DESCRIPTION AND ANALYSIS OF FLINTLOCK PISTOLS RECOVERED
FROM A SEVENTEENTH-CENTURY SHIPWRECK
ON PEDRO BANK, JAMAICA

A Thesis
by
LISA LYNN GARICEN

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DESCRIPTION AND ANALYSIS OF FLINTLOCK PISTOLS RECOVERED
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LISA LYNN GARIGEN

Approved as to style and content by:

D. L. Hamilton
(Chair of Committee)

Kevin Crisman
(Member)

James Bradford
(Member)

Vaughn M. Bryant, Jr.
(Head of Department)

December 1991
Description and Analysis of Seventeenth-Century Flintlock
Pistols from Pedro Bank, Jamaica. (December 1991)
Lisa Lynn Garigen, B.A., SUNY at Binghamton
Chair of Advisory Committee: Dr. D. L. Hamilton

In this thesis, I will document, research and
describe the conservation of several concreted pistols in
order to formulate a definitive catalog of all the
pistols recovered from the Spanish fleet ship that sunk
in 1691 on Pedro Bank, Jamaica.

To this end, I will present a brief history of the
Spanish fleets to provide general knowledge about the
Tierra Firme fleet. Then, a brief description of the
excavations at Pedro Bank will be given. Following this,
I will discuss the history of the development of the
flintlock. Descriptions of the various conservation
methods used and their effects on the pistols will be
discussed next. From the research conducted on the
pistols conclusions will be drawn as to the pistols'
country of origin and their purpose on the vessel. In
the conclusion, I will refer to typology charts that
contain the descriptive data concerning the pistols, and
reconstruction drawings of the two different types of
pistols included in the conclusions. A complete catalog
of the pistols and pistol fragments will include
descriptions and drawings of each artifact.
DEDICATION

I would like to dedicate this thesis to my grandmother, Frances Pueckert Beck because she had a desire to learn and read about interesting and faraway places.
ACKNOWLEDGEMENTS

I wish to thank several people who have been helpful in my research. Dr. James Lavin gave me much insight on flintlocks and their history. Sheila Clifford patiently edited the majority of this work. Hawk Tolson and Peggy Leshiker-Denton helped with the conservation of some of the pistols, and Dr. James Parrent directed the excavation at Pedro Bank. I would like to thank my committee chair, Dr. D.L. Hamilton, for his help with the conservation. Also, I would like to thank my other committee members, Dr. Kevin Crisman and Dr. James Bradford, for their help and comments, and Dr. David Carlson for sitting in on my defence in Dr. Crisman’s absence. Last but not least, I would like to thank my mom for supporting and encouraging me through the years.
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CHAPTER I
INTRODUCTION

Flintlock pistols have a long and interesting history. They were developed in France in the first quarter of the 17th century and thereafter, their use spread rapidly. By the time the 1691 Tierra Firme Fleet was lost on Pedro Bank, the use of flintlock pistols was almost universal. They were being built throughout Europe and even in some parts of the New World; they were being issued to the military; and they were being traded to the Indians of North America. Therefore, it is not unusual that a number of flintlock pistols, which are the subject of the thesis, were on one of the ships of the 1691 Spanish Tierra Firme fleet.

There are several unusual aspects concerning the Pedro Bank pistols. For instance, the guns were packed in boxes of cacao beans (Geddes 1988:67). Another unusual aspect is their presence on a Spanish ship in such large numbers. While the flintlock was widely used throughout Europe, the miquelet, a variation of the flintlock, was preferred in Spain. The presence of a few flintlocks on a ship of the 1691 fleet would not be irregular, but the large number of pistols recovered (the minimum number recovered is 54, as determined by the

---This thesis follows the format of Historical Archaeology.
remains of the breech section of the stock) suggests that they were either cargo, smuggled contraband, or were for ship's defense.

Flintlock pistols have been recovered on few land sites and even a few underwater sites; however, there have been few pistols from the late 17th century recovered from archaeological sites. Because of this, these pistols comprise the largest collection of flintlock pistols from the late 17th century and are also the largest collection of firearms from a shipwreck of this same century.

Since the pistols were underwater for 300 years, the metal furniture and firing mechanism of the pistols have completely disintegrated, but the wooden stocks have been preserved almost completely intact. This is important because in most cases, wooden stocks disintegrate in land sites. Because of the excellent preservation I have been able to determine that there were two different types of pistols, traveling pistols (7 - 12 inches in length) and screw-barrelled pocket pistols (7 inches and under in length). A detailed description and analysis of the diagnostic features of the stocks as well as the metal parts will increase our knowledge of the development and technology of the pistols of that era. Since these important pistols were found on a ship bound for Spain, via Havana, Cuba, it is important that the Spanish fleet
system, and the rules and regulations that governed the
Spanish fleets to and from the New World be discussed in
order to put everything into historic perspective.
CHAPTER II
HISTORY OF THE SPANISH FLEETS

The Tierra Firme fleet and the New Spain Fleet were Spain's life line to the New World. During the first quarter of the 16th century, a ship could depart alone at any time of the year with no restrictions, though often times for safety, fleets of ships were organized. In 1561 the system of fleets was initiated because of the perils a lone ship was exposed to during the voyage (Haring 1966:13-14). Under the laws, two different fleets were organized to sail each year. Both fleets carried goods and necessities for the colonists, as Spain did not allow her colonists to trade directly with other nations, and carried back to Spain goods produced by the colonists. The goods shipped back to Spain included raw materials, jewels, precious metals, hides, tallow, hardwoods, indigo, tobacco, and currie shells (Radcliffe 1976:61). The New Spain Fleet sailed to Mexico, in the spring for the port of San Juan d'Ulloa in Vera Cruz. This fleet collected the treasures of all Mexico to carry back to Spain. After arriving in Mexico, it wintered there, along with the Tierra Firme Fleet, which stopped over in route from the South America and Central American colonies (Earle 1980:16; Haring 1966:14).
The Tierra Firme fleet left Spain later in the year, sometimes departing as late as August for the mainland of South America (Figure 1). The two main ports of call were Cartagena in Venezuela and Porto Bello in Panama, where most of the trading was done. Afterwards, the fleet sometimes wintered with the New Spain Fleet in Vera Cruz and both returned to Spain in the spring with the combined treasure, raw materials, and exports of the Spanish colonies (Haring 1966:14-19).

The system of fleets enjoyed a short heyday in the 16th century, but began to decline with the death of Philip II in 1598. Philip, an effective leader, was succeeded by several ineffective rulers who did not recognize the importance of a sea force (Haring 1964:213-217; Marx 1968:110-118).

There were other reasons for the decline of the fleets. In the New World, production of silver and gold fell off, diminishing the number of ships needed to transport goods back to Spain (Haring 1964:155). In Spain, there was a decline in the population due to disease, war, and emigration to the New World; thus fewer people meant less goods were needed and fewer ships were required to meet the diminished demand (Earle 1980:16-18).

Several other European countries including England, France and Holland began colonizing the more easterly
Figure 1. The Caribbean showing the major Spanish shipping route (after Hoyt 1984:101).
islands in the Caribbean and Antilles. Then, England captured Jamaica, in the heartland of the Spanish Caribbean, from Spain in 1655 and built a substantial stronghold at Port Royal, which also became a haven for pirates, privateers, and a large number of English merchants. These privateers and pirates often set their sights on Spanish Fleet ships for the treasure they carried; however, documents show that Spanish Fleet ships were rarely captured; the loss of ships came mostly from the elements (Radcliffe 1976:62). However, the merchants of Port Royal became an important factor in the trade relations with the Spanish colonists, even though much of the trade was illegal.

All of these separate events throughout the 17th century slowly brought the regular system of fleets to a halt. By the 1670s, the fleets were leaving port only at 2-3 year intervals. The frequency of the voyages and the number of ships making the voyage continued to diminish until the late 18th century when the crown declared free trade between all Spanish ports. The Fleet System ended with the return of the New Spain Fleet of 1778 (Parry 1979:286).

Most of the area of Pedro Bank offers little hazard to passing vessels, it is only when the vessels pass close to the southern tip of the reef that a ship is in danger. In this area, the reefs rise precipitously
causing vessels to run aground. The prevailing winds also are a problem as they tend to push vessel toward the nearly invisible reefs (Hoyt 1984:100).

Several ships from the Spanish Fleets, as well as other ships are known to have foundered on Pedro Bank, a series of reefs situated 80 miles south of Jamaica. The danger can be easily seen from the ships recorded to have been lost on Pedro Bank, from the following list (Hoyt 1984:102):

1512 A small caravel sailing from Panama to Hispaniola.

1602 A large unidentified merchant nao sailing in the New Spain Fleet from Spain to Yucatan, carrying merchandise and missionaries.

