

Width: 2 in (4.95 cm)

Condition: fair

The surfaces of the buttplate are completely eroded. The lip widens from $\frac{1}{16}$ to $\frac{3}{16}$ in (.15 to .50 cm) beginning about the center of the upper attachment hole. A 'C' is stamped just below the upper attachment hole on the interior surface. The interior edge around the butt is slightly flattened. There are no visible file marks. The pin hole in the lug is off center.



14988-4

Cupreous Buttplate

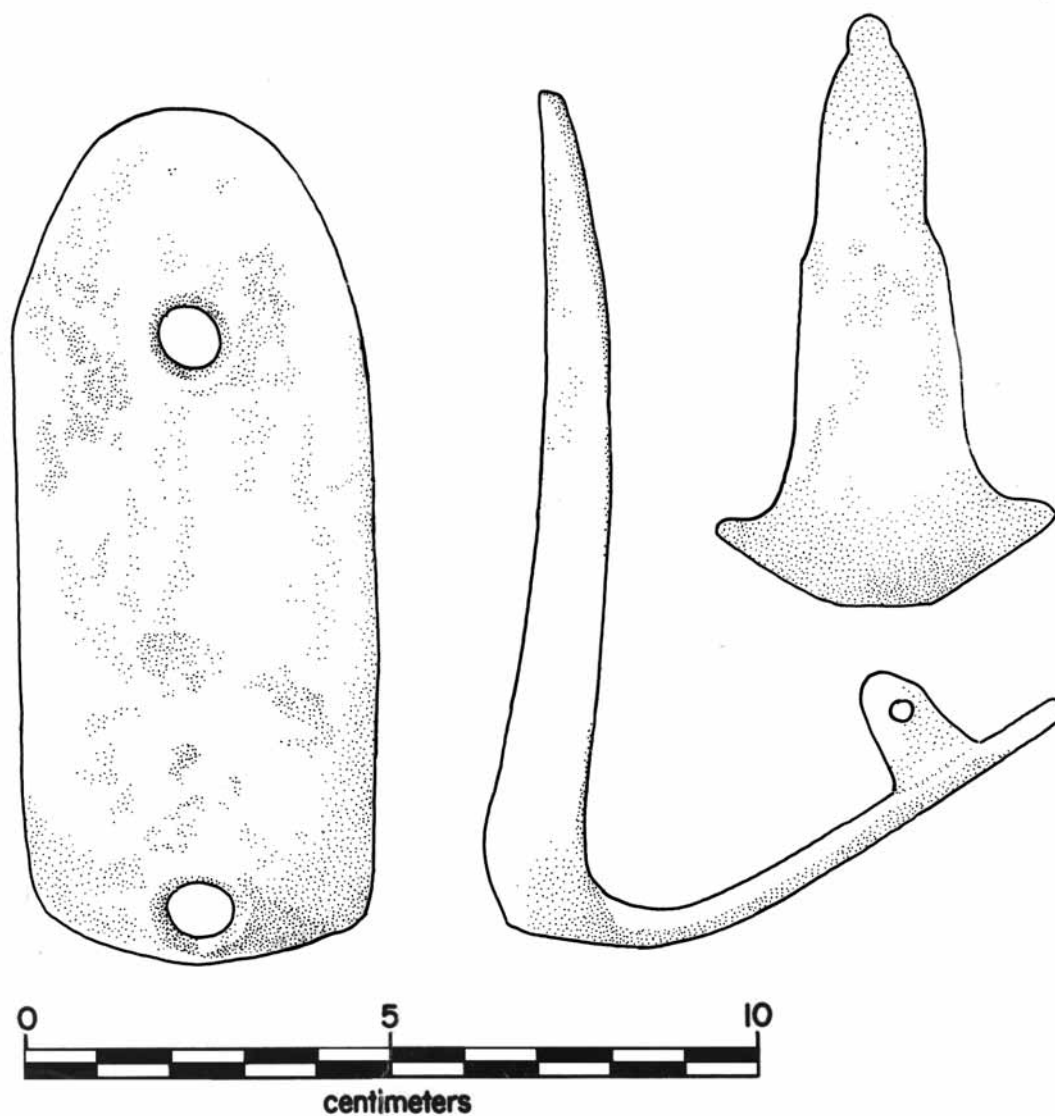
Length: 5 1/8 in (12.89 cm)

Location: datum 1

Width: 2 in (5.10 cm)

Condition: good

Surface of the buttplate is smooth and polished. The tang is hand-etched with the Roman numeral XLI, for the 41st Regiment of Foot. The buttplate widens to a 1/16 in (.15 cm) at the top edge of the buttplate face. There are slight indentations on the surface of the buttplate, as though the weapon was used to strike an object.



14998

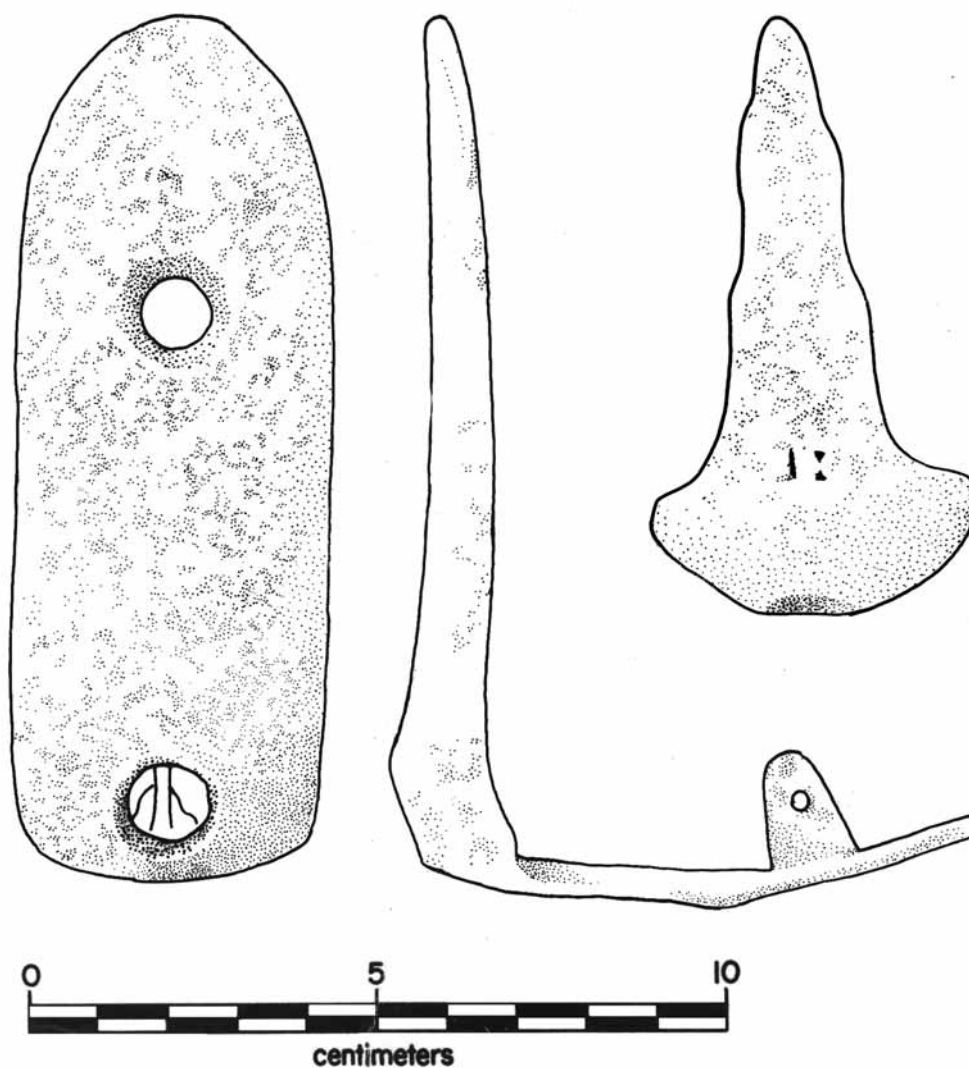
Cupreous ButtplateLength: 4 $\frac{3}{8}$ in (11.71 cm)

Location: datum 2

Width: 2 in (5.10 cm)

Condition: fair

The surface of the buttplate is mildly eroded. The lip widens from $\frac{1}{16}$ to $\frac{1}{8}$ in (.10 to .27 cm) beginning about a centimeter below the upper attachment. The tang is asymmetrical. It is a two step tang terminating in a ball, though the tang appears crudely fashioned. File marks are evident on the lip of the tang only. There are four scratches running parallel to one another between the attachment holes on the interior surface. These are workshop assembly marks. The letter 'P' is stamped above the upper attachment hole.

**14999****Cupreous Buttplate**

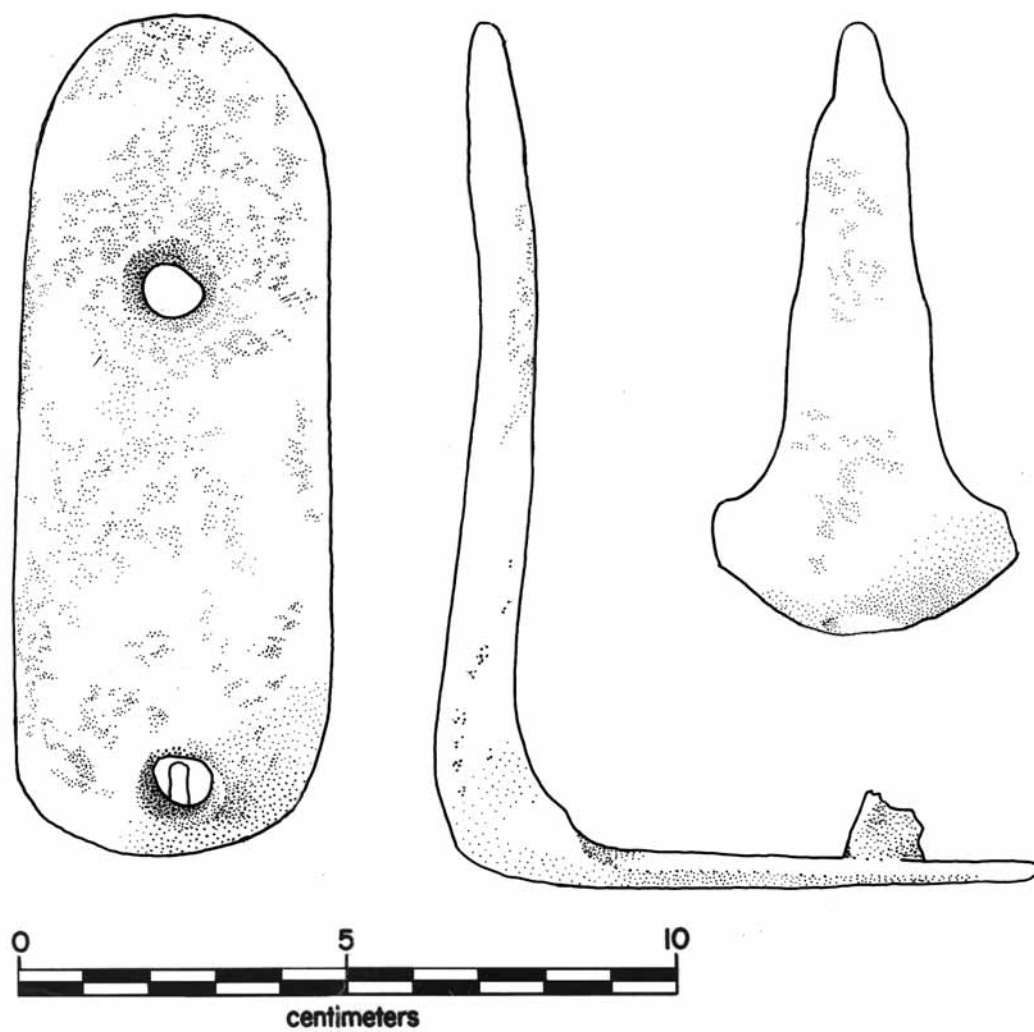
Length: 4 15/16 in (12.59 cm)

Location: datum 2

Width: 2 1/16 in (5.25 cm)

Condition: Poor

The surfaces of the buttplate are heavily eroded. The attachment lug is bent. The lip tapers from 1/16 to 3/16 in (.16 cm to .49 cm) beginning adjacent the lower edge of the top attachment hole. The interior surface of the buttplate is marked with three scratches, workshop assembly marks. Due to the condition of surfaces, no file marks are present. The tang is marked with a numeral, possibly a rack number. Only the second number, a 1, is readable.



15000

Cupreous Buttplate

Length: 5 1/16 in (12.80 cm)

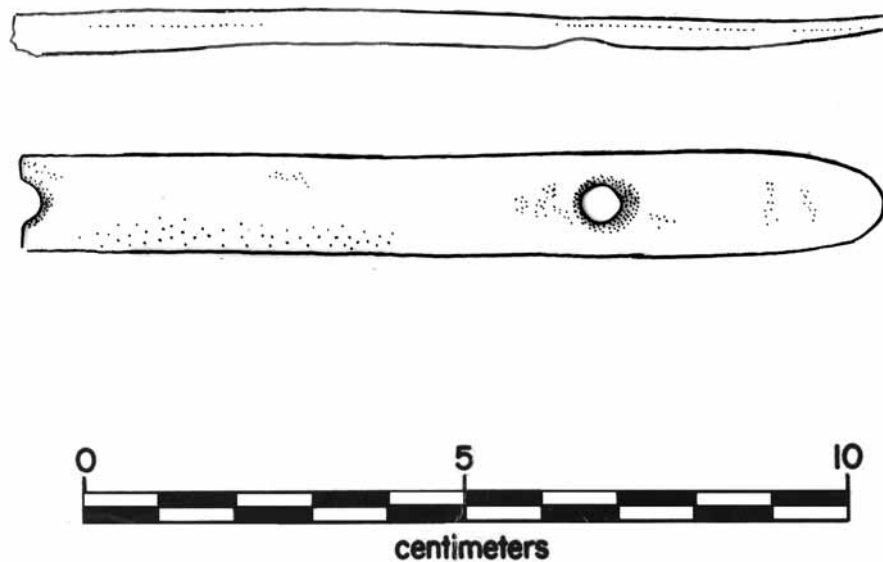
Location: datum 2

Width: 2 in (5.00 cm)

Condition: poor

The surface of the buttplate is heavily eroded. The lip widens from 1/16 to 3/16 in (.15 to .40 cm) at a point parallel to the center of the top attachment hole. A few file marks are evident at the base of the lug. The lug itself is broken, through the center of the pin hole. The upper portion of the attachment is gone. There are patches of the exterior surface of the buttplate that appear brushed.