1605 Four Spanish treasure-laden galleons from the Tierra Firme Fleet wrecked on either the Serranilla Bank or Pedro Bank. The ships were; San Roque, Santo Domingo, Nuestra Senora de Begonia and San Ambrosio.

1691 Four Spanish merchant vessels from the Spanish Armada y Flota de Tierra Firme (South American Fleet) were lost on Pedro Bank on June 2, 1691. The four ships that
were lost were; La Nuestra Senora de la Concepcion, Santa Cruz y Santa Therese, Le Angel y las Animas and La Nuestra Senora del Carmen y San Joseph. The fleet was returning to Spain from Cartagena, Columbia via Havana, Cuba when the four ships ran aground on a shoal.

1730 A Spanish ship La Nuestra Senora del Carmen also known as the "Genovesa" sailing alone from Cartagena to Havana, struck Pedro Bank and was partially salvaged by the British.

1755 A large Spanish galleon La Andalicia sailing from Cartagena to Spain wrecked on Pedro Bank.

1838 A slave boat the Estella sank on Pedro Bank.

It is the four merchant ships of the 1691 fleet that are of primary interest.
CHAPTER III

ARCHAEOLOGICAL HISTORY OF PEDRO BANK

In 1981 the Government of Jamaica invited the Institute of Nautical Archaeology (INA) to survey the area of Pedro Bank, a collection of dangerous shoals located 80 miles south of Jamaica, known to be the location of several wrecks. It was alleged that one of these, the 1730 wreck of La Nuestra Senora del Carmen, commonly known as the "Genovesa," was being plundered illegally in the hopes of finding treasure. The Jamaican Government, concerned about the reported looting, asked INA to survey the area in an attempt to find the "Genovesa" (Hoyt 1981:1).

A research team made three trips to Pedro Bank in April 1981. A magnetometer survey was conducted, during which four anomalies were located. From on site visual investigation, including metal detector searches, and test excavations, all four anomalies were determined to be shipwrecks (Hoyt 1981:2).

The main objective of the 1981 survey was to locate the "Genovesa." The team examined each site and eliminated all but PB5 as candidates for the "Genovesa". PB5 had previously been known as PB4, but it was renamed PB5 in 1982. On the shipwreck site called PB5, there was a large ballast pile with nine cannon scattered around a massive ballast pile (Figure 2), a 10th cannon was off
Area where pistols were recovered.

PB-5
Pedro Bank, Jamaica

Figure 2. Site map of PBS.
the site. Significantly, no anchors were found, which was to be expected if the site represented the remains of the "Genovesa." The historic records indicate that the British removed them when they salvaged the "Genovesa" in 1691. Furthermore, the presence of a recently dug trench in the corner of the site demonstrates that the site had been visited recently. A positive identification of the wreck could not be determined from the recovered artifacts (Hoyt 1981:2-4).

Two additional trips were made to Pedro Bank in 1982 to continue the survey. However, the activities of the survey team were severely curtailed by a turbulent sea which prevented the team from using the magnetometer. Therefore, most of the work done was visual. Nevertheless snorkelers found one significant new site and several smaller sites which seem to be the scattered remains of more recent sailing and steam vessels (Hoyt 1982:6).

Since a magnetometer survey could not be conducted in the 1982 reconnaissance, this was the major objective in 1983. The survey team relocated all five wrecks found previously, but no new wrecks were found (Hoyt 1984:5).

Sites Found on Pedro Bank

The following are brief descriptions of the five significant sites located during the INA surveys of Pedro Bank.
PB-1

This is the least investigated of the five sites. It is completely buried under elkhorn coral. Due to time constraints, further investigation of this site was abandoned. The relative size of both the magnetometer and metal detector hits on this site are not typical of a shipwreck (Hoyt 1984:103).

PB-2

The site has four iron cannon and two anchors laying about a small ballast pile. Artifacts recovered from the site include several hundred encrusted olive jar sherds. Since the wreck lies in only two meters of turbulent water, no extensive testing was attempted (Hoyt 1984:104).

PB-3

This site marked the wreck age of a large sailing vessel. The ballast pile is 30 meters long with 21 iron cannon and six large anchors associated with it. Three combination sundial/compasses with bone cases definitely date pre-1700 and a Lima coin dated to 1686 were recovered from the site, suggesting that the wreck may be one of vessels of the 1691 fleet (Hoyt 1984:105-106).
PB-4

The site lies flat on the bottom nearly devoid of coral growth. The ballast pile is a low flat mound, 32 meters long by 30 meters wide. There are 16 iron cannon and three anchors associated with the wreck, no artifacts were removed (Hoyt 1984:106-107).

PB-5

This site was originally thought to be the 1730 wreck of the "Genovesa" as the site was devoid of anchors, which the British salvaged off the "Genovesa" after she sank. The ballast pile is 30 meters long by 10 meters wide and 3-4 meters in height (Figure 2). Nine cast iron cannon are scattered around the ballast pile while a tenth is located 75 meters to the north (Hoyt 1984:107-108).

A gold finger ring, hundreds of olive jar sherds, glass lenses, fragments of Chinese porcelain and fragments of case bottles were recovered from test pits (Hoyt 1981:4 and Hoyt 1984:108-109). Still, a definite date could not be assigned to the wreck, and a definite identification eluded the investigators.

In May 1987, Tryall Associates Ltd., a Cayman Island Corporation under the direction of James Parrent in association with the Jamaican Government carried out a 21-day excavation with the purpose of identifying the PB-5 site, once and for all.
Four excavation areas were opened; one at mid-ship, one in the SE end of the site which is thought to be the bow and two in the NW end of the site which is thought to be the stern. A number of flintlock pistols were excavated from Test Pit D (Figure 3); however, a large number of pistols remain on the site which appear to have been packed in boxes of cacao beans (James Parrent 1991, pers. comm.).

The excavators raised what artifacts they could with the facilities available. Artifacts, such as cannon, that could not be conserved properly, were left on the sea floor.
Artifacts recovered by Tryall during the 1987 excavation included Chinese export porcelain, brass coin weights, and several silver coins with Potosi mint marks, none of which dated after 1689. Also recovered were 613 optical lenses, a chest full of steel sewing needles, a chest of nails, five silver plates with markings, and at least 54 flintlock pistols packed in boxes containing cacao beans. The artifact assemblage strongly indicates that this wreck is that of a late 17th century vessel, possibly one of the four 1691 Tierra Firme Fleet vessels lost on Pedro Bank traveling from Cartagena to Spain (Geddes 1988:65-66).

No further excavation of this site is planned until research has been completed on relevant British and Spanish archival materials in an effort to identify which of the known ships of the 1691 fleet is represented by PB5. The large size of the ballast pile indicates a vessel of considerable size. From the archival records, it is known that the El Angel y las Animas and the La Nuestra Senora de la Concepcion had tonnages of 263 tons and 357 tons respectively, and would be represented by a ballast pile much smaller than the one at PB5. The other two ships of the 1691 Fleet, the Santa Cruz y Santa Therese was rated at 486 tons, while the tonnage of La Nuestra Senora del Carmen y San Joseph is not known (Geddes 1988:67). Therefore, either of the two ships are the more likely candidates.
It is fairly obvious that the site of PB5, and probably that of PB4, are the remains of two of the four ships known to have wrecked off Pedro Bank in 1691. With this identification, we have means to date the various artifacts recovered in the test excavations on the two sites. Therefore, we know that the flintlock pistols found on PB5 date from the late 17th century, and we can place them into the known sequence of development of the flintlock.
CHAPTER IV

DEVELOPMENT OF THE FLINTLOCK

The flintlock is perhaps the best known ignition system used in early firearms. During its use from approximately 1625 to 1825 (Hamilton 1982:200), the general operation of the lock itself did not change, though minor improvements in the operation of the lock and stylistic changes in the furniture and stocks did occur.

The flintlock was probably developed in France sometime during the second decade of the 17th century. The exact date of development is not known since in early 17th-century documents the term "snaphaunce" and "flintlock" were used interchangeably. The snaphaunce lock is an earlier lock similar to the flintlock, but there are slight differences in the lock mechanism. The flintlock was clearly not invented, but rather was developed, by combining several different features of contemporary locks. Marin le Bourgeoys, of Lisieux in Normandy, is thought to have developed the mechanism while working in the Galleries of the Louvre in 1608. The earliest known example of a flintlock, located in the Hermitage in Leningrad, was probably made in 1620 and is signed with le Bourgeoys' name (Blair 1983:73; Muller 1980:118).
In order to discuss flintlocks, it is important to know exactly what a flintlock is. Dr. Torsten Lenk (1939) defines a flintlock in his book *Flintlaset* as having a steel and pan-cover which are one piece and a vertical sear that engages a tumbler which has two notches: a safety, and a firing notch. The flintlock gun works on the principal of metal striking flint, thus producing a spark which, upon igniting the powder in the pan, fires the ball (Figure 4).