TRIGGER GUARDS



14907

Cupreous Trigger Guard

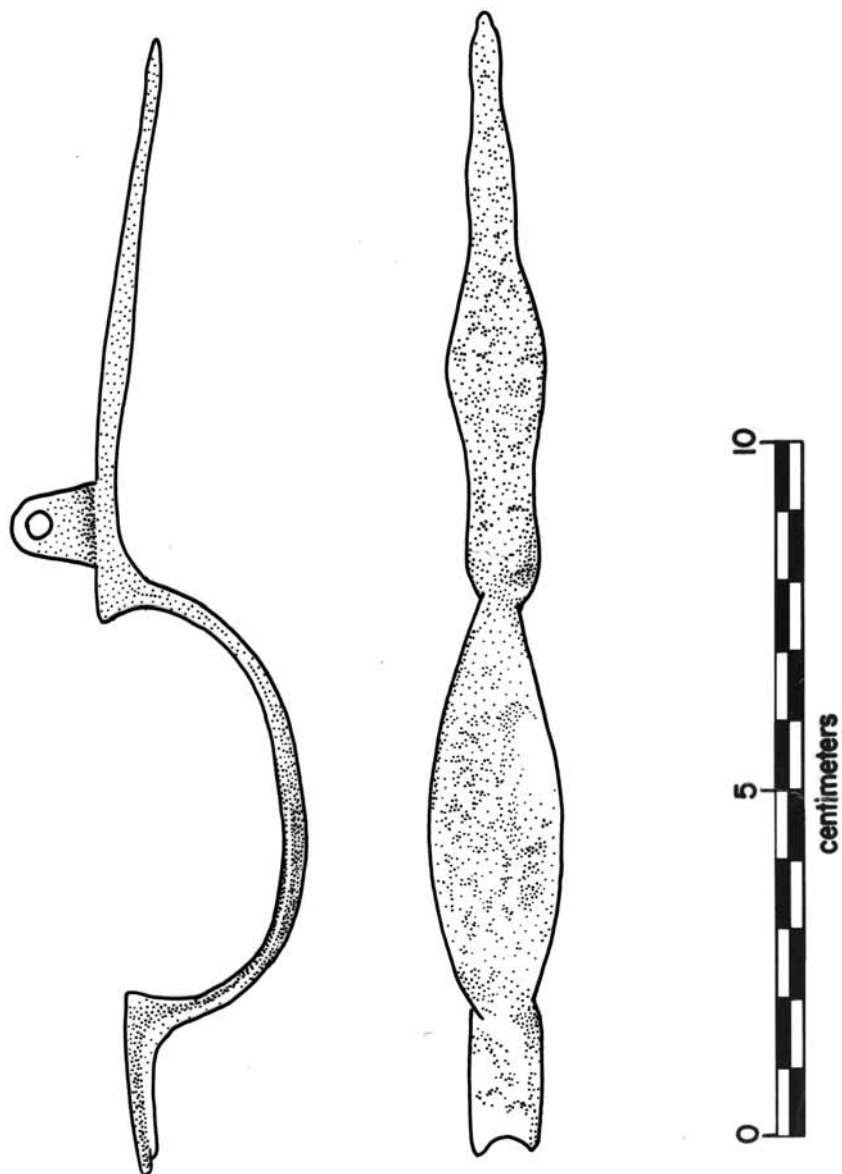
Length: 4 ½ in (11.40 cm)

Location: datum x

Width: ~ ½ in (1.33 cm)

Condition: good

The trigger guard fragment is of a rear tang which is broken at the first of two attachment holes. The tang is of cast and filed brass. The tang does not have decorative finial, terminating in a simple rounded tip. The exterior surface is convex, with a flat interior surface. Both attachment holes are countersunk.

**14913****Cupreous Trigger Guard**

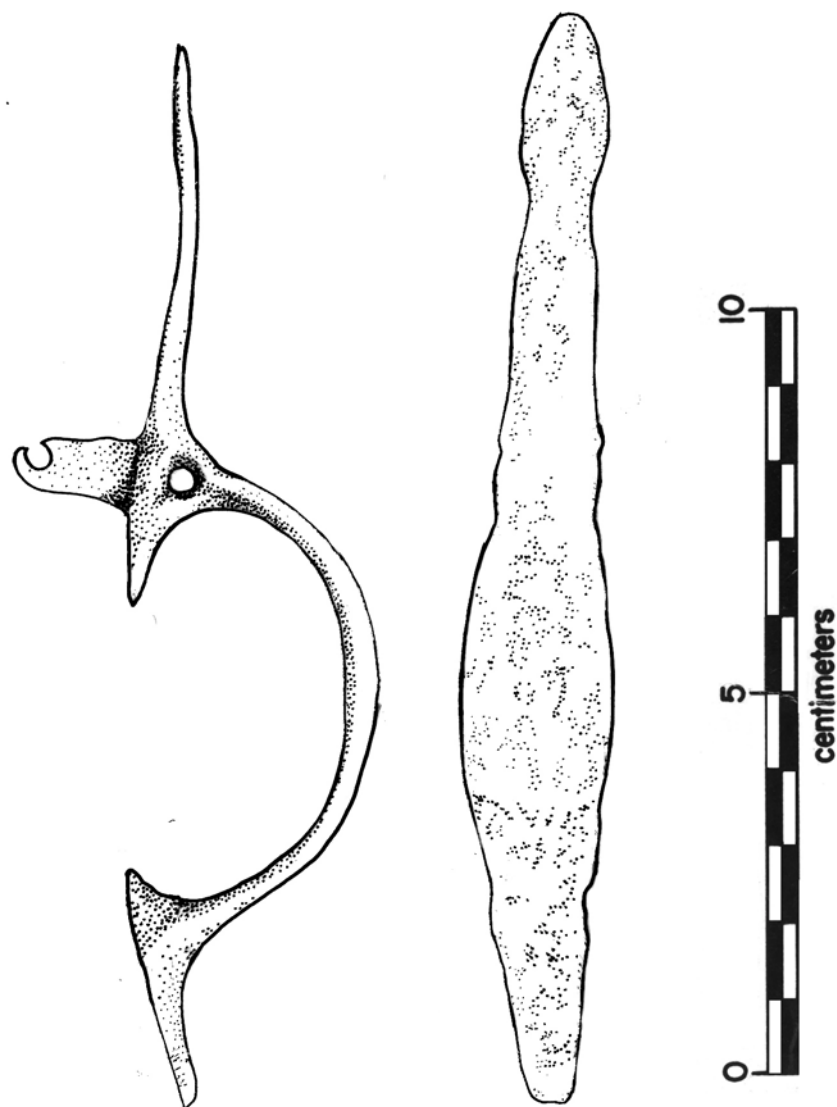
Length: 6 9/16 in (16.72 cm)

Location: datum 3

Width: 3/4 in (1.88 cm), bow

Condition: fair

The trigger guard fragment is of cast brass. It is broken at the attachment hole of the rear tang. The attachment of the trigger guard to the stock was achieved through the combined use of a lug in the fore tang and a screw in the rear tang, as indicated by the screw hole at the break in the rear tang. The fore tang is a three-tiered taper terminating in a point.

**14926****Cupreous Trigger Guard**

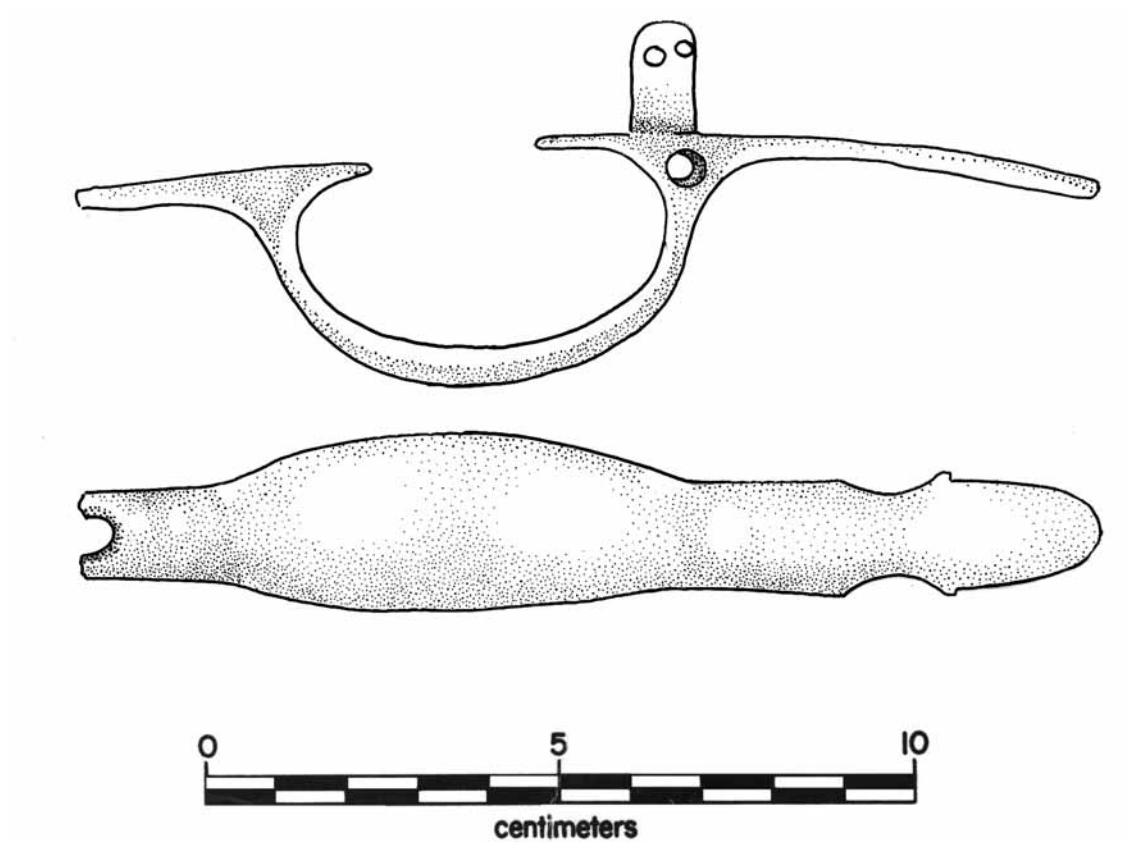
Length: 5 9/16 in (14.07 cm)

Location: datum 3

Width: 3/4 in (1.82 cm), bow

Condition: poor

The trigger guard fragment is of cast and filed brass. The trigger guard is preserved from the fore tang through the break at the attachment hole at the rear tang. A lug in the fore tang and a screw hole in the rear tang enable attachment to the stock. The fore edge of the bow, as it approaches the front tang, has a hole for the attachment of a sling swivel.



14938

Cupreous Trigger Guard

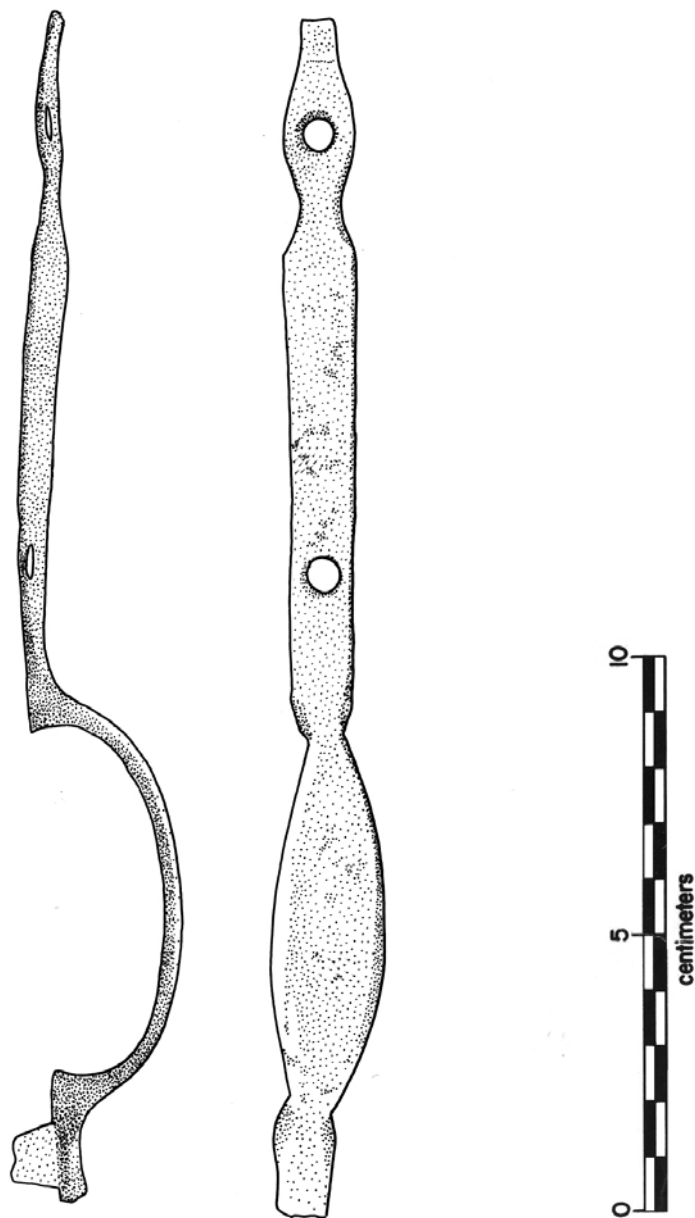
Length: 5 ³/₄ in (14.61 cm)

Location: datum 9

Width: 15/16 in (2.41 cm), bow

Condition: good

The trigger guard fragment is broken at the first attachment hole of the rear tang. The trigger guard is of cast and filed brass. A hole at the fore edge of the bow is for the placement of the sling swivel. The attachment lug for the fore tang has two holes, suggesting it was reworked to provide a better fit. The tang tip has two score marks, assembly marks, on its internal surface.