When preparing to fire a flintlock, the operator places the gun in the half-cock position, meaning that the vertical sear is engaged in the deeper half-cock position on the tumbler; this way, the sear can not be disengaged by pulling the trigger. The operator opens the pan-cover and fills the compartment with powder. The cock is then pressed to the full-cock position, the pan-cover is closed, the vertical sear is on the full-cock position of the tumbler and the pistol is ready to be fired. When the trigger is pulled, the vertical sear withdraws and the pressure of the mainspring on the tumbler causes the cock, which has a flint mounted on it, to strike down upon the frizzen, generating sparks with the flint; simultaneously, the pan opens and the sparks fall into the pan igniting the powder and firing the gun.

By 1650 the flintlock was being manufactured and used in all parts of Europe. However in Spain the miquelet lock (Figure 5) was regarded as superior (Blair
Figure 4. The interior of the lock mechanism of the Pedro Bank pistols (after Wilkinson 1971: 18).

Figure 5. The exterior of the miquelet lock mechanism (after Lavin 1965:171).
1968:73-74) and the flintlock was not common. The miquelet lock differs from the flintlock in that the mainspring is mounted outside the lockplate, and it does not hook onto a tumbler but instead connected with the heel of the cock (Wilkinson 1971:19).

By the mid 1600s England was manufacturing flintlock weapons in sufficient numbers to supply the military. The standard military pistol during the reign of Charles II (1649-1685) was a flintlock with a barrel of 14 inches in length and a No. 20 bore, which means the ball was approximately 0.630 inches in diameter (George 1938:32).

A variation of the pistol is the screw-barrelled pistol, which seems to have made its appearance in the mid-1600s. Although its origin is unknown, it seems to have been used primarily in England. This gun is loaded by unscrewing the barrel from the chamber. The chamber is loaded first and then a lead ball of equal diameter to that of the barrel was inserted into the breech of the barrel and the barrel reattached. Only a ball made of lead, which gives, can be used. This type of pistol produces a more accurate and powerful shot because the ball fits tightly into the barrel and less gas from the exploding gunpowder charge escapes around the sides of the ball. Also, the ball does not swerve from side to side as it leaves the barrel (George 1938:15-17; Hoff 1978:100).
The first pocket pistols, which were not true flintlocks, were made as early as the end of the 16th century. Flintlock pocket pistols became popular in the second half of the 17th century. These pistols were almost always fitted with screw-barrels. Pocket pistols were small, with a barrel of about 3 to 5 inches in length and were half stocked (see Figure on page 66) to the breech (Blair 1968:17-18).

The flintlock did not appear in the Netherlands until the middle of the 17th century, in the wake of the Thirty Years War; however, the Dutch quickly caught up and by the 1680s they too were producing flintlocks for export. Soon, Dutch flintlocks were being sold to other countries in large numbers. Unfortunately, the Dutch flintlock and the English flintlock are almost indistinguishable (Jackson 1959:229, 231), unless there is a maker's mark or signature identifying a pistol as either English or Dutch.

**Dating and Furniture Design**

There are several methods of determining the date of a pistol's manufacture. The various furnishings on a pistol (Figure 6) help identify a date range. While no one feature can be the basis for a date of manufacture or a country of origin, the furniture on the Pedro Bank pistols falls within the range found in the last quarter of the 17th century.
Figure 6. Exterior view of a flintlock traveling pistol (see Figure 4 for the interior view of a flintlock pistol).
The lockplate is usually constructed of either iron or brass, with the latter always occurring on better made pieces. Brass, at this time, means an alloy of copper and tin, now known as bronze or gun brass (George 1938:36). In the mid-17th century, the lockplate on flintlocks are generally long, flat and large, and are fastened with three screws. By the 1680s, the design was altered, with the lockplate becoming smaller; therefore, only two screws were necessary to hold the lockplate to the pistol. Furthermore, the shape became convex with a graceful down-turning line. As time passed, the shape reverted to a straighter, flatter line which remained popular throughout the flintlock's later use (Wilkinson 1971:29-30; Wilkinson 1976:13; Blair 1983:74).

The cock, which is made of iron or brass, has a design development similar to that of the lockplate. The cock was flat in the early 1600s, but slowly became thicker and more rounded by the mid-1600s. During the 1660s, the cock also began to develop the graceful swan or goose form that was to be the style for the rest of the period of flintlock use (Wilkinson 1976:13; Blair 1983:74).

A few general changes can be seen in the evolution of the steel and pan cover, commonly called the frizzen. The frizzen is made of iron, sometimes steel (Brown 1980:182,184). When viewed from the front, a frizzen from the early 1600s usually has a rounded or squared top
while one from the later half of the 1600s is more pointed. In profile, the earliest steels have a marked outward curve just above the middle. From the 1620s-1650s, two styles of frizzens were in use; one was narrow with a rounded middle and the other was shaped like a flattened triangle. The latter style would eventually dominate, but the former was in use until the end of the 17th century (Wilkinson 1976:24; Blair 1983:74-75).

Barrels, which were forged of iron or cast in brass, were usually attached to the stock by pins which pierced the stock and engaged lugs set beneath the barrel. Also, at the rear of the barrel, a tang extended, through which a screw was placed in the stock. The barrels were often octagonal at the breech, slowly becoming circular about 1/3 of the way down the length. Barrel length diminished during the 17th and 18th centuries while the size of the bore increased (Wilkinson 1971:29; Wilkinson 1976:24; Peterson 1956:36). Even this early, it was not unknown for a breech block, with the attached tang to be screwed to the breech of the barrel. This feature does occur on the guns studied.

The earliest stocks were made of a variety of woods, such as mahogany, tiger wood or ebony but, walnut was the most common. Most of the earlier stocks were plain and undecorated with the butt forming a slightly bulbous end. By the 1640s, the end was cut flush and reinforced with a metal cap, which provided additional strength as did the
addition of spurs running up the sides of the butt. These spurs were short in the 1680s but by the 1700s were running almost the entire length of the handle. Many butt caps were engraved (Wilkinson 1971:29; Wilkinson 1976:15-16).

The escutcheon or thumbplate was a piece of decorative metal on the handle of the gun. It was quite often made of brass, but also made of iron, as in our examples. It was usually oval or shield shaped and displayed either the owner's coat of arms, his initials or, in the case of service arms, the unit number. The thumbplate seems to have come into general use only in the 1670s; however, from the late 1600s on, it was a standard fitting on wooden stocked guns (Blair 1968:23).

Summary of the 1691 Pedro Bank Pistols and Comparative Examples

Lockplates

These flintlocks, as mentioned earlier, have no metal furniture remaining, but they were originally made of iron. However, casts have been made of some furniture molds, two of which, PB5 87 108 and PB5 87 110, are of lockplates. These casts show that the lockplates were approximately 9 and 10 centimeters long respectively and were fastened with two screws as would be expected of late 17th-century pistols. Several other pistols are
sufficiently preserved to ascertain that their lockplates were also between 9 and 10 centimeters in length and secured with two screws. Furthermore, the casts, as well as the impressions in the stock, indicate that the lockplates were slightly curved and their surfaces were flat with beveled edges. This information is derived from casts of only two of the approximately 54 pistols that were on the ship.

The sideplate, the decorative metal work on the side opposite the lockplate, are of a late 17th-century style. While they are all different, several design similarities exist. The majority of the sideplates from the Pedro Bank pistols are of a design similar to examples of trade guns in North America c. 1680-1730 (Hamilton 1956:94). Two other sideplates, PB5 87 107 and possibly PB5 87 M8, are identical to the sideplate of a Dutch West India Co. Club-Butt Fowler. This gun dates to 1660-1680 and originated in Bourne, MA (Lindsey 1975:30-31). This same design, though, was popular on a variety of military guns. See Typology Chart 1 for a complete description of the sideplate designs from these pistols.

Cocks

The Pedro Bank pistols yielded only three examples of cocks. Unfortunately, the cast of the cock, PB5 87 110, is not an accurate cast because the mold had been damaged before the encapsulating encrustation formed on
it. The casts of PB5 87 108 and PB5 87 148-7 are informative. The cocks are rounded, which is typical of those of the mid-1600s and later. These cocks also have the gentle, graceful swan shape characteristic of this period. No maker's marks or initials were found on any of the cocks.

Frizzens

PB5 87 108 and PB5 87 148-7 produced the only two casts of frizzens or steels. They come to a point as would be consistent with late 1600s design. In profile, the steels are very narrow with a graceful curve in the middle.