14939

Cupreous Trigger Guard

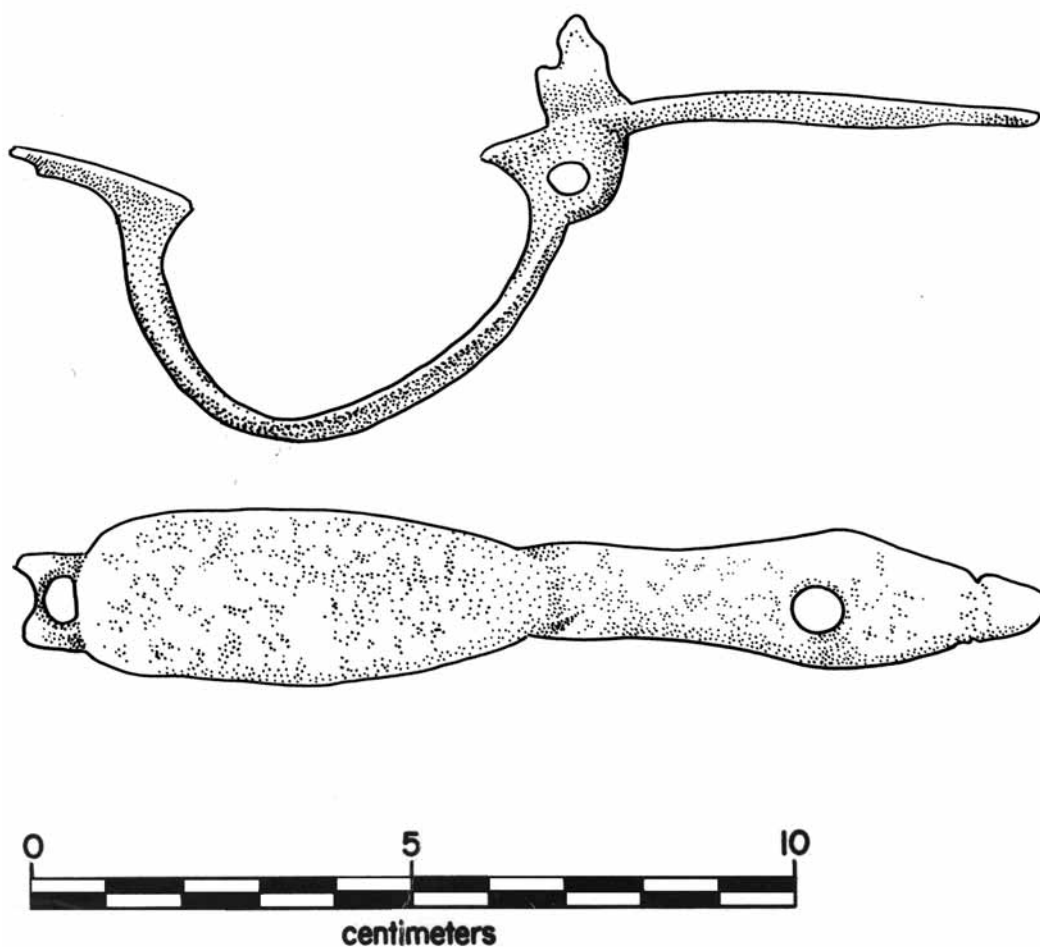
Length: 8 5/16 in (21.08 cm)

Location: datum 9

Width: 13/16 (2.00 cm), bow

Condition: fair

The trigger guard fragment, a bow and rear tang, is of cast brass. The trigger guard is attached to the stock through the use of two screws in the rear tang and an attachment lug in the front tang. The surface is flat with beveled edges and countersunk screw holes.



14941

Cupreous Trigger Guard

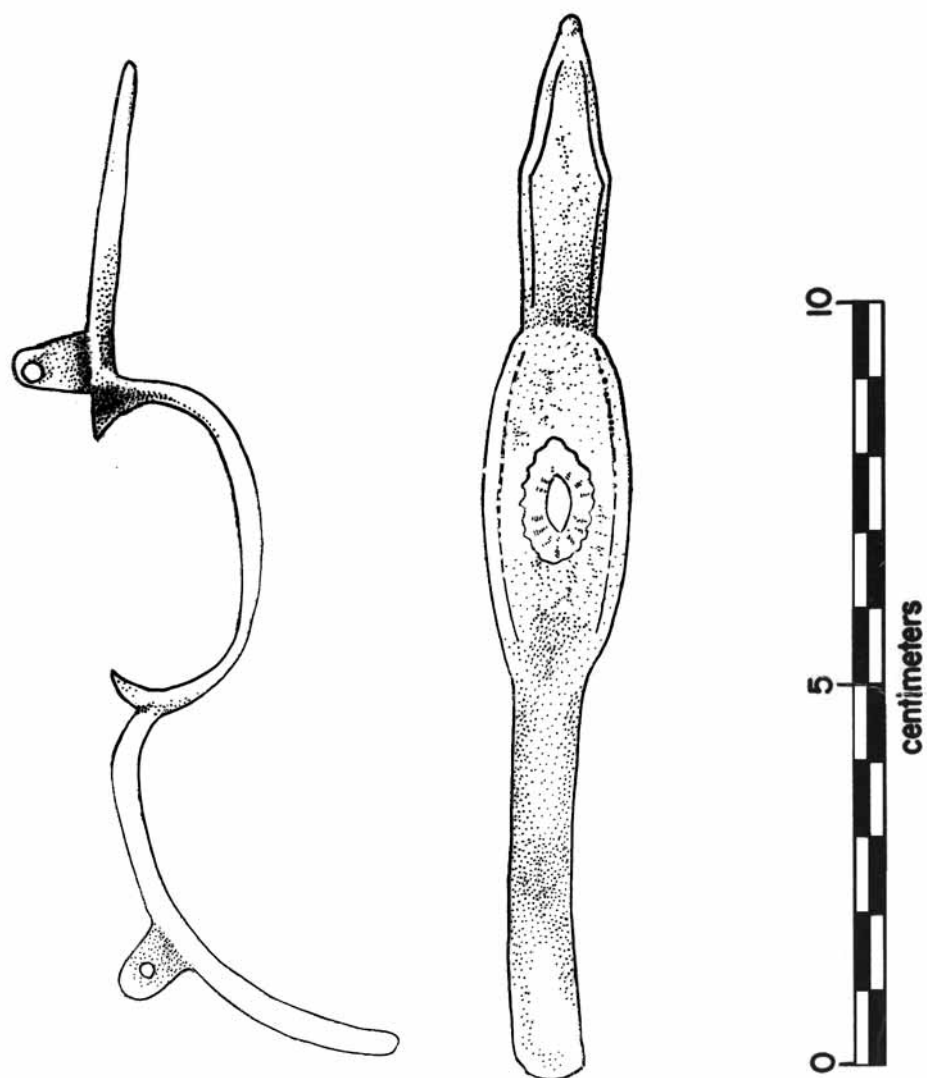
Length: 5 ¼ in (13.75 cm)

Location: datum x

Width: 13/16 (2.17 cm), bow

Condition: fair

The trigger guard was attached to the stock through the use of a screw and lug in the front tang and at least one screw in the rear tang. The fore area of the bow, as it approaches the front tang, has a hole for the placement of a sling swivel. Both screw holes are countersunk. The bow is slightly bent. A file cut is evident on the rear tang and fore tang near the attachment holes.

**14942****Cupreous Trigger Guard**

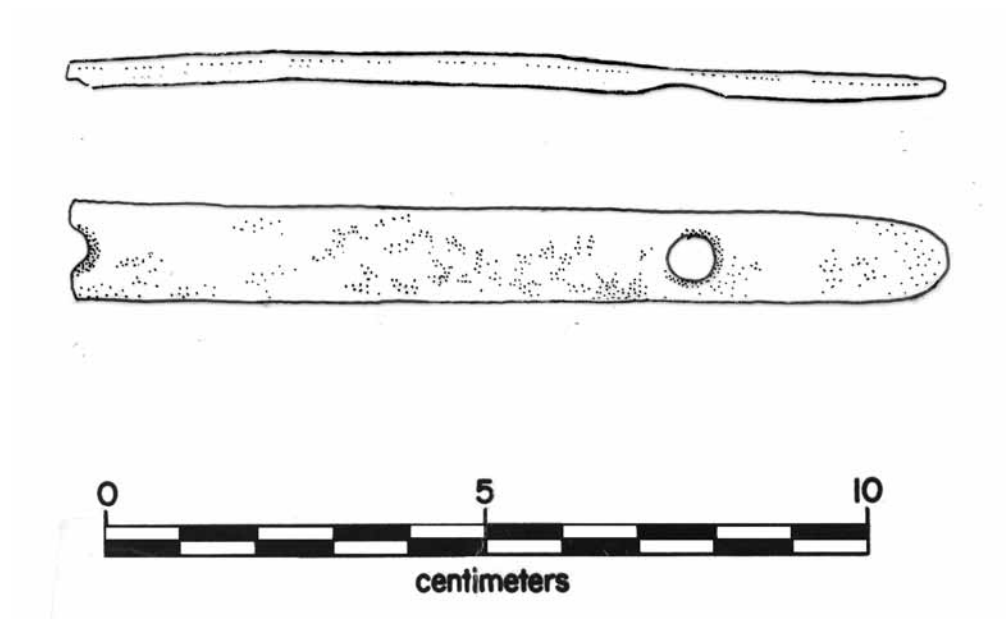
Length: 5 ¼ in (13.73)

Location: datum x

Width: ~13/16 (1.90 cm), bow

Condition: fair

The complete trigger guard is of cast brass. The attachment of the trigger guard to the stock is enabled through the use of a lug on each tang. The bow and fore tang has an incised decorative line that extends along the edges. A 'clam' or 'basket' decoration is centrally placed on the bow surface. No file marks are visible. Four small file cuts, assembly marks, are apparent on the internal surface near the tip of the front tang.



14943

Cupreous Trigger Guard

Length: $4 \frac{3}{8}$ in (11.61 cm)

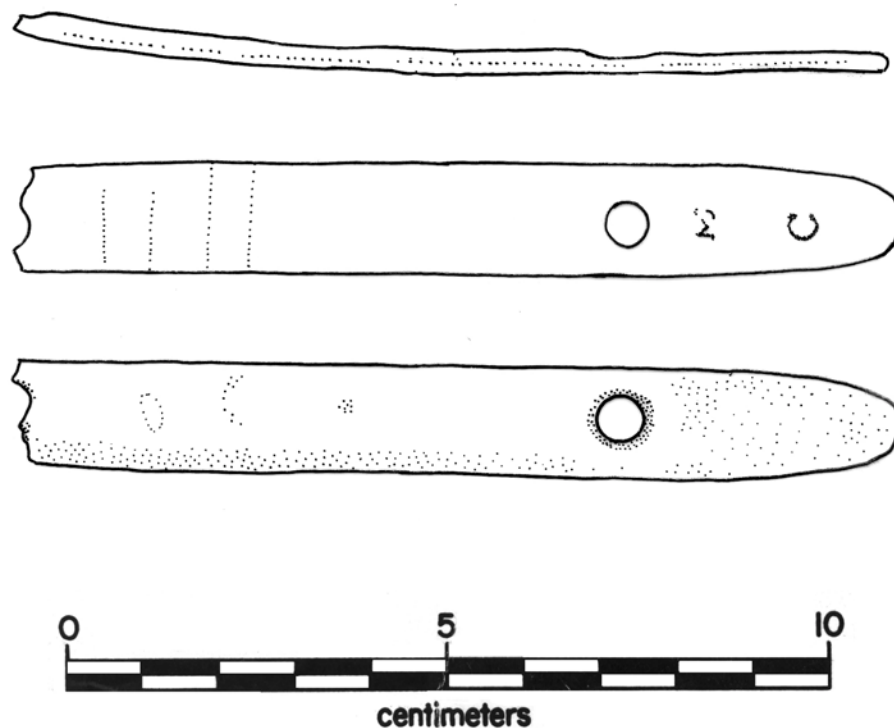
Location: datum 9

Width: $\frac{1}{2}$ in (1.29 cm)

Condition: fair

The fragment is of the rear trigger guard tang, broken at the first of the two attachment holes.

The trigger guard is of cast and filed brass with a convex exterior surface. The tang terminates in a simple rounded tip. The attachment holes are countersunk.