Barrels

There are no barrels remaining; therefore, a determination of the bore diameter of the barrels can only be estimated from the degraded remains of the barrels. The estimated bore diameter is 87 with a calibre (ball diameter) of 0.375. The barrels were attached to the stocks by a projecting lug which was secured with a pin going through the stock. A screw going through a hole on the projecting tang at the breech provided additional attachment to the stock. The barrels were octagonal, becoming circular 1/3 of the way down the barrel. Data on the barrel shape are taken from the cast of PB5 87 110.
Butts and Butt Caps

Only one complete cast of a butt cap was made. The cast is plain, undecorated, and secured with one screw. The butt cap spurs run almost the length of the handle. See Typology Chart 3 for a complete description of the butt cap spur length from these pistols.

Escutcheons

The escutcheon was usually made of brass or iron, the examples in this collection of pistols appear to have been iron. Some of the pistols have escutcheons or thumbplates. After examining several different sources, I found no identical designs on any other guns, but escutcheons are a highly personal and variable piece of gun furniture. See Typology Chart 2 for a complete description of the thumbplate designs from these pistols.

Stocks

The stocks of the pistols are walnut, most likely Old World walnut according to the Forest Products Laboratory in Madison, WI. Two samples from two different pistols were sent. There is no additional decoration on the pistols other than the sideplate and thumbplate designs. Initials and markings on the stocks inside the lock cavity, were engraved into the wood by the stockmaker. The only legible initial is of an "H"
followed by a series of lines whose meaning could not be interpreted (see individual drawings).
CHAPTER VI

CONSERVATION OF THE PISTOLS

Before I begin my conclusions concerning the pistols' origin and reason for being on the ship, the conservation methods used on the pistols will be discussed.

The conservation of artifacts is carried out to preserve the artifacts after they are recovered from archaeological sites. After removal from a site, artifacts undergo various chemical changes that, unless halted, will destroy the artifact. Not only will the artifact itself be destroyed, but all information that can be garnered from it will be destroyed. The 1691 pistols, if not properly conserved, will undergo a number of changes including:

1. The waterlogged wood will dry out and the wood will crack and warp. In order to stabilize waterlogged wood, special treatment is required.

2. The encrustation covering the pistols and the metal parts will crack and break, preventing one from making molds of the cavity left by the corroded metal parts.

3. Any residual metal or corrosion products in the encrustation will continue to rust and will expand, badly destroying the wood stock and
breaking the surrounding encrustation.

Documentation

During the conservation process, documentation through photography and radiography is essential. Records detailing the complete conservation process are kept. These records include preliminary descriptive data, drawings, photographs, x-rays. Methods of treatment must also be thoroughly recorded.

Photographs of the pistols include preliminary photos before conservation, photos of any unusual details concerning a particular pistol, and photos of the pistols after conservation. After the pistols were conserved, each pistol was drawn showing its details. Drawings are especially helpful because many fine details are not clear in photographs.

The information found in radiographs is often the only evidence one can obtain of corroded metal parts. Radiographs of several of the pistols, PB5 87 28, PB5 87 108 and PB5 87 110, were taken. Unfortunately, most of the x-rays did not shown much detail due to the presence of ballast stones. Additional x-rays were taken when the ballast stones were removed, showing various cavities in the encrustations. Radiographs of various pieces include, PB5 87 28 - butt cap; PB5 87 108 - lockplate; PB5 87 110 - lockplate, triggerguard and barrel. The mold of the cock and frizzen of PB5 87 148-7 was not
concealed by encrustation thus no x-ray was taken.

The x-rays were taken using both film and paper. The exposure times were from 1 to 2.5 seconds based on the thickness of the artifact. The kilovoltage was 20 and the milliamperes was 70-80. The film x-rays had the best definition. One in particular, PB5 87 110, showed not only the cavities of the lockplate, but also showed in interior lock mechanism (Figure 7). This x-ray was drawn (Figure 8) to show more clearly the details of the x-ray. Besides showing the interior mechanism, the x-ray also shows the tumbler with two notches, a half-cock and a full-cock, providing the information necessary to determine that these pistols were "true" flintlock pistols as defined by Torsten Lenk (1965).

Mechanical Cleaning and Casting

Before any treatment dealing with the wooden stocks could be undertaken, the calcareous deposits, commonly termed encrustation, had to be removed. In conjunction with this procedure was the casting of the several molds that were discovered during the radiography process. The mechanical cleaning of the pistols was carried out using pneumatic chisel, which was used to carefully remove the surrounding encrustation. When the pneumatic chisel broke into the cavity of one of the molds, a cast would have to be made.
Figure 7. X-ray of PB5 87 110.

Figure 8. Drawing of interior lock mechanism of PB5 87 110 (as taken from the x-ray).
A hole large enough to allow the casting compound to flow into the cavity was made. The area of the mold was cleaned thoroughly with jets of running water and wire probes were used to loosen any residual metal. The molds were then dried with acetone and filled with an epoxy casting compound to form an exact cast of the original. After drying, the remaining encrustation was removed from the artifact.

All of the artifacts had encrustation remaining on them which could not be removed by a pneumatic chisel due to the possibility of damaging the epoxy casts. Residual encrustation on the pistols was removed by placing them in hydrochloric acid baths. Two to three 6 to 10 hour baths were used, the concentration of both solutions were 10%. After the artifacts were removed from the acid, they were washed in three to four successive baths of tapwater to remove excess HCL and brushed with a soft bristle brush.

The epoxy casts include, the PB5 87 28 - butt cap; the PB5 87 106 - lockplate; the PB5 87 110 - lockplate, triggerguard and barrel and the PB5 87 148-7 - cock and frizzen.

Conservation Methods

I used several different methods to conserve the wooden stocks, in order to compare and contrast the methods as to cost, time, and overall effects on the
wood. The methods used were: 1). sucrose treatment; 2). dehydration sequence; 3). acetone-resin treatment in a heated container and; 4). acetone-resin treatment at room temperature.

Sucrose Treatment

Sucrose treatment (Parrent 1983) was used on PB5 87 110. After the pistol was drawn, photographed, x-rayed and cleaned, it was placed in a 1% sucrose/99% tapwater solution in a sealed container heated to 52°C. The concentration of sucrose was raised by 1% during the next two weeks. After a 5% concentration was reached, increments of 5% were added every 2-3 days until the concentration of sucrose was 75%. The treatment was completed in about three months.

The pistol was then taken out of the 75% solution, excess sucrose was wiped off and the pistol was placed in a perforated, plastic bag to dry slowly in the air.

Dehydration Treatment

Dehydration sequence (Flenderleith and Werner 1977) was used on PB5 87 106 and PB5 87 108. After the pistols were drawn, photographed, x-rayed and cleaned, they were placed in the dehydration sequence.

The general dehydration sequence for the pistols was:
1). 50% isopropanol/50% tapwater (PB5 87 106 only)
2). 75% isopropanol/25% tapwater
3). 100% isopropanol
4). 100% isopropanol
5). 100% acetone
6). 100% acetone
7). 100% ether (used)
8). 100% ether (used)

The stocks remained in each bath a minimum of 48 hours. Upon completion, the pistols were placed in perforated, plastic bags to dry slowly in the air.

Acetone-Rosin Treatment

Two pistols (PB5 87 107 and PB5 87 109) were treated with acetone-rosin in a heated container (McKerrell and Varsanyi 1972). The temperature was maintained at 52°C. After the pistols were drawn, photographed, x-rayed and cleaned, they and a cacao bean found in association with PB5 87 107 were placed into two successive acetone baths, each for one day. Then the pistols were left in another acetone bath for a week.

The pistols were placed in a container with a saturated solution of rosin in acetone at 52°C, which is a 96% solution of rosin. The solution was topped off with acetone about once a week as the acetone evaporated.

The pistols and cacao beans were removed from the solution after 23 days. Excess rosin was wiped from the artifacts with a cloth dipped in clean acetone. The artifacts were then placed in perforated, plastic bags to dry slowly in the air.
The remaining pistols (PB5 87 28, PB5 87 115, PB5 87 148-1-1 to PB5 87 148-7, PB5 87 220-1 to PB5 87 220-3 and PB5 87 M1 to PB5 87 M64) were all treated by the acetone-resin treatment (McKerrell and Varsanyi 1972) but it was carried out at room temperature instead of the recommended 52°C. Room temperature treatment with rosin requires a much longer treatment time.

The pistols were placed in two acetone baths for 1-3 days and another acetone bath for 7-10 days. They were then placed in a container with a saturated solution of rosin in acetone and kept at room temperature. The solution was topped off with acetone as necessary. The pistols were removed after 87 days. Excess rosin was wiped from the artifacts with a cloth dipped in clean acetone. The pistols were then placed in perforated, plastic bags to dry slowly in the air.