14944

Cupreous Trigger Guard

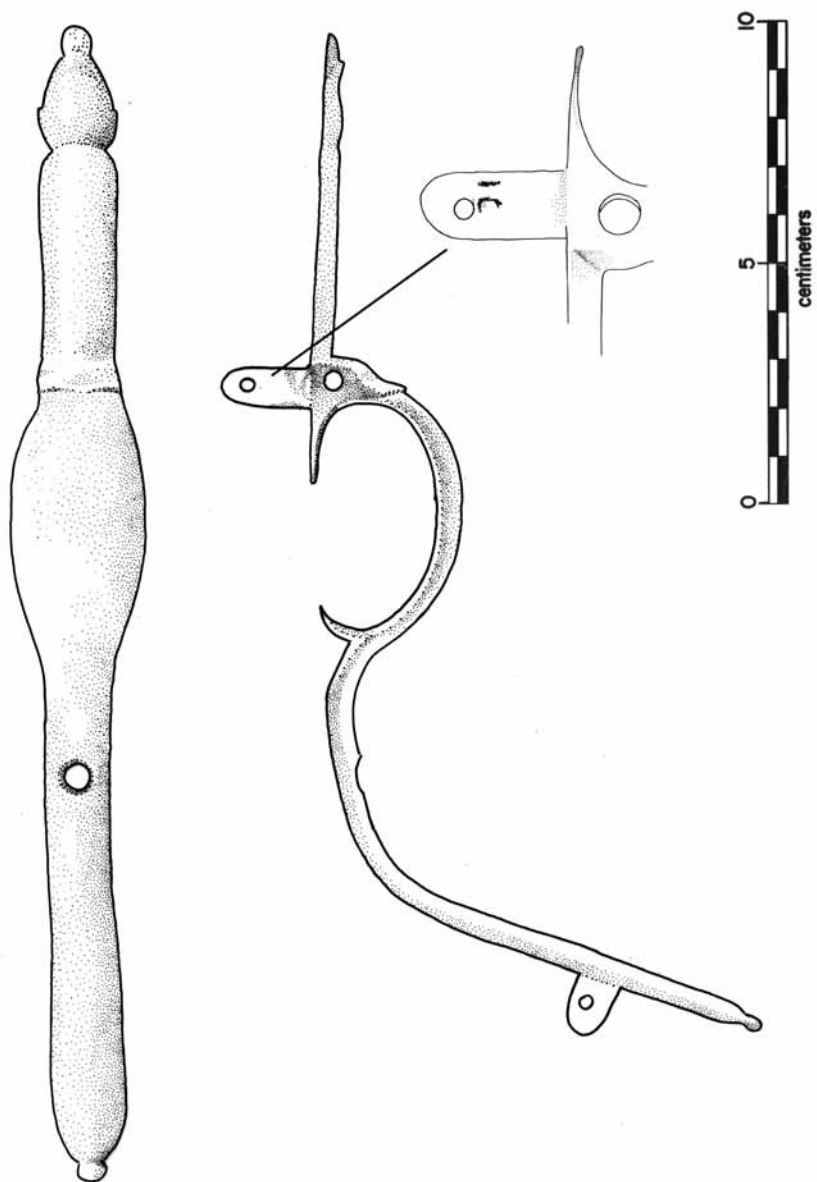
Length: 4 7/16 in (11.78 cm)

Location: datum x

Width: 9/16 in (1.40 cm)

Condition: good

The rear tang of the trigger guard is broken at the first of two attachment holes. The trigger guard fragment is of cast and filed brass with a convex external surface. Both attachment holes are countersunk. The internal surface is stamped with the letter 'C' and the numeral '3' at the tip of the tang. At the broken edge of the tang are four cuts, representing assembly marks. The tang terminates in a simple rounded tip.



14981

Cupreous Trigger Guard

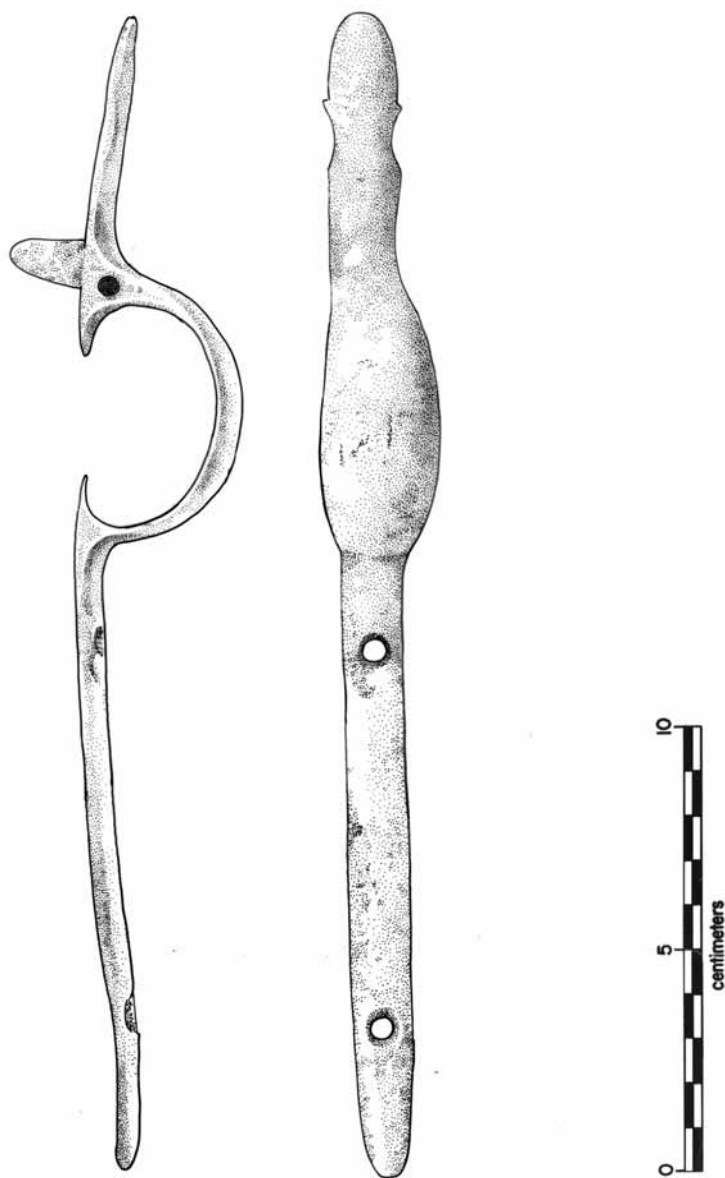
Length: 11 7/16 in (28.10 cm)

Location: midway between datums 1 and 3

Width: ~1 3/16 (2.92 cm)

Condition: good

The complete trigger guard is of cast and filed brass. The attachment of the trigger guard to the stock is achieved through lugs, one in each tang, and a countersunk screw hole in the rear tang. The fore tang lug is stamped with a mark, possibly the letters 'IC'. A hole on the fore edge of the bow, as it approaches the fore tang, is for the placement of a sling swivel. The rear tang is bent downward at an angle of 55°.

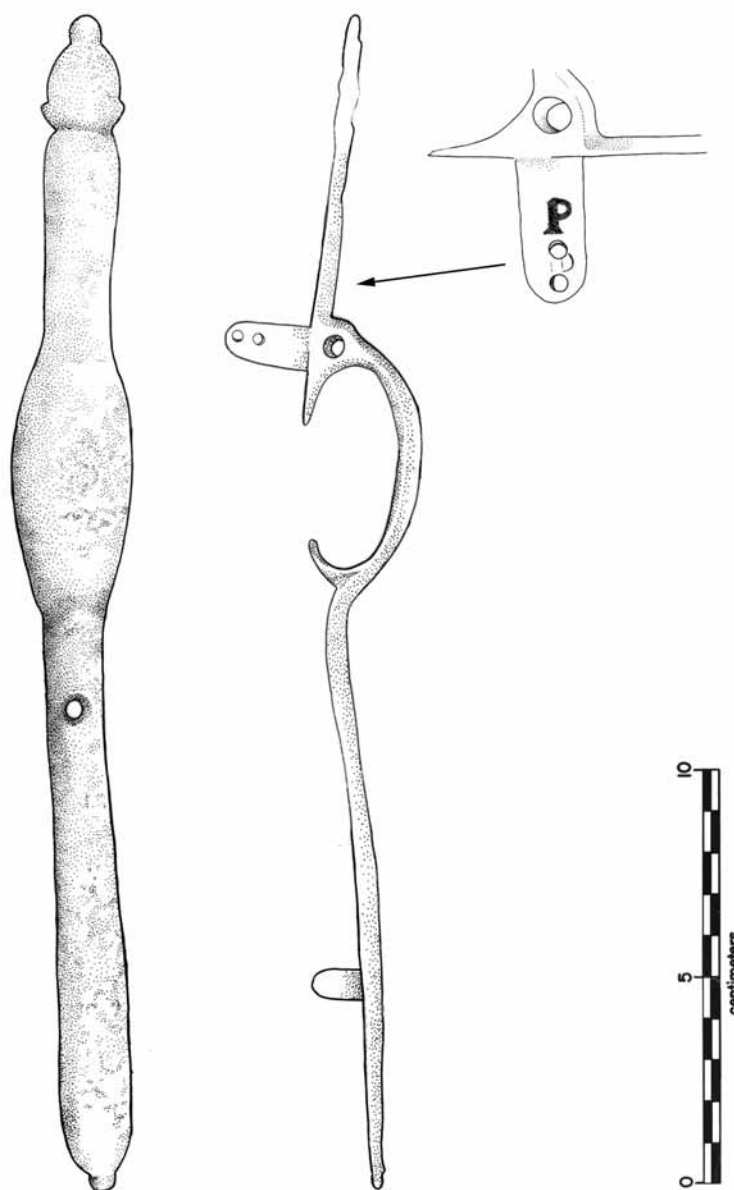
**14984****Cupreous Trigger Guard**Length: ~10 ⁵/₈ in (26.60 cm)

Location: datum 1

Width: 1 in (2.51 cm)

Condition: good

The complete trigger guard is of cast and filed brass. It was attached to the stock through two countersunk screw holes on the rear tang and a single lug in the fore tang. A hole on the fore edge of the bow, as it approaches the fore tang, is for the placement of a sling swivel. There are six file cuts on the rear tang and three file cuts at the tip of the fore tang.



14986-2

Cupreous Trigger Guard

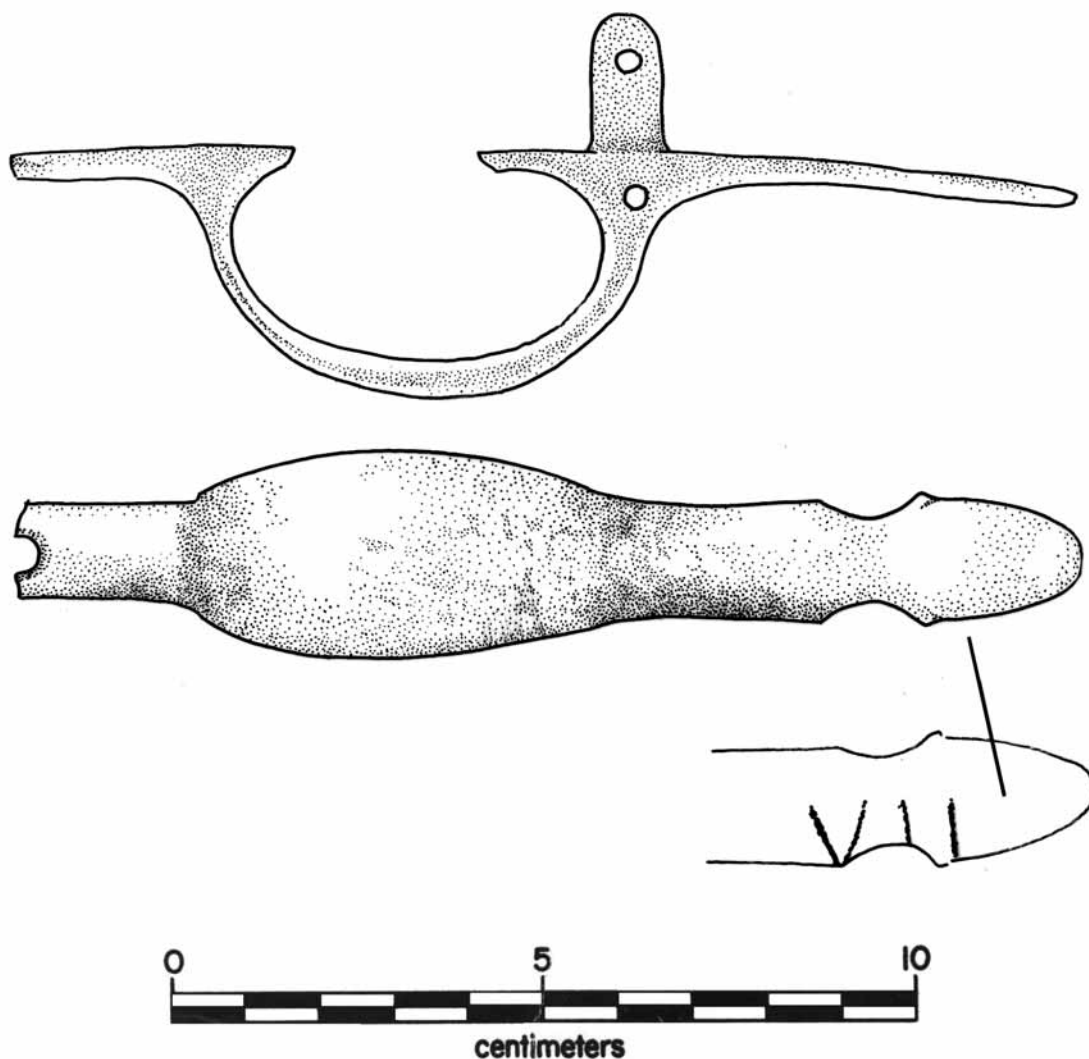
Length: 11 $\frac{3}{4}$ in (28.85 cm)

Location: datum 1

Width: 1 $\frac{1}{8}$ in (2.88 cm), bow

Condition: good

The complete trigger guard is of cast and filed brass. The attachment of the trigger guard to the stock is achieved through lugs, one in each tang, and a countersunk screw hole in the rear tang. A hole on the fore edge of the bow, as it approaches the forward tang, is for the placement of a sling swivel. A 'P' has been stamped into the attachment lug of the forward tang.



14989-2

Cupreous Trigger Guard

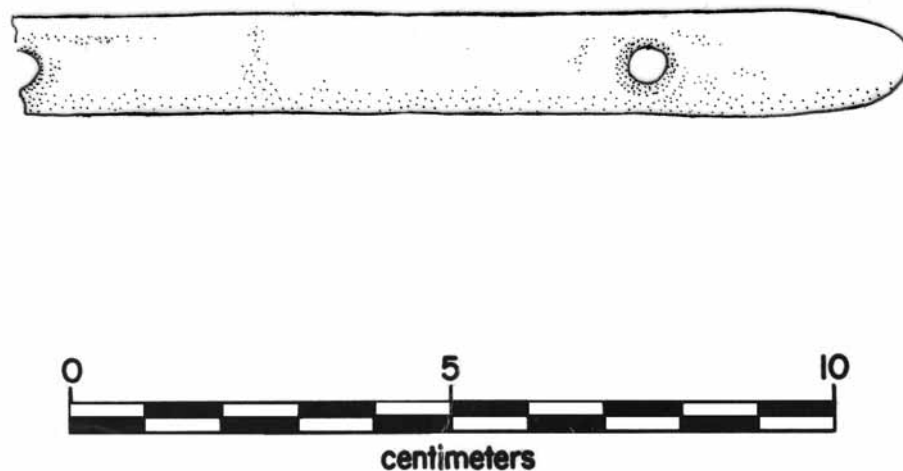
Length: 5 9/16 in (14.06 cm)

Location: datum 1

Width: 1 in (2.57 cm), bow

Condition: good

Cast and filed trigger guard is the fragment of the fore tang and bow. It is broken at the first of the two attachment holes on the rear tang. The surface is smooth and polished, no pitting, or corrosion is evident. On the interior surface of the fore tang are file cut marks of the Roman Numeral VII. This is a workshop assembly mark.



14994

Cupreous Trigger Guard

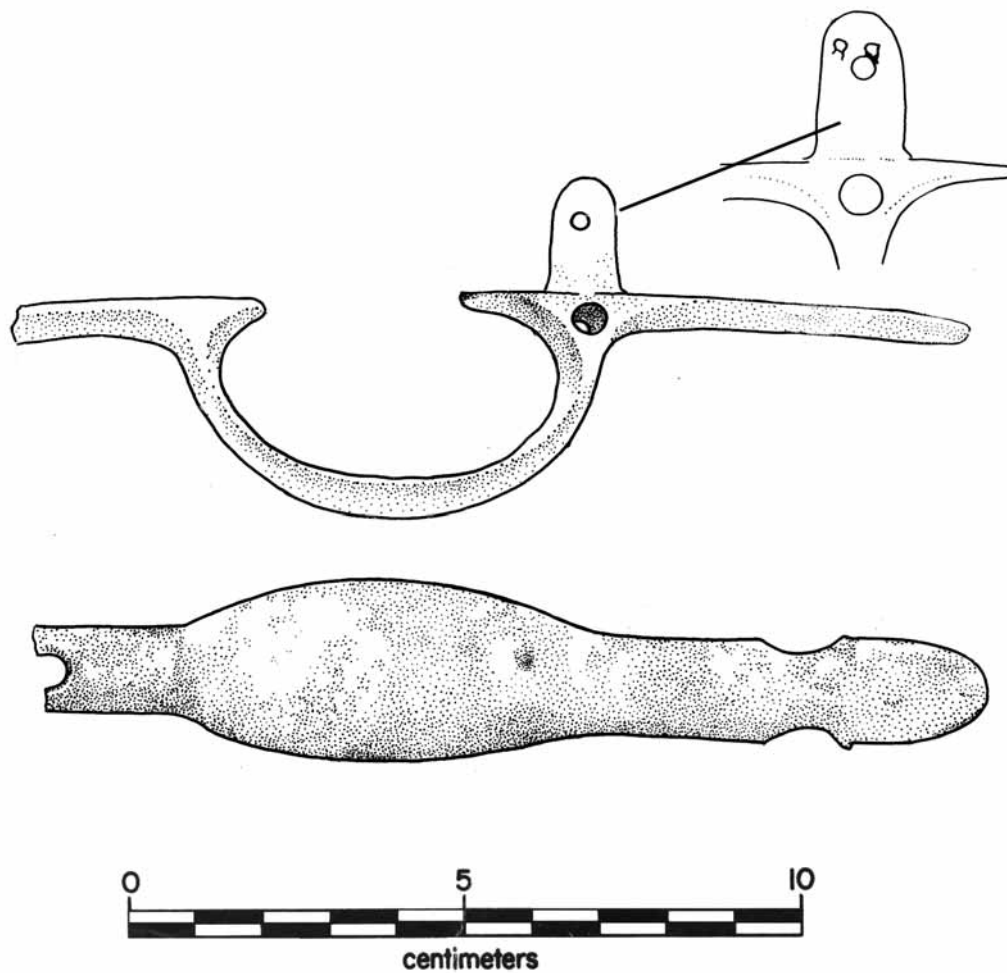
Length: 4 11/16 (11.88 cm)

Location: datum 1

Width: 9/16 in (1.37 cm)

Condition: good

The rear tang of a trigger guard is broken at the first of the two attachment holes. The trigger guard is of cast and filed brass. The surface is smooth and polished, no pitting, or corrosion is evident. The tang terminates in a simple rounded tip. Both attachment holes are countersunk. A partial screw fragment was removed from one of the holes.



14995-2

Cupreous Trigger Guard

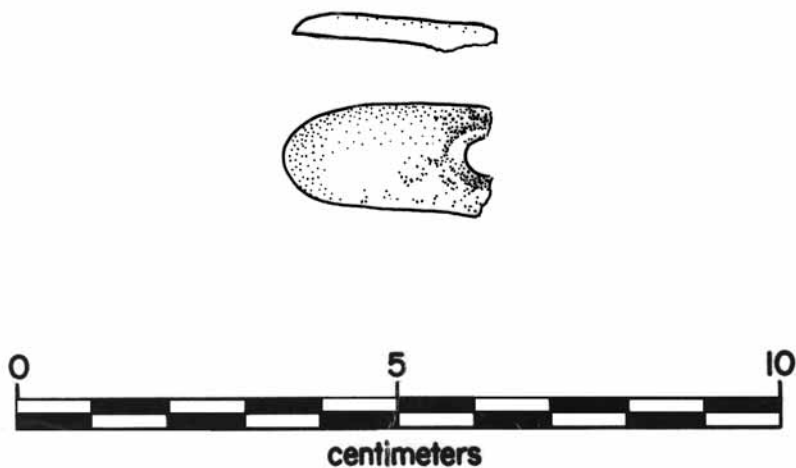
Length: 4 15/16 (14.35 cm)

Location: datum 1

Width: 1 in (2.52 cm)

Condition: good

The India Pattern trigger guard is broken at the first attachment hole of the rear tang. The rounded surface is polished. The tang terminates in a simple rounded tip. Both attachment holes are countersunk. The fore tang lug is marked with two letters; an 'R' and a second which is not readable.



14995-5

Cupreous Trigger Guard

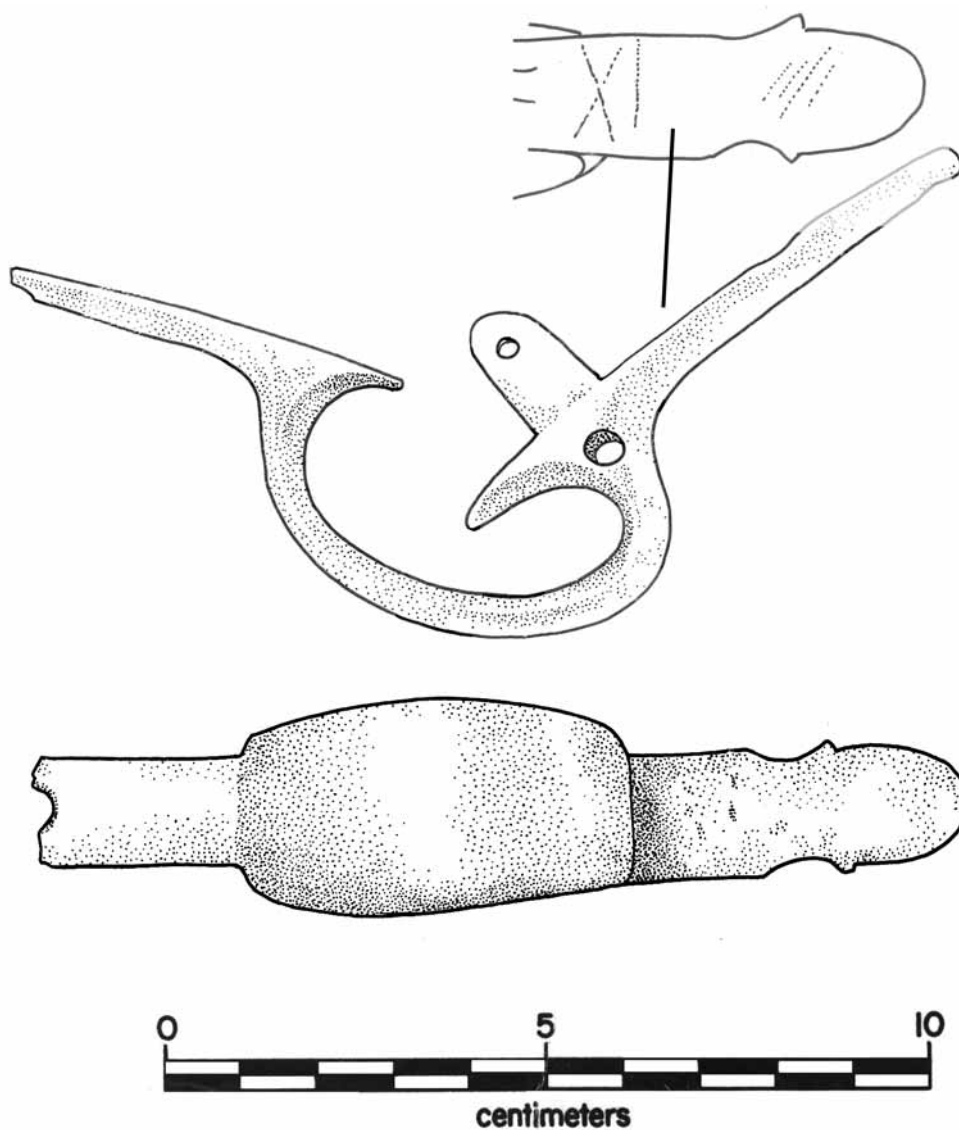
Length: 1 $\frac{1}{8}$ in (2.71 cm)

Location: datum 1

Width: $\frac{5}{8}$ in (1.50 cm)

Condition: good

Cast and filed trigger guard fragment is the tip of the rear tang. The break occurs at the attachment hole. The surface is smooth and polished, no pitting, or corrosion is evident. Thickness of the trigger guard is $\frac{1}{8}$ in (.35 cm).



14995 – 7

Cupreous Trigger Guard

Length: 5 in (12.71cm)

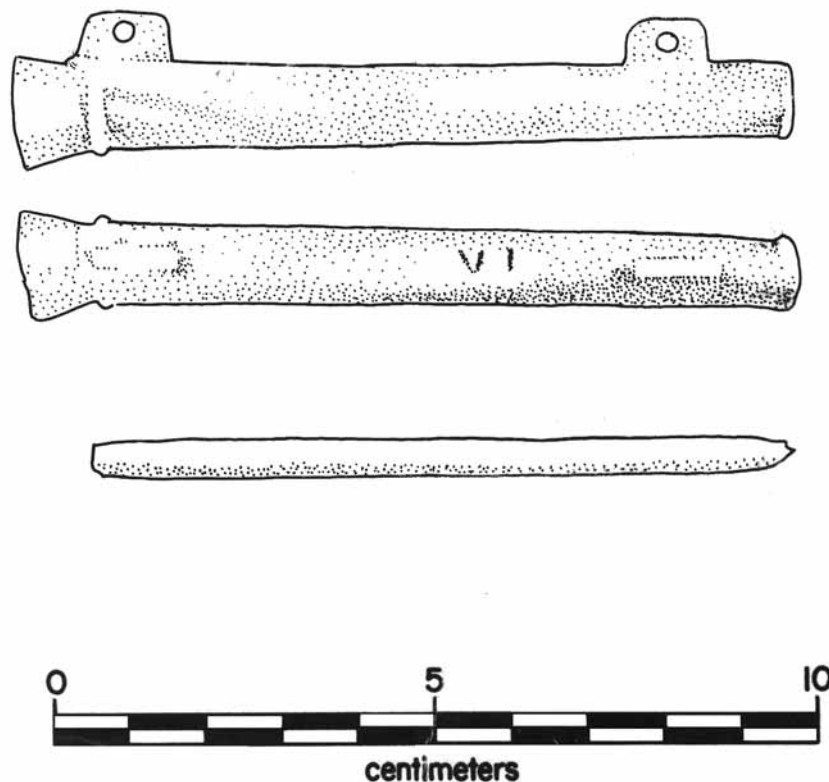
Location: datum 1

Width: 1 in (2.50 cm)

Condition: fair

Cast and filed trigger guard is the fragment of the fore tang and bow. It is broken at the first of the two attachment holes on the rear tang. The surface is smooth and polished, no pitting, or corrosion is evident. On the interior surface of the fore tang are file cut marks of the Roman Numeral XI. This is a workshop assembly mark. The trigger guard is severely bent at the front of the bow.