Comparison of Treatments

The sucrose treatment was used on one pistol (PB5 87 110) and had excellent results. The heated sucrose solution had no adverse effects on the epoxy casts and there has been no observable shrinkage of the wood. The wood is dark with no cracking or warping. This treatment is economically feasible as it requires only sucrose and water in a heated container. The only drawbacks are the length of time needed for its completion and the need for an oven to heat the solution.
The dehydration sequence was used on two pistols (PB5 87 106 and PB5 87 108), one of which had an epoxy cast in place. The cast was not effected by the treatment. This treatment used successive baths of isopropyl alcohol, acetone and ether to dehydrate the wood and remove the water. This is a very straight forward process requiring a minimum amount of time. This treatment does not replace the water in the wood with a bulking substance; therefore, the wood shrunk after it was allowed to dry in the air. This treatment is also expensive due to the cost of the organic solvents, and there is the ever present danger of fire and the toxicity of the solvents. Because of this, I would not recommend this conservation method.

The treatment which had the best results overall with regards to time and end results, was the acetone-rosin treatment. No measurements are required to achieve a saturated 96% solution. Sufficient rosin is added to acetone so that a thick viscous layer lays on the bottom of the container. The artifacts are suspended above the undissolved rosin and the container is sealed. The container can be heated in an oven or left at room temperature. If the container is placed in an oven, the time needed for the treatment is much shorter. When treated in a heated container, the pistols were left in the solution for 23 days. Those that were in an unheated container were left in the solution for 87 days. In a
heated container, the acetone will evaporate more rapidly and; therefore, it will have to be replenished more often than if the treatment is carried out in an unheated container. However, this in not a problem if the container is securely sealed. The results of both the heated and non-heated acetone-resin treatments were very good. There was little shrinkage and the epoxy casts were not effected. The wood retained its dark color and, while coarser feeling than the pistol conserved in sucrose, it did not crack or warp.

The treatment of pistol PB5 87 109 by heated acetone-resin and approximately 10 pistols by unheated acetone-resin was not successful. After the pistols had been allowed to dry in the air for approximately one month after treatment, they began to warp and crack. A reason for the poor preservation of PB5 87 109 might be that the pistol did not have any encrustation surrounding it when it was recovered; therefore, the wood might have been more degraded. Another possibility is the pistols were made from pieces of transverse cut wood. Transverse cut wood has more of a tendency to crack and warp as the cuts are going against the grain. Another possibility is that over time, the acetone-resin solution became contaminated with water.

My choice for a conservation treatment for small articles of wood, if cost were not a factor, would be the acetone-resin treatment. The sucrose treatment requires
more time, and necessitates the addition of sucrose to the solution every two to three days, but the two ingredients, sucrose and water are both safe, cheap and readily available. In contrast, the heated acetone-rosin treatment could be left unattended for at least a week at a time, and only took about three weeks to complete, but acetone is very flammable and is relatively expensive, as is the rosin. The acetone-rosin treatment, however, does result in a treated wood with a good wood texture and color, and equally important, the wood is much more impervious to water vapor and thus much less susceptible to relative humidity fluctuations in poor storage conditions.

The following photographs show the pistols after conservation. Figure 9 is of PB5 87 108, a screw-barrelled pocket pistol treated by dehydration treatment. Figure 10 is of PB5 87 110, the largest of the traveling pistols that were recovered and was treated by sucrose.
Figure 9. PB5 87 108 after conservation.

Figure 10. PB5 87 110 after conservation.
CHAPTER VII

CONCLUSIONS

Once the pistols were conserved, they were ready for closer study without fear of them being damaged by exposing them to the air. Because the pistols had been underwater, the wooden remains survived, which is usually is not the case in land excavations. This benefit is offset by the fact that there are no metal parts surviving. However, casts of various molds, including three of the lockplates, were made. These casts show the general shape of the cock and frizzen but show none of the inner workings of the lock mechanism, which is one of the most diagnostic and important pieces to consider in firearms identification.

Fortunately, x-rays were taken of several of the pistols. One pistol, PB5 87 110, had enough of the lock mechanism remaining to be visible on an x-ray (see Figure 7), which revealed a tumbler with two notches and the normal inner workings of a flintlock of the mid- to late-17th century. I also found a degraded tumbler inside PB5 87 220-1 (see Figure 30). This tumbler had two notches and was unbridled. A bridle ensures a smoother operating firing mechanism and was standard on all but lesser quality or military firearms by the 18th century (Hayward 1963:68-69).
The casts, including the lock, barrel, butt cap and triggerguard, do not show any maker's marks or initials to help identify the country of origin. It is likely that there were marks on the metal parts of the guns, since by this time most guns had one or more marks on the various metal parts including the marks of the gunsmith, barrelmaker, and the proofmark. These marks were probably not etched deeply into the metal; therefore, they are less likely to be picked up during the casting procedure. In addition, the stocks often had the mark of the stockmaker.

All that remains of the sideplates are the impressions in the backside of the wood. Consequently, it is not known whether the sideplates were plain or decorated.

The butt caps of the pistols are plain, with no faces or figures. Most of the spurs run nearly the entire length of the handle, which is typical of flintlocks from the late 17th century. Two of the butt caps did not have spurs, but since all that remains of these two pistols are the butt caps, I cannot tell if they are similar to the other pistols. They were recovered from the large concretion along with several other pistols that had long butt cap spurs. For this reason, I think that they represent a variety that occurs along side the more common butt caps with spurs. Most
butt caps dating to this period have spurs (Kist 1974:161).

The pistol barrels are, unfortunately, totally disintegrated, so no bore diameter can be determined. Only one cast of a barrel could be made. This cast did not have a proofmark or any marking from the barrelmaker on it. It does show the shape of the barrel; octagonal slowly becoming circular, and the presence of three etchings running around the circumference of the barrel as a decoration.

Though the barrels are missing, it is easy to see by the stocks that the barrels had pins and lugs. There is a tang which also attaches the barrel to the stock at the breech.

Many of the stocks have marks cut into the lock cavity. These were most likely made by the stockmaker. No references could be found to determine the marks' significance.

The stocks themselves are plain, with the only decoration being the sideplate and thumbplate designs. The wood is walnut, most likely an Old World species (Juglans regia) as determined by the Center for Wood Anatomy Research, U.S. Forest Products Laboratory in Madison, Wisconsin.

Due to the amount of disintegration of the metal furniture, it is definite that the metal used for the furniture was iron. Iron furniture was not common on
better quality firearms, but lesser quality arms often had iron furniture.

Examination reveals that these pistols are average quality, serviceable pistols. There is nothing unusual about them, no special mechanical features, and no expensive materials were used to make them. Whether they were built for the military or for civilian use is unknown. Figures 11-16 are reconstructed drawings of what the two types of pistols might have looked like as based on the archaeological evidence and various references.

In trying to determine a country of origin, I first had to decide if they were manufactured in the New World or the Old World. I believe that they are of Old World manufacture, since, as previously stated, the wood is probably an Old World species of walnut and the metal for the lock and furniture was iron. As iron was not produced in great quantities in the New World until the 18th century (Brown 1980:130), both the stocks and the metal would have had to have been imported to the New World.

Since the guns were found on a Spanish ship, it might be assumed that they were Spanish, but that is not the case. The Spanish preferred the miquelet lock to the flintlock and their style of decoration was different. Instead, after examining examples of different countries' flintlock pistols, I have concluded that the most likely
Figure 11. Reconstruction drawing of the stock of a traveling pistol.
Figure 12. Reconstruction drawings of a traveling pistol (side and top view).
Figure 13. Reconstruction drawings of a traveling pistol (side and bottom view).
Figure 14. Reconstruction drawing of the stock of a screw-barrelled pocket pistol.
Figure 15. Reconstruction drawings of a screw-barrelled pocket pistol (side and top view).
Figure 16. Reconstruction drawings of a screw-barrelled pocket pistol (side and bottom view).
candidate for country of origin was England. To confirm this determination, I contacted Dr. James Lavin, a noted gun expert, who supported my belief that the pistols were not Spanish, but English. However, Dr. Lavin also conceded that they could be Dutch. The technological exchanges between England and Holland was extensive during the reign of William and Mary (1688-1694). Because of the difficulty differentiating between the two without markings or a signature, he could not definitively say whether the guns were English or Dutch.

Several examples of English and Dutch military pistols exist that are similar in size, design, and decoration to the Pedro Bank pistols. These include Blair (1968) pp. 102, #243 & 244, #240 & 241; Hoff (1978) pp. 151, #30; Brooker (1978) pp. 25-31. The previous references are museum pieces. Examples of guns found on land sites include Hayes (1985) pp. 58-62 and Hamilton (1980). Unfortunately, the stocks on guns excavated on land sites, are rarely preserved to the extent that the type of gun can be determined. By contrast, examples from underwater sites will, for the most part, have only the wooden stocks remaining and in some cases good molds of the metal furniture. If the furniture is bronze, then the chances of it surviving are better. Examples include Smith (1988) pp. 98, 102.

The examples in Brooker are similar to the Pedro Bank pistols in that they are plain British military arms
from the late 17th century, the only difference between them is that the examples in Brooker are longer and the furniture is brass not iron.

The examples in Blair and Hoff are English and Dutch military pistols from the late 17th century and include both screw-barrelled pocket pistols and traveling pistols. These examples are the same size as the Pedro Bank pistols, most of the furniture is iron, and most of the examples have simple sideplate and thumbplate designs. These examples are the most similar to the Pedro Bank pistols.

The examples in Hayes and Hamilton are from North American archaeological land sites; hence, all that remains is the metal furniture. The examples from Hayes are of iron lockplates from the late 17th century. The only difference between these examples and the Pedro Bank pistols is the size; the examples are about 2-3 centimeters longer than the Pedro Bank lockplates. The examples from Hamilton are mostly from rifles from military sites and most of the furniture is iron. These examples are helpful in seeing the variety in the furniture decoration, but provide little help in identifying the guns under study here.

I believe that the marks I found on the stocks of nine pistols, inside the lock cavity, are the marks of the stockmaker. The marks seem to be the initial "H" with additional illegible marking following. I have not
been able to find a reference pertaining to the markings in either English or Dutch sources. Not all of the stocks have markings inside them, this could means that two or more stockmakers made the stocks for these pistols.

Table 1 is a listing of all the pistols including the category determination for the sideplate, thumbplate and butt cap spur length (please see Typology Charts). Also any markings found on the pistols is noted. Table 2 is a summary of the pocket pistols, traveling pistols, and the fragmentary remains of pistols for which a determination of type could not be made. The minimum number of pistols, as based on the number of butts or breech portions of the stock (the sturdiest part of the gun), is 54.

The reason for the presence of these pistols on a Spanish ship remains, for now, hypothetical. Perhaps when the wreck has been fully excavated and all artifacts analyzed, including any additional pistols that might still be on the wreck, a fuller analysis might be offered of the ship and its cargos. For now, however, I only know that the pistols were most likely made in England and were on a Spanish ship leaving the New World, for Spain.

Why would a Spanish ship be carrying English pistols back to Spain from the New World? The number of pistols on the ship and the fact that two of them were in the
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<td>Travel</td>
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### TABLE 2

**SUMMARY OF TRAVEL AND POCKET PISTOLS**

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<tr>
<th>Type</th>
<th>No.</th>
<th>Average Length</th>
<th>Side-Plate</th>
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<td>5</td>
<td>5</td>
<td>6</td>
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<td>6.9 inch</td>
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<td>*</td>
<td>17</td>
<td>12</td>
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* Average length for traveling pistols and unknown type pistols can not be determined as they are fragmentary.
half-cock position could support the hypothesis that the pistols were to be used in defending the ship. However, this is unlikely in light of Spanish preference for the miquelet lock. Furthermore, the weapon of choice for sea battles was the blunderbuss. Also, if the pistols were to be used in defending the ship, why were they kept in boxes of cacao beans? Also, no flints have been recovered from the wrecksite and there were no flints found in position on the pistols; therefore, it is highly unlikely that they were to be used in defense of the ship.

Another possibility relates to Spain's extensive trading with several other countries. Port Royal, an English port town in Jamaica, traded extensively with the Spanish Main. Goods such as tropical products like cacao beans, hides and bullion are a few of the goods that were traded in Port Royal. Some of these goods would also find their way back to England as part of a re-export trade that was operating at that time. Not only were legal exchanges being carried on, but illegal trade, including goods from the Spanish colonies, also existed (Pawson & Buisseret 1979:47-49). Since both the English and the Dutch traded their flintlocks with other countries, it is feasible that these pistols were simply part of the cargo of the vessel that came by way of trade with either the English or the Dutch in the Caribbean.
Finally, it is possible that the guns had been smuggled on board, a premise supported by the fact that the pistols were being stored in boxes of cacao beans. While this could be construed as evidence that the guns were being hidden away from authorities, it must also be remembered that iron tools and guns were often placed amongst other goods to protect the guns from damage and rusting during transport. The number of pistols being transported argues against a smuggling theory, since 54 pistols were recovered and additional pistols were left on the site (James Parrent 1991, pers. comm.).

As is often the case in archaeology, no definite statements can be made regarding why these pistols were on the ship, only hypotheses based on research. Since Spain carried out trade with several other countries, and the pistols were packed in boxes of cacao beans which, because of the number of pistols on the ship, would seem to indicate transport of cargo not smuggling, it is my belief that these pistols were part of the cargo.

At this time, I can state that the pistols were average quality civilian or military pistols, manufactured in either England or The Netherlands and they were part of the cargo. If the pistols remaining on the site could be excavated, it would be interesting to see if all the pistols are similar to these, if any have legible marks on them and how many more would be recovered. Perhaps with the complete excavation of the
wreck, a more thorough analysis will be able to
determine, without a doubt, the country of origin and the
reason for their being on the vessel.
CHAPTER VII

CATALOG

When the pistols were recovered, 16 were given identification numbers in the field. Most of these pistols had intact wooden stocks. A few of these pistols were taken on as conservation class projects by students at Texas A&M University. Additional pistol fragments were not numbered when they were recovered and were stored in buckets of water. When I started the conservation of this latter group of pistols, I numbered them from PB5 87 M1 to PB5 87 M22.

A large concretion was also recovered containing forty-one pistols and pistol fragments numbered, PB5 87 M23 to PB5 87 M64. This concretion was part of the box in which the pistols were stored. When the concretion was broken into, cacao beans were scattered throughout it. Unfortunately, the concretion was very slushy inside; so no cacao beans were recovered from this concretion, nor were there any suitable molds of the metal furniture to be cast. Just below the surface of the concretion (top of the box) were several glass optical lenses. During the sinking of the ship, the lenses probably settled amongst the pistols and were concreted with them. When removing the pistols from the
concretion, there was no observable order to the placement of the pistols.

The catalog itself gives the basic measurements of the pistols and any decoration on them. The drawings that are included consist of the side view of the pistol (the side with the lockplate) and any sideplate decoration from the opposite side and the thumbplate decoration placed on the top surface of the handle. Fragmentary pieces are drawn with dotted lines showing original outlines of the pistol.
Artifact Record
PB5 87 28

Description:

1). Lockplate

| A). Length | - | 3 1/2 inches (9 cm) |
| B). Breadth | - | 3/4 inch (2 cm) |
| C). Bottom Edge | - | Slight curve |
| D). Lockscrew Holes | - | 2 |

2). Decoration

| A). Sideplate | - | Ia |
| B). Thumbplate | - | C |

3). General Characteristics

| A). Overall Length | - | 7 inches (18 cm) |
| B). Markings | - | None |
| C). Comments | - | This pistol is a screw-barrelled pocket pistol. This pistol has the only complete cast of the butt cap. |
| D). Treatment Method | - | Acetone-rosin (unheated) |
Artifact Record
PB5 87 106

Description:

1). Lockplate

A). Length - 4 inches (10 cm)
B). Breadth - 3/4 inch (2 cm)
C). Bottom Edge - Slight curve
D). Lockscrew Holes - 2

2). Decoration

A). Sideplate - No
B). Thumbplate - No

3). General Characteristics

A). Overall Length - 9 inches (23 cm)
B). Markings - Possible initials "HA" on stock inside lock cavity.
C). Comments - It has a wooden ramrod.
D). Treatment Method - Dehydration
Artifact Record

PB5 87 107

Description:

1). Lockplate

A). Length - 4 inches (10 cm)
B). Breadth - 3/4 inch (2 cm)
C). Bottom Edge - Slight curve
D). Lockscrew Holes - 2

2). Decoration

A). Sideplate - II
B). Thumbplate - B

3). General Characteristics

A). Overall Length - 9 1/2 inches (24.5 cm)
B). Markings - Grooved lines on stock inside lock cavity.
C). Comments - The design of the sideplate is the same as that of a Dutch gun of 1660-1680 (Lindsey 1975:30-31).
  - It has a wooden ramrod.
D). Treatment Method - Acetone-rosin (heated)
Artifact Record
PB5 87 108

Description:

1). Lockplate
   A). Length               - 3 1/2 inches (9 cm)
   B). Breadth              - 3/4 inch (2 cm)
   C). Bottom Edge          - Slight curve
   D). Lockscrew Holes      - 2