MISCELLANEOUS FURNITURE



14935

Brass Forepipe and Iron Ramrod

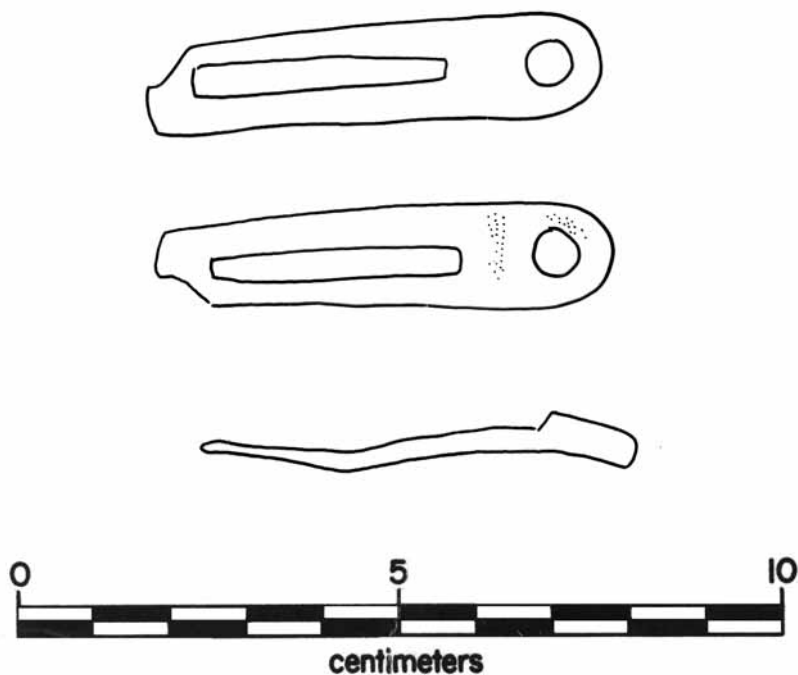
Length: 4 in (10.40 cm)

Location: datum 2

Diameter: 7/16 in (1.08 cm), shaft

Condition: good

Diameter of funnel end is $\frac{5}{8}$ in (1.44 cm). Diameter of pipe distal end is $\frac{7}{16}$ in (1.00 cm). Attachment lugs measure $\frac{7}{16}$ and $\frac{1}{2}$ in (1.09 and 1.18 cm) in length with a thickness of approximately $\frac{1}{16}$ in (.22 cm). The ramrod diameter is $\frac{1}{4}$ in (.55 cm). On the upper surface, stamped between the attachment lugs, is the Roman Numeral VI. This is a workshop assembly mark.



14937

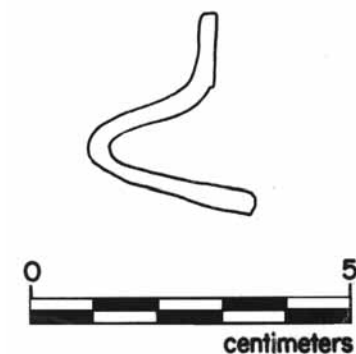
Brass Trigger PlateLength: $2 \frac{3}{8}$ in (6.05 cm)

Location: datum 7

Width: $\frac{9}{16}$ in (1.45 cm)

Condition: fair

Brass trigger plate. The plate tapers from $\frac{9}{16}$ in (1.45 cm) to $\frac{7}{16}$ in (1.00 cm). The slot for the trigger measures $1 \frac{3}{8} \times \frac{3}{16}$ in (3.45 x .45 cm). Thickness of the plate, at the insertion point for the screw, is $\frac{1}{4}$ in (.55 cm). Thickness at the distal end is $\frac{1}{16}$ in (.15 cm).

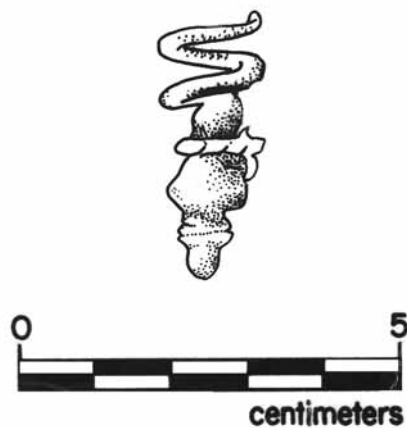
**14981-4****Sling Swivel**

Length: 1 ¼ in (3.20 cm)

Width: 1 ⅛ in (2.75 cm)

Location: midway between datums 1 and 3

The sling swivel was attached to a Short Land Patten trigger guard. The iron had completely degraded, leaving a void in the concretion that was filled using an epoxy resin. This artifact is a replica of the original object. The thickness of the swivel wire is ⅛ in (.30 cm).

**14984-3****Ramrod Worm**

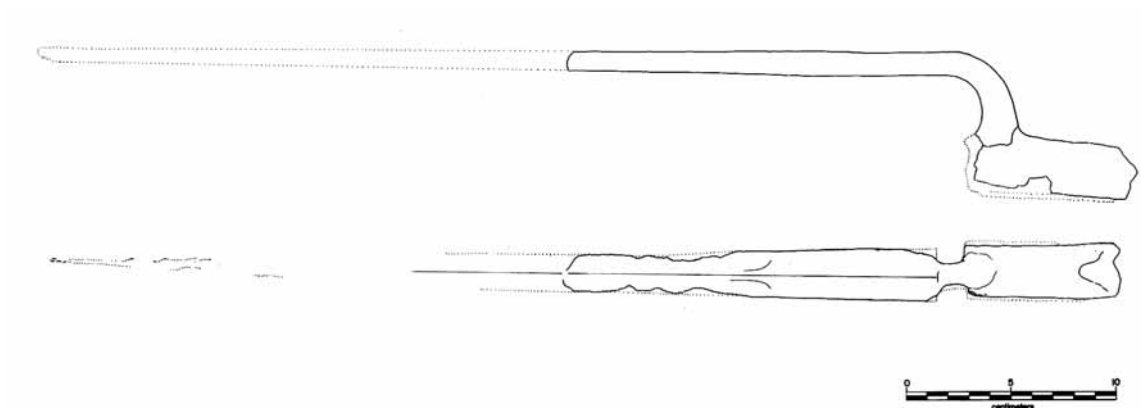
Length: 1 ⅜ in (3.65 cm)

Width: 9/16 in (1.47 cm)

Location: datum 1

The ramrod worm was concreted next to a saber blade and an India Pattern trigger guard. The condition of the artifact was incredibly poor. A mold was made of the artifact and filled with an epoxy resin. This artifact is a replica of the original object.

EDGED WEAPONS



14910

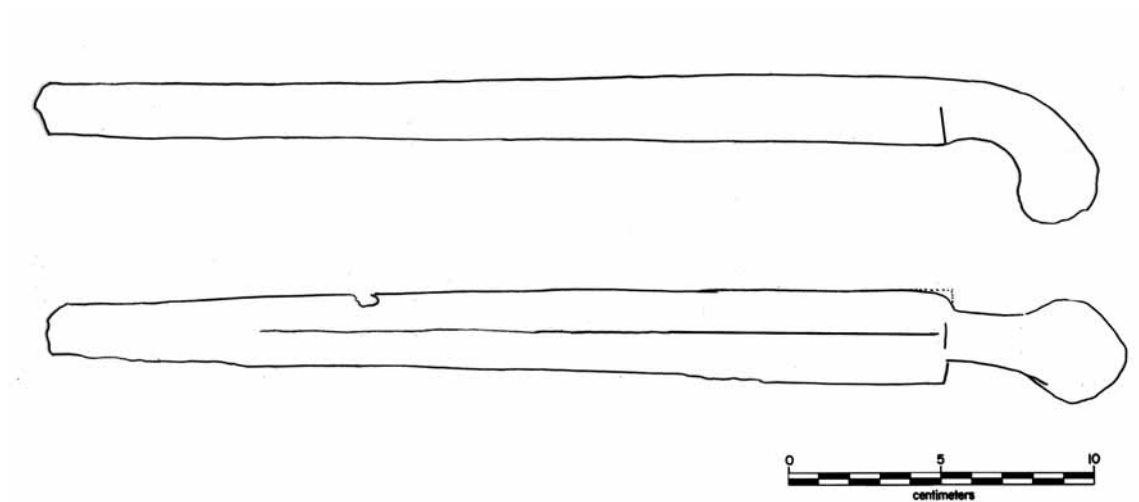
Bayonet Fragment

Length: 20 ½ in (52.20 cm)

Location: datum x

Condition: poor

The socket bayonet is almost complete. The remaining socket is the concretion of the internal circumference, no metal surface remains. The preserved internal diameter of the socket is 15/16 in (2.46 cm). The remaining socket is 3 in (7.52 cm) in length and is broken before the locking slot. The triangular blade is approximately 17 ½ in (44.70 cm) long. The blade width is 1 in (2.55 cm).



14911

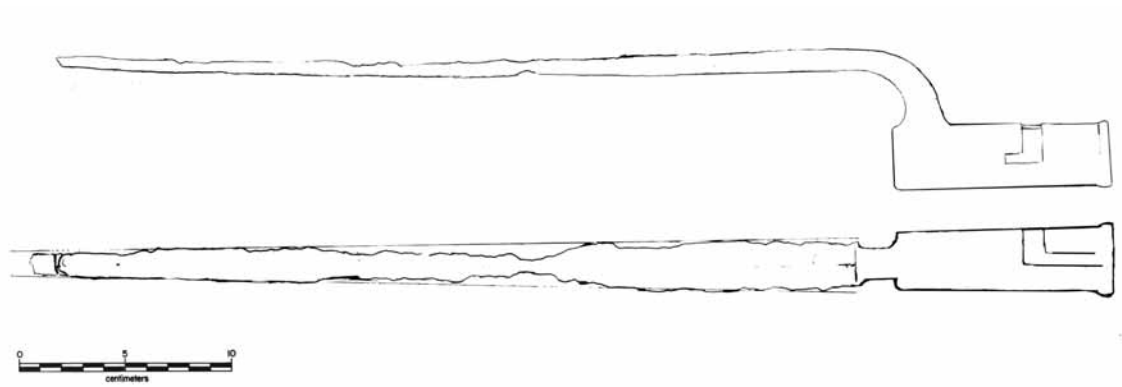
Bayonet Fragment

Length: 11 $\frac{3}{4}$ in (29.91 cm)

Location: datum x

Condition: poor

The bayonet fragment is of an incomplete blade with no stock. The width of the blade is 1 $\frac{1}{16}$ in (4.45 cm). No marks are visible.



14992

Bayonet Fragment

Length: $20 \frac{1}{3}$ in (51.62 cm)

Location: datum 6

Condition: poor

Iron socket bayonet. The bayonet has a complete socket length, though the blade is broken at the tip. The socket measures 4 in long, with a diameter of $1 \frac{1}{4}$ in at the muzzle end and 1 inch near the blade shoulder. The blade length, though incomplete is $15 \frac{1}{2}$ in. The internal diameter of the socket is $\frac{15}{16}$ in.

14980 **Saber Fragment**

Length: 10 5/16 in (25.90 cm)

Width: 1 5/16 – 1 ¼ in (3/45 – 3.22 cm)

Location: midway between datums 1 and 3

Condition: poor

14984-2 **Saber Fragment**

Length: 14 5/8 in (41.70 cm)

Width: 1 ¼ in (3.11 cm)

Location: datum 1

Condition: poor

The saber blade has triple fullers on both sides of the blade. The preservation of the original blade was incredibly poor. A mold was made of the blade during mechanical cleaning. An epoxy replica of the blade was created with the mold.

14988-9 **Saber Fragment**

Length: 5 ¾ in (14.50 cm)

Width: 1 ½ in (3.66 cm)

Location: datum 1

Condition: poor

Saber blade in poor condition. Object was cast, only one side had remnants of the original surface. There are three fullers.

14995-4 **Saber Fragment**

Length: 8 9/16 in (21.90 cm)

Width: 1 ¼ in (3.17 cm)

Location: datum 1

Condition: poor

The saber blades have triple fullers on both sides of the blade. The preservation of the original blade was incredibly poor. A mold was made of the blade during mechanical cleaning. An epoxy replica of the blade was created with the mold.

ARTILLERY SHOT (see table 5)

14901 Bar Shot

Length: 22 ½ in (57.00 cm)

Width: 2 ¼ in (5.7 cm)

Location: datum 2

Condition: fair

Cast iron bar shot with a hexagonal shaft. Each facet of the hexagonal shaft measures 1 ¼ in (3.10 cm). Length of the central shaft is 10 ½ in (26.50 cm). At the end of the shaft, on each side, the shaft tapers outward an additional 1 ⅜ in (3.40 cm) before again straightening outward an additional ½ in (1.20 – 1.30 cm) to the end. The larger ends of shot are hexagonal until the final ½ in lip at the ends of the shot. At this juncture the shot has an almost cylindrical diameter of approximately 5 in diameter (12.90 x 13.20 cm). The bar shot weighs 18 lbs (8.16 kg).

14904-2 Lead Shot (7)

Diameter: .68 - .69 in (1.72 – 1.74 cm)

Weight: (30.21 - 31.33 g)

Location: no provenience

Condition: good

14908 Lead Shot (8)

Diameters: .65 - .69 in (1.65–1.76 cm)

Weight: (25.86 – 32.53 g)

Location: datum x

Condition: good

Condition: good

14988-6**Lead Shot**

Diameter: .70 in (1.79 cm)

Location: datum 1

Weight: 31.51 g

Condition: fair

14989-5**Lead Bird Shot (2)**

Diameters: .16 - .17 in (.41, .42 cm)

Weight: (.41 - .49 g)

Location: datum 1

Condition: good

14993-5**Lead Bird Shot (3)**

Diameters: 3/16 in (.39, .40, and .41 cm)

Weight: (.36, .38, and .42 g)

Location: datum 1

Condition: good

NP/AR-1**Iron Cannister Shot (2)**

Diameters: 1.57 – 1.58 in (3.99 – 4.01 cm)

Weights: 1 ½ lbs

Location: no provenience

Condition: fair

NP/AR-2**Lead Shot (7)**

Diameters: .68 - .70 (1.73-1.79 cm)

Weights: (30.7 – 31.44 g)

Location: no provenience

Condition: fair

COPPER SHEATHING

14904 Copper Sheathing (3)

Length

Sheet 1: 17 11/16 in (45.10 cm)

Piece 2: 5 5/8 in (14.30 cm)

Piece 3: 3 1/8 in (8.00 cm)

Width

Sheet 1: 5 1/4 in ((13.20 cm), folded

Piece 2: 2 5/8 in (6.60 cm), folded

Piece 3: 2 5/8 in (6.80 cm)

Location: no provenience

Condition: fair

14925 Copper Sheathing

Length: 21 1/2 (54.8 cm), folded

Width: 11 7/16 (29.00 cm), folded

Location: datum x

Condition: good

Copper sheathing has one preserved edge. There are 17 holes along the edge that have been punched for the sheathing tack. These holes are placed an average of 1/8 inch (.20-.40cm) from the edge. These nail holes are spaced 1 -1 1/2 in (2.6-3.9 cm) apart. The length of the sheet, unfolded, is 28 15/16 in (74.70 cm). The thickness of the sheathing, at the edge, is 1/8 in (.20 cm). A small fragment of planking, 14925-2, was attached to the sheathing.