2). Decoration
   A). Sideplate            - Ia
   B). Thumbplate           - C

3). General Characteristics
   A). Overall Length       - 6 3/4 inches (17.5 cm)
   B). Markings             - None
   C). Comments             - This pistol is a screw-barrelled pocket pistol.
                              - This pistol and pistol PB5 87 110 are in the half-cock position.
                              - The flashpan is rounded, and the frizzen is curved.
                              - The cock is goose-necked with a curved face.
                              - The cross-section of the lockplate is flat with beveled edges.
   D). Treatment Method     - Dehydration
Artifact Record
PB5 87 109

Description:

1). Lockplate
   A). Length - 3 1/4 inches (8.5 cm)
   B). Breadth - 3/4 inch (2 cm)
   C). Bottom Edge - Straight
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - No
   B). Thumbplate - No

3). General Characteristics
   A). Overall Length - 7 1/2 inches (19 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (heated)
Artifact Record

PB5 87 110

Description:

1). Lockplate

   A). Length - 4 inches (10 cm)
   B). Breadth - 3/4 inch (2 cm)
   C). Bottom Edge - Slight curve
   D). Lockscrew Holes - 2

2). Decoration

   A). Sideplate - III
   B). Thumbplate - D

3). General Characteristics

   A). Overall Length - 12 inches (30 cm)
   B). Markings - None
   C). Comments - This pistol and pistol PB5 87 108 are in the half cock position.
                 - It has a wooden ramrod.
                 - The barrel is octagonal at the breech slowly becoming circular.
                 - The flashpan is round.
                 - The cock is round.
                 - The cross-section of the lockplate is flat with beveled edges.

   D). Treatment Method - Sucrose
Artifact Record
PB5 87 115

Description:
1). Lockplate
   A). Length - Unknown
   B). Breadth - 3/4 inch (2 cm)
   C). Bottom Edge - Unknown
   D). Lockscrew Holes - Unknown

2). Decoration
   A). Sideplate - Ia (partial)
   B). Thumbplate - D

3). General Characteristics
   A). Overall Length - 4 3/4 inches (12 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 148-1-1

Description:
1). Lockplate
   A). Length - Unknown
   B). Breadth - Unknown
   C). Bottom Edge - Unknown
   D). Lockscrew Holes - Unknown

2). Decoration
   A). Sideplate - Ib (partial)
   B). Thumbplate - No

3). General Characteristics
   A). Overall Length - 6 1/4 inches (16 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record

PB5 87 148-1-2

Description:

1). Lockplate
   A). Length - 3 3/4 inch (9.5 cm)
   B). Breadth - 7/8 inch (2.3 cm)
   C). Bottom Edge - Slight curve
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - Ia
   B). Thumbplate - A

3). General Characteristics
   A). Overall Length - 7 inches (18 cm)
   B). Markings - None
   C). Comments - This pistol is a screw-barrelled pocket pistol.
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record

PB5 87 148-2

Description:

1). Decoration
   A). Sideplate - No
   B). Thumbplate - No

2). General Characteristics
   A). Overall Length - 5 1/2 inches (14 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Description:

1). Decoration
   A). Sideplate       -  No
   B). Thumbplate      -  No

2). General Characteristics
   A). Overall Length  -  6 1/4 inches (15.3 cm)
   B). Markings        -  None
   C). Comments        -  None
   D). Treatment Method -  Acetone-rosin (unheated)

Description:

1). Decoration
   A). Sideplate       -  ? (partial)
   B). Thumbplate      -  B

2). General Characteristics
   A). Overall Length  -  4 inches (10 cm)
   B). Markings        -  None
   C). Comments        -  None
   D). Treatment Method -  Acetone-rosin (unheated)
Artifact Record
PB5 87 148-7

Description:

1). Lockplate
   A). Length - 3 3/4 inches (9.5 cm)
   B). Breadth - Unknown
   C). Bottom Edge - Slight curve
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - Ib
   B). Thumbplate - E

3). General Characteristics
   A). Overall Length - 10 inches (25.5 cm)
   B). Markings - None
   C). Comments - The frizzen is curved.
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 220-1

Description:

1). Decoration
   A). Sideplate - No
   B). Thumbplate - No

2). General Characteristics
   A). Overall Length - 5 1/2 inches (14 cm)
   B). Markings - None
   C). Comments - This pistol had a degraded unbridled tumbler inside the encrustation.
   D). Treatment Method - Acetone-rosin (unheated)
Figure 30. PB5 87 220-1.

degraded tumbler
Artifact Record
PB5 87 220-2

Description:

1). Decoration
   A). Sideplate       - No
   B). Thumbplate      - No

2). General Characteristics
   A). Overall Length  - 4 3/4 inches (12 cm)
   B). Markings        - None
   C). Comments        - None
   D). Treatment Method- Acetone-rosin (unheated)

Artifact Record
PB5 87 220-3

Description:

1). Decoration
   A). Sideplate       - Unknown
   B). Thumbplate      - Unknown

2). General Characteristics
   A). Overall Length  - 2 1/4 inches (5.5 cm)
   B). Markings        - None
   C). Comments        - This artifact has a partial cast of the butt cap.
   D). Treatment Method- Acetone-rosin (unheated)
Artifact Record
PB5 87 M1

Description:
1). Decoration
   A). Sideplate       - No
   B). Thumbplate      - No

2). General Characteristics
   A). Overall Length  - 4 1/4 inches (10.5 cm)
   B). Markings        - None
   C). Comments        - None
   D). Treatment Method- Acetone-rosin
      (unheated)

Artifact Record
PB5 87 M2

Description:
1). Decoration
   A). Sideplate       - Ia (partial)
   B). Thumbplate      - A

2). General Characteristics
   A). Overall Length  - 4 3/4 inches (12 cm)
   B). Markings        - None
   C). Comments        - None
   D). Treatment Method- Acetone-rosin
      (unheated)
Artifact Record
PB5 87 M3

Description:

1). Decoration
   A). Sideplate - Ia (partial)
   B). Thumbplate - A

2). General Characteristics
   A). Overall Length - 5 1/8 inches (13 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M4

Description:

1). Decoration
   A). Sideplate - No
   B). Thumbplate - No

2). General Characteristics
   A). Overall Length - 5 inches (12.5 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Figure 35. PB5 87 M3.

Figure 36. PB5 87 M4.
Artifact Record
PB5 87 M5

Description:

1). Decoration
   A). Sideplate - III (partial)
   B). Thumbplate - E

2). General Characteristics
   A). Overall Length - 5 5/8 inches (14.3 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M6

Description:

1). Decoration
   A). Sideplate - III (partial)
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 5 7/8 inches (15 cm)
   B). Markings - None
   C). Comments - It has a wooden ramrod.
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M7

Description:

1). Decoration
   A). Sideplate - II (partial)
   B). Thumbplate - ? (partial)

2). General Characteristics
   A). Overall Length - 4 3/8 inches (11 cm)
   B). Markings - None
   C). Comments - The design of the sideplate is similar to that of a Dutch gun of 1660-1680 (Lindsey 1975:30-31).
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M8

Description:

1). Decoration
   A). Sideplate - Unknown
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 2 1/8 inches (5.3 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M9

Description:

1). Decoration
   A). Sideplate               - Unknown
   B). Thumbplate              - Unknown

2). General Characteristics
   A). Overall Length           - 1 5/8 inches (4.2 cm)
   B). Markings                 - None
   C). Comments                 - None
   D). Treatment Method         - Acetone-rosin (unheated)

Artifact Record
PB5 87 M10

Description:

1). Decoration
   A). Sideplate               - Unknown
   B). Thumbplate              - Unknown

2). General Characteristics
   A). Overall Length           - 1 5/8 inches (4.2 cm)
   B). Markings                 - None
   C). Comments                 - None
   D). Treatment Method         - Acetone-rosin (unheated)
Artifact Record
PB5 87 M11

Description:

1). Decoration

A). Sideplate - Unknown
B). Thumbplate - Unknown

2). General Characteristics

A). Overall Length - 2 1/8 inches (5.3 cm)
B). Markings - None
C). Comments - None
D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M12

Description:

1). Decoration

A). Sideplate - Unknown
B). Thumbplate - C (partial)

2). General Characteristics

A). Overall Length - 3 1/8 inches (8 cm)
B). Markings - None
C). Comments - None
D). Treatment Method - Acetone-rosin (unheated)
Artifact Record

PB5 87 M13

Description:

1). Decoration
   A). Sideplate       - Unknown
   B). Thumbplate      - C (partial)

2). General Characteristics
   A). Overall Length  - 3 inches (7 1/2 cm)
   B). Markings        - None
   C). Comments        - None
   D). Treatment Method- Acetone-rosin (unheated)

Artifact Record

PB5 87 M14

Description:

1). Decoration
   A). Sideplate       - Ia (partial)
   B). Thumbplate      - Unknown

2). General Characteristics
   A). Overall Length  - 2 3/4 inches (7 cm)
   B). Markings        - None
   C). Comments        - None
   D). Treatment Method- Acetone-rosin (unheated)
Artifact Record

PB5 87 M15

Description:

1). Decoration
   A). Sideplate - Ia (partial)
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 2 3/8 inch (6 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record

PB5 87 M16

Description:

1). Decoration
   A). Sideplate - ? (degraded)
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 2 1/2 inches (6.3 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M17

Description:
1). Decoration
   A). Sideplate       -  III (partial)
   B). Thumbplate      -  Unknown

2). General Characteristics
   A). Overall Length   -  2 3/8 inches (6 cm)
   B). Markings         -  None
   C). Comments         -  None
   D). Treatment Method -  Acetone-rosin
                               (unheated)

Artifact Record
PB5 87 M18

Description:
1). Decoration
   A). Sideplate       -  Ia (partial)
   B). Thumbplate      -  Unknown

2). General Characteristics
   A). Overall Length   -  2 1/8 inches (5.3 cm)
   B). Markings         -  None
   C). Comments         -  None
   D). Treatment Method -  Acetone-rosin
                               (unheated)
Artifact Record

PB5 87 M19

Description:

1). Decoration
   A). Sideplate - Ia (partial)
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 2 inches (5 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record

PB5 87 M20

Description:

1). Decoration
   A). Sideplate - Unknown
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 3 inches (7.5 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record

PB5 87 M21

Description:

1). Decoration
   A). Sideplate - No
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 2 5/8 inches (6.7 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record

PB5 87 M22

Description:

1). Decoration
   A). Sideplate - Unknown
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 2 1/4 inches (5.5 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M23

Description:

1). Lockplate

A). Length - Unknown
B). Breadth - 3/4 inch (2 cm)
C). Bottom Edge - Unknown
D). Lockscrew Holes - 2

2). Decoration

A). Sideplate - No
B). Thumbplate - No

3). General Characteristics

A). Overall Length - 9 3/4 inches (25 cm)
B). Markings - The marks "H / / /" or possibly "/ X / / /" on stock inside lock cavity.
C). Comments - It has a wooden ramrod.
D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M24

Description:

1). Lockplate
   A). Length         -  3 3/4 inches (9.5 cm)
   B). Breadth        -  3/4 inch (2 cm)
   C). Bottom Edge    -  Slight curve
   D). Lockscrew Holes -  2

2). Decoration
   A). Sideplate      -  No
   B). Thumbplate     -  No

3). General Characteristics
   A). Overall Length -  8 1/2 inches (24.5 cm)
   B). Markings       -  None
   C). Comments       -  It has a wooden ramrod.
   D). Treatment Method -  Acetone-rosin (unheated)
Artifact Record
PB5 87 M25

Description:

1). Lockplate
   A). Length - 4 inches (10 cm)
   B). Breadth - 3/4 inch (2 cm)
   C). Bottom Edge - Unknown
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - No
   B). Thumbplate - No

3). General Characteristics
   A). Overall Length - 9 1/2 inches (24.5 cm)
   B). Markings - Initial "H" and illegible marks on stock inside lock cavity.
   C). Comments - It has a wooden ramrod.
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M26

Description:

1). Lockplate
   A). Length - 3 3/4 inches (9.5 cm)
   B). Breadth - 3/4 inch (2 cm)
   C). Bottom Edge - Slight curve
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - No
   B). Thumbplate - No

3). General Characteristics
   A). Overall Length - 9 inches (23 cm)
   B). Markings - None
   C). Comments - It has a wooden ramrod.
   D). Treatment Method - Acetone-rosin (unheated)
**Artifact Record**

PB5 87 M27

Description:

1). Lockplate

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<tr>
<td>B)</td>
<td>Breadth</td>
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<tr>
<td>C)</td>
<td>Bottom Edge</td>
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<tr>
<td>D)</td>
<td>Lockscrew Holes</td>
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2). Decoration

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<tr>
<td>A)</td>
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<td>? (degraded)</td>
</tr>
<tr>
<td>B)</td>
<td>Thumbplate</td>
<td>? (degraded)</td>
</tr>
</tbody>
</table>

3). General Characteristics

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<tbody>
<tr>
<td>A)</td>
<td>Overall Length</td>
<td>6 1/2 inches (16.5 cm)</td>
</tr>
<tr>
<td>B)</td>
<td>Markings</td>
<td>Initial &quot;H&quot; on stock inside lock cavity.</td>
</tr>
<tr>
<td>C)</td>
<td>Comments</td>
<td>It has a wooden ramrod.</td>
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<tr>
<td>D)</td>
<td>Treatment Method</td>
<td>Acetone-rosin (unheated)</td>
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Artifact Record

PB5 87 M28

Description:

1). Lockplate

A). Length - Unknown
B). Breadth - 3/4 inch (2 cm)
C). Bottom Edge - Unknown
D). Lockscrew Holes - 2

2). Decoration

A). Sideplate - Ia (partial)
B). Thumbplate - B

3). General Characteristics

A). Overall Length - 6 1/2 inches (16.5 cm)
B). Markings - Initial "H" and illegible mark on stock inside lock cavity.
C). Comments - None
D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M29

Description:

1). Lockplate
   A). Length       - 3 1/2 inches (9 cm)
   B). Breadth      - 3/4 inch (2 cm)
   C). Bottom Edge  - Unknown
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate    - No
   B). Thumbplate   - No

3). General Characteristics
   A). Overall Length - 7 1/4 inches (18.5 cm)
   B). Markings      - Initial "H" and illegible mark on stock inside lock cavity.
   C). Comments      - None
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M30

Description:

1). Lockplate
   A). Length - Unknown
   B). Breadth - Unknown
   C). Bottom Edge - Unknown
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - No
   B). Thumbplate - No

3). General Characteristics
   A). Overall Length - 6 1/2 inches (16.5 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record

PB5 87 M31

Description:

1). Lockplate

   A). Length  -  Unknown
   B). Breadth -  Unknown
   C). Bottom Edge -  Unknown
   D). Lockscrew Holes -  Unknown

2). Decoration

   A). Sideplate -  Unknown
   B). Thumbplate -  A

3). General Characteristics

   A). Overall Length -  5 inches (12.5 cm)
   B). Markings -  None
   C). Comments -  None
   D). Treatment Method -  Acetone-rosin (unheated)

Artifact Record

PB5 87 M32

Description:

1). Lockplate

   A). Length  -  Unknown
   B). Breadth -  Unknown
   C). Bottom Edge -  Unknown
   C). Lockscrew Holes -  Unknown

2). Decoration

   A). Sideplate -  Unknown
   B). Thumbplate -  C

3). General Characteristics

   A). Overall Length -  4 1/2 inches (11.5 cm)
   B). Markings -  Initial "H" on stock inside lock cavity.
   C). Comments -  None
   D). Treatment Method -  Acetone-rosin (unheated)
Artifact Record
PB5 87 M33

Description:

1). Lockplate
   A). Length - Unknown
   B). Breadth - 3/4 inch (2 cm)
   C). Bottom Edge - Unknown
   D). Lockscrew Holes - Unknown

2). Decoration
   A). Sideplate - No
   B). Thumbplate - No

3). General Characteristics
   A). Overall Length - 6 inches (15.3 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M34

Description:

1). Lockplate
   A). Length - 3 1/2 inches (9 cm)
   B). Breadth - Unknown
   C). Bottom Edge - Slight curve
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - Ia
   B). Thumbplate - ? (partial)

3). General Characteristics
   A). Overall Length - 5 1/4 inches (13.3 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M35

Description:
1). Lockplate
   A). Length - Unknown
   B). Breadth - Unknown
   C). Bottom Edge - Unknown
   D). Lockscrew Holes - Unknown

2). Decoration
   A). Sideplate - Unknown
   B). Thumbplate - C

3). General Characteristics
   A). Overall Length - 4 1/2 inches (11.5 cm)
   B). Markings - Initial "H" on stock inside lock cavity.
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M36

Description:
1). Lockplate
   A). Length - Unknown
   B). Breadth - Unknown
   C). Bottom Edge - Slight curve
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - No
   B). Thumbplate - No

3). General Characteristics
   A). Overall Length - 5 1/2 inches (14 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record

PB5 87 M37

Description:

1). Lockplate
   A). Length - Unknown
   B). Breadth - Unknown
   C). Bottom Edge - Unknown
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - Ia (partial)
   B). Thumbplate - ? (degraded)

3). General Characteristics
   A). Overall Length - 6 inches (15.3 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record

PB5 87 M38

Description:

1). Lockplate
   A). Length - 3 1/2 inches (9 cm)
   B). Breadth - Unknown
   C). Bottom Edge - Unknown
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - Ia
   B). Thumbplate - A

3). General Characteristics
   A). Overall