14925-2 Plank

Length: 6 3/8 in (16.20 cm)

Width: 4 1/2 in (11.50 cm)

Thickness: 1 7/16 in (3.65 cm)

Location: datum x

Condition: poor

14997-2 **Ferrous Thimble**

Length: 4 3/16 in (10.57 cm)

Width 1 5/8 in (4.17 cm)

Location: datum 2

Condition: poor

Diameter of the thimble is not complete, only about 2/3 of the original diameter is extant. There are no original edges. A two layered canvas piece was attached to the outer surface of the thimble.

14997-2.1 **Canvas**

Length: 8 1/4 in (21.00 cm)

Width: 9/16 in (3.98 cm)

Thickness 1/32 in (.13 cm)

Location: datum 2

Condition: fair

Double layered canvas piece. Canvas followed interior circumference of ramrod thimble.

IRON STOCK**14985** **Ferrous Bar Stock**

Length: 14 5/16 (39.4 cm)

Width: 2 in (5.04 cm)

Thickness: 7/16 in (1.05 cm)

Location: datum 1

Condition: Incomplete, broken at both ends.

14987 **Ferrous Bar Stock**

Length: 85 1/4 in (216.50 cm)

Width: 2 in (5.03cm)

Thickness: 6/16 in (1.06 cm)

Location: datum 1

Condition: fair

14990

Ferrous Bar Stock

Length: 46 in (117 cm)

Width: 2 in (5.02 cm)

Thickness: 7/16 in (1 cm)

Location: datum 1

Condition: Incomplete, broken at both ends, bent.

14991

Ferrous Bar Stock

Length: 17 1/8 in (43.50 cm)

Width: 1 3/4 in (4.27 cm)

Thickness: 7/16 in (1.00 cm)

Location: 1.00 m from datum 3

Condition: Broken at both ends, incomplete.

FASTENERS

14903-3

Cupreous Nail

Length: ~ 1/2 in (1.33 cm)

Width: 1/8 in (.39 x .43 cm)

Head: 7/16 in (1.11 cm)

Location: datum 1

Condition: fair

14905

Cupreous Spike

Length: 5 1/4 in (13.20 cm)

Shank Width: 5/16 x 5/16 (.75 x .75 cm)

Head Dimension: $\frac{1}{2}$ in (1.15 x 1.20 cm)

Location: datum x

Condition: fair

Complete mixed alloy spike. Head is flat and square in cross section measuring $\frac{1}{2}$ in (1.20 x 1.15 cm). Shank tapers to $\frac{1}{8}$ x $\frac{3}{16}$ in (.3 x .5 cm).

14906 **Cupreous Spike**

Length: 5 $\frac{9}{16}$ in (14.10 cm)

Shank Width: $\frac{3}{8}$ x $\frac{3}{8}$ in (.95 x .95 cm), neck

Head Dimension: 1 $\frac{3}{16}$ x $\frac{7}{8}$ in (2.00 x 2.10 cm)

Location: datum 6

Condition: fair

Large mixed alloy spike. Head of spike is square in cross-section with slightly rounded edges and slightly convex head. Tapers to approximately $\frac{1}{8}$ x $\frac{1}{8}$ in (.42 x .39 cm).

14909-2 **Cupreous Tack**

Length: $\frac{1}{2}$ in (1.23 cm)

Shank Width: $\frac{1}{8}$ x $\frac{1}{8}$ in (.34 x .34 cm), neck

Head Diameter: $\frac{7}{16}$ in (.99 cm)

Location: datum x

Condition: fair

14925-1.2 **Cupreous Nails**

Length

Nail 1: 1 $\frac{1}{8}$ in (2.79 cm)

Nail 2: 1 $\frac{1}{16}$ in (2.61 cm)

Nail 3: 1 in (2.46 cm)

Nail 4: $\frac{3}{4}$ in (2.21 cm)

Nail 5: $\frac{13}{16}$ in (2.12 cm)

Shank WidthNail 1: $\frac{1}{8}$ x $\frac{1}{8}$ in (.25 x .25 cm)Nail 2: $\frac{1}{8}$ x $\frac{1}{8}$ in (.29 x .29 cm)Nail 3: $\frac{1}{8}$ x $\frac{1}{8}$ in (.31 x .28 cm)Nail 4: $\frac{1}{16}$ x $\frac{1}{8}$ in (.23 x .25 cm)Nail 5: $\frac{1}{8}$ x $\frac{1}{8}$ in (.26 x .26 cm)**Head Diameter**Nail 1: $\frac{3}{8}$ in (.94 cm)Nail 2: $\frac{3}{8}$ in (.92 cm)Nail 3: $\frac{3}{8}$ in (.95 cm)Nail 4: $\frac{5}{16}$ in (.83 cm)Nail 5: $\frac{3}{8}$ in (.95 cm)

Location: datum x

Condition: fair-good

14928**Cupreous Spikes (4)****Length**Spike 1: $4 \frac{7}{16}$ in (11.12 cm)

Spike 2: 3 in (7.56 cm)

Spike 3: $2 \frac{7}{16}$ in (6.10 cm)Spike 4: $1 \frac{3}{8}$ (3.43 cm)**Shank Width**Spike 1: $\frac{5}{16}$ x $\frac{7}{16}$ in (.77 x 1.00 cm)Spike 2: $\frac{1}{4}$ x $\frac{1}{4}$ in (.64 x .64 cm)Spike 3: $\frac{1}{4}$ x $\frac{5}{16}$ in (.64 x .67 cm)Spike 4: $\frac{1}{4}$ x $\frac{1}{4}$ in (.57 x .57 cm)**Head Dimension**Spike 1: $\frac{1}{2}$ x $\frac{9}{16}$ in (1.23 x 1.34 cm)

Spike 2: NA

Spike 3: NA

Spike 4: NA

Location: datum x

Condition: fair

Four mixed alloy spikes; one is complete the remaining three are fragments. The fragments are of the tip of the spike.

14927-2 **Cupreous Nail**

Length: 15/16 in (2.41 cm)

Shank Width: $\frac{1}{8} \times \frac{1}{8}$ in (.33 x .35 cm), neck

Head: (.83 cm)

Location: datum x

Condition: fair

14935-2 **Cupreous Spike**

Length: 5 $\frac{1}{4}$ (13.20 cm)

Shank Width: $\frac{5}{16} \times \frac{3}{8}$ in (.79 x .91 cm), neck

Head: $\frac{1}{2} \times \frac{1}{2}$ in (1.15 x 1.22 cm)

Location: datum 2

Condition: fair

A complete mixed alloy spike. The spike is bent at an angle of 10°, slightly above the middle. Spike head is in poor condition, not maintaining a fine edge, but instead is jagged and damaged.

14936 **Cupreous Spikes (3)**

Length

Spike 1: 5 in (13.25 cm)

Spike 2: 4 $\frac{1}{4}$ in (11.15 cm)

Spike 3: 2 $\frac{1}{8}$ in (5.35 cm)

Shank Width

Spike 1: $\frac{3}{8} \times \frac{7}{16}$ in (.87 x 1.00 cm)

Spike 2: $\frac{3}{8} \times \frac{3}{8}$ in (.90 x .95 cm)

Spike 3: $\frac{1}{4} \times \frac{1}{4}$ in (.65 x .65 cm)

Head Dimension:Spike 1: $\frac{1}{2} \times \frac{9}{16}$ in (1.30 x 1.37 cm)Spike 2: $\frac{1}{2} \times \frac{1}{2}$ in (1.25 x 1.27 cm)

Spike 3: NA

Location: datum x

Condition: fair

Three mixed alloy spikes; a large spike, a small spike, and fragment of the tip. Spike 2 is slightly bent towards the neck, at an angle of 4°.

14981-3**Ferrous Nails (3)****Length**

Nail 1: 3 in (7.65 cm)

Nail 2: 3 in (7.65 cm)

Nail 3: $2 \frac{5}{8}$ in (6.67 cm)**Shank Width, Neck**Nail 1: $\frac{3}{16} \times \frac{3}{16}$ in (.48 x .51 cm)Nail 2: $\frac{3}{16} \times \frac{1}{4}$ in (.45 x .52 cm)Nail 3: $\frac{3}{16} \times \frac{3}{16}$ in (.46 x .51 cm)**Head Dimensions**

Nail 1: NA

Nail 2: NA

Nail 3: $\frac{3}{8} \times \frac{5}{16}$ in (.90 x .76 cm)

Location: midway between datums 1 and 3

Condition: poor

14989-4**Cupreous Nails (5)****Length**Nail 1: $1 \frac{5}{16}$ in (3.25 cm)Nail 2: $1 \frac{5}{16}$ in (3.30 cm)

Nail 3: 1 in (2.55 cm)

Nail 4: $\frac{7}{8}$ in (2.23 cm)

Nail 5: 1 3/16 in (3.00 cm)

Shank Width, neck

Nail 1: 1/8 x 1/8 in (.32 x .32 cm)

Nail 2: 1/8 x 1/8 in (.32 x .32 cm)

Nail 3: 1/8 x 1/8 in (.32 x .32 cm)

Nail 4: 1/8 x 1/8 in (.28 x .28 cm)

Nail 5: 1/8 x 1/8 in (.35 x .37 cm)

Head Diameter

Nail 1: 3/8 in (.93 cm)

Nail 2: 3/8 in (.96 cm)

Nail 3: 5/16 in (1.06 cm)

Nail 4: NA

Nail 5: 5/16 in (.78 cm)

Location: datum 1

Condition: fair

14989-7

Ferrous Nail

Length: 1 3/16 (3.05 cm)

Shank Width: ~3/16 x 3/16 in (.45 x .45 cm)

Location: datum 1

Condition: poor

14989-7

Cupreous Pins (2)

Length: 1/2 in (1.39, 1.35 cm)

Location: datum 1

Diameter: 1/16 in (.07, .08 cm)

Condition: good

Two pins, incomplete. Both fragments are of the tip.

14992-7

Cupreous Nail

Length: 1 1/8 in (2.74 cm)

Shank Width: 1/8 x 1/8 in (.29 x .29 cm), neck

Head Diameter: 3/8 in (.87 cm)

Nail 4: 1 ¼ in (3.20 cm)

Nail 5: 1 ¼ in (3.13 cm)

Nail 6: 1 ⅛ in (2.83 cm)

Nail 7: 13/16 in (2.13 cm)

Shank Width

Nail 1: ⅛ x ⅛ in (.32 x .33 cm)

Nail 2: 1/16 x ⅛ in (.21 x .25 cm)

Nail 3: ⅛ x ⅛ in (.29 x .33 cm)

Nail 4: ⅛ x ⅛ in (.28 x .30 cm)

Nail 5: ⅛ x ⅛ in (.30 x .30 cm)

Nail 6: ⅛ x ⅛ in (.27 x .30 cm)

Nail 7: ⅛ x ⅛ in (.30 x .32 cm)

Head Diameter

Nail 1: ⅜ in (.89 cm)

Nail 2: ⅜ in (.87 cm)

Nail 3: ⅜ in (.92 cm)

Nail 4: ⅜ in (.92 cm)

Nail 5: ⅜ in (.91 cm)

Nail 6: ⅜ in (.92 cm)

Nail 7: ⅜ in (.88 cm)

Location: no provenience

Condition: good

NP/CU-3.1

Cupreous Nail

Length: 1 ¼ in (3.20 cm), slightly bent

Shank Width: 3/8 in (.35 x .35 cm), neck

Head Diameter: 7/16 (.95 cm)

Location: no provenience

Condition: fair

NP/CU-4:

Cupreous Nail

Length: 7/8 in (2.35 cm), slightly bent

Shank Width: $\frac{1}{8}$ in (.30 x .30 cm), neck

Head diameter: $\frac{3}{8}$ in (.92 cm)

Location: no provenience

Condition: fair

NP/CU-5 **Cupreous Nail**

Length: $1 \frac{1}{8}$ in (2.90 cm)

Shank Width: $\frac{1}{8}$ x $\frac{1}{8}$ in (.35 x .35 cm), neck

Head Diameter: $\frac{3}{8}$ in (.90 cm)

Location: no provenience

Condition: fair

NP/CU-6 **Cupreous Nail**

Length: $\frac{15}{16}$ in (2.30 cm)

Shank Width: $\frac{1}{8}$ x $\frac{1}{8}$ in (.28 x .28 cm), neck

Head Diameter: $\frac{3}{8}$ in (.85 cm)

Location: no provenience

Condition: fair

NP/CU-7 **Cupreous Spikes (2)**

Length

Spike 1: $4 \frac{7}{16}$ in (11.27 cm)

Spike 2: $2 \frac{3}{4}$ in (6.95), incomplete

Shank Width

Spike 1: $\frac{5}{16}$ x $\frac{3}{8}$ in (.77 x .88 cm)

Spike 2: $\frac{1}{4}$ x $\frac{5}{16}$ in (.60 x .70 cm)

Head Dimension

Spike 1: $\frac{1}{2}$ x $\frac{1}{2}$ in (1.20 x 1.27 cm)

Spike 2: NA

Location: no provenience

Condition: fair

Condition: poor

14927

Bone Handle

Length: 3 5/16 in (8.50 cm)

Width: 7/8 in (2.36 cm), base

Thickness: 9/16 in (1.50 cm)

Location: datum x

Condition: fair

14983-2

Rope

Length: 2 3/8 in (6.03 cm)

Diameter: 5/8 in (1.67 cm)

Location: datum 1

Condition: poor

14988-8

Rope

Length: 7/8 in (2.30 cm)

Width: 7/8 in (2.25 cm)

Location: datum 1

Condition: poor

14989-6

Dunnage (2)

Length: (1.31 cm, 1.34 cm)

Width: (.05 cm, .16 cm)

Two small dunnage fragments with a small branch-like matrix.

14903-2

Dunnage (3)

Length

Branch dunnage: 7/16 – 2 in (1.10 - 5.00 cm)

Straw dunnage: 13/16 in (7.12 cm)

Width

branch dunnage: $1/32 - 1 \frac{3}{16}$ in (.05 - .300 cm)

Straw dunnage: 1 in (2.62 cm)

Location: datum 1

Condition: fair

Dunnage concreted to an India Pattern musket fragment.

14981-2 Wood Fragments (6)

Length: $1/16 - 9/16$ in (.08 - 1.60 cm)

Width: $1/16 - 1/4$ in (.12 - .60 cm)

Location: midway between datums 1 and 3

Six small isolated wood fragments located in the proximity of a Short Land Pattern trigger guard.

14988-5 Dunnage (18)

Length: $7/8 - 4 \frac{3}{4}$ in (2.20 - 12.10 cm)

Width: $1/32 - 1/2$ in (.03 - 1.32 cm)

Location: datum 1

Condition: good

Multiple size dunnage fragments of straw and branch materials. Dunnage was located along side Spanish barrel fragment.

14996-6 Dunnage (53)

Length: $1/32 - 7/8$ in (.04 - 2.15 cm)

Width: $1/32 - 1/4$ (.05 - .68 cm)

Location: datum 2

Condition: fair

14996-7 Wood Fragment

Length: $2 \frac{3}{8}$ in (6.02 cm)

Width: $\frac{1}{2}$ in (1.30 cm)

Location: datum 2

Condition: poor

Small wood fragment. Possibly a gun stock fragment.

MISCELLANEOUS

14993-4

Cupreous Hook Fastener

Length: (7/16 in) 1.18 cm

Width: $\frac{3}{8}$ in (.95 cm), head

Gage: 1/32 in (.07 cm)

Location: datum 1

Condition: good

14921

Cupreous Rod

Length: 5 $\frac{1}{2}$ in (14.04 cm)

Diameter: $\frac{1}{2}$ in (1.27 - 1.30 cm)

Location: datum x

Condition: good

14922

Cupreous Rod

Length: 9 $\frac{3}{8}$ in (23.30 cm)

Diameter: $\frac{1}{2}$ in (1.24 - 1.3 cm)

Location: datum x

Condition: good

Cupreous rod is not straight, it has an inconsistent diameter. The surface is pitted and the ends are rounded.

14989-3 **Lead Fish Net Weights (2)**

Length

Weight 1: 1 3/16 in (3.01 cm)

Weight 2: 1 3/16 in (3.07 cm)

Diameter

Weight 1: 5/16 in (.89 cm)

Weight 2: 5/16 in (.84 cm)

Location: datum 1

Condition: good

14912 **Ferrous Crossed Bars**

Length: 21 in (53.50 cm)

Width: 20 3/4 in (52.70 cm)

Thickness: 7/16 in (1.06 cm)

Location: datum 7

Condition: fair

Two iron pieces set perpendicularly and riveted together. Iron cross piece, no. 1, is 21 in (53.50 cm) long, 1 in (2.54 cm) wide, and between 3/8 and 7/16 in (.99 and 1.06 cm) thick. Iron cross piece, no. 2, is 20 3/4 in (52.70 cm) long, 1 3/16 in (2.98 cm) wide, and between 7/16 in (1.06 and 1.09 cm) thick. The attachment rivet has a diameter of 13/16 (2.10 cm). Each bar end is pierced with a hole of between 3/16 and 5/16 (.45 and .74 cm) diameter.

14988-7 **Unworked Gunflint**

Length: 1/58 in (4.18 cm)

Width: 1 1/8 in (2.80 cm)

Location: datum 1

Condition: good

BALLAST

14945 **Ferrous Pig Ballast**

Length: 29.13 in (74.00 cm)

Width: 5 13/16 in (14.80 cm)

Weight: 196 pounds (98 kilograms)

Location: between datums 1 and 5

Condition: good

Thickness is 4 13/16 in (12.20 cm). Two asymmetrical holes, running diagonally from the top face outward towards the outward faces at each end. These holes are asymmetrical; slightly larger on the top faces and narrowing towards the outside faces. Hole 1: ovular at top face 1 5/16 x 2 7/16 in (3.40 x 6.20 cm) tapering to a 5/8 in (1.60 cm) diameter hole. Hole 2 is ovular on the top face, 3 1/4 x 1 1/4 in (8.30 x 3.20 cm) tapering to a 1 1/4 in (3.20 cm) diameter end.

14997-3 **Stone**

Length: 9 3/8 in (23.90 cm)

Width: 4 13/16 in (12.27 cm)

Greatest Thickness: 2 1/4 in (5.76 cm)

Location: datum 2

14982-2 **Stone**

Length: 4 1/2 in (11.5 cm)

Width: 3 9/16 in (9.05 cm)

Greatest Thickness: 2 13/16 in (7.17 cm)

Location: midway between datums 1 and 3

14985-2 **Stones (3)**

Length

Stone 1: 4 13/16 in (10.66 cm)

Stone 2: 2 1/2 in (6.46 cm)

Stone 3: 5 7/8 in (14.37 cm)

Width

Stone 1: $2 \frac{5}{8}$ in (6.68 cm)

Stone 2: $2 \frac{1}{4}$ in (4.92 cm)

Stone 3: $5 \frac{1}{2}$ in (14.03 cm)

Greatest Thickness

Stone 1: $1 \frac{7}{8}$ in (4.46 cm)

Stone 2: $\frac{13}{16}$ in (2.08 cm)

Stone 3: $3 \frac{3}{8}$ in (8.54 cm)

Location: datum 1

14993-6 **Stone**

Length: $3 \frac{1}{4}$ in (8.24 cm)

Width: 3 in (7.55 cm)

Greatest Thickness: $2 \frac{1}{4}$ in (5.83 cm)

Location: datum 1

14996-4 **Stones (2)**

Length

Stone 1: $3 \frac{7}{16}$ in (8.76 cm)

Stone 2: $4 \frac{1}{8}$ in (10.40 cm)

Width

Stone 1: $2 \frac{3}{8}$ in (6.11 cm)

Stone 2: $3 \frac{11}{16}$ in (9.36 cm)

Greatest Thickness

Stone 1: $1 \frac{1}{4}$ in (3.23 cm)

Stone 2: $2 \frac{1}{4}$ in (5.92 cm)

Location: datum 2

14997-3 **Stone**

Length: $6 \frac{3}{16}$ in (15.8 cm)

Width: $4 \frac{7}{8}$ in (12.52 cm)

Greatest Thickness: $1 \frac{3}{4}$ in (4.52 cm)

Location: datum 2

NP/ST-1

Stone

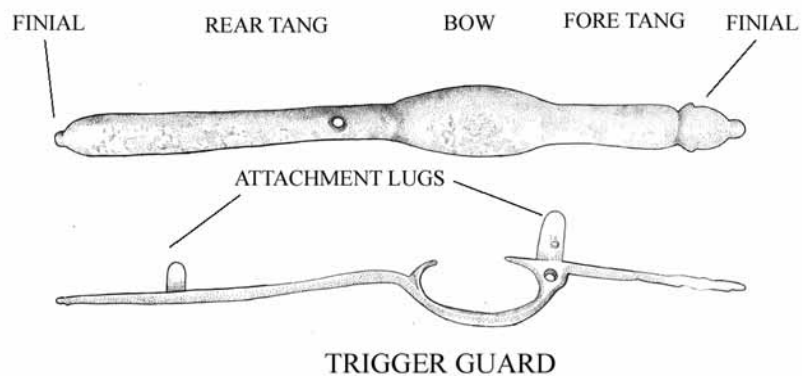
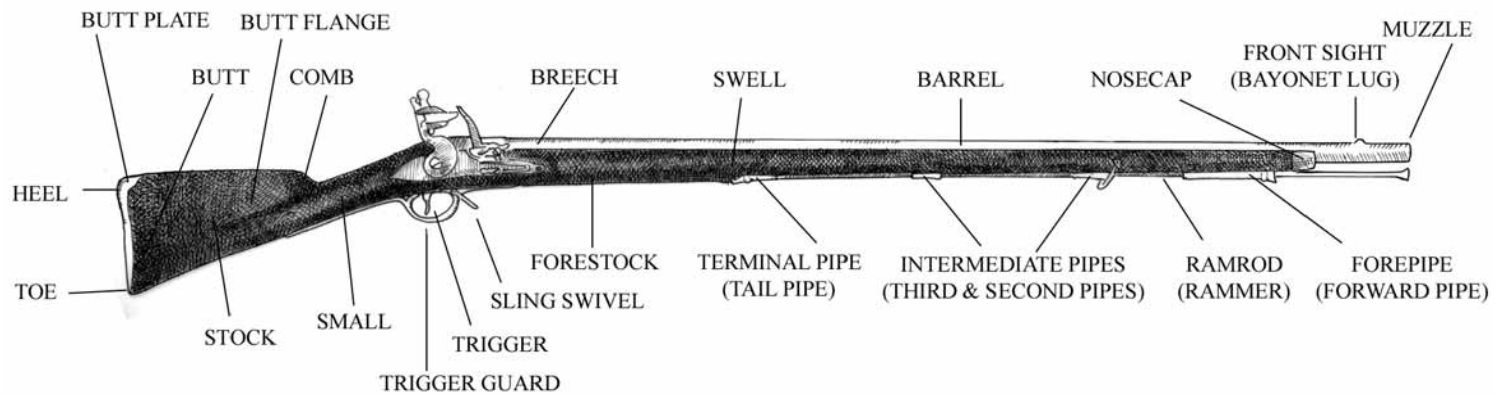
Length: $5 \frac{15}{16}$ (15.05 cm)

Width: $1 \frac{15}{16}$ (4.90 cm)

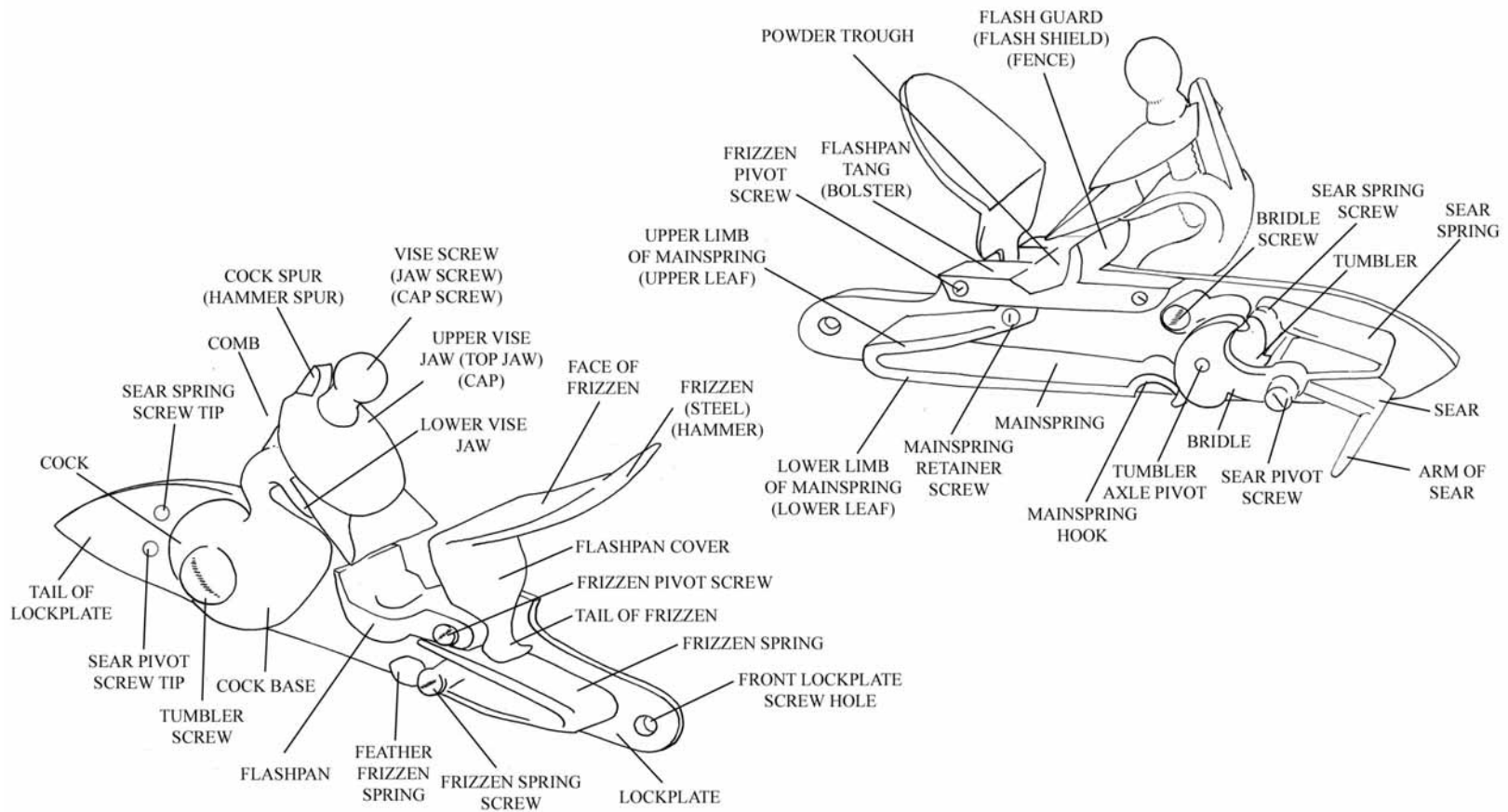
Thickness: $\frac{3}{4}$ - $1 \frac{1}{4}$ in (2.0 - 3.2 cm)

Location: no provenience

APPENDIX VII
NOMENCLATURE



Firearm Nomenclature. *Illustration of the musket is after Norman and G. M. Wilson. Treasures from the Tower of London, 108. Trigger guard illustration is of artifact 14986-2. Illustrations by A. Borgens.*



Lock Nomenclature. *Illustrations of artifact 14982 by A. Borgens.*

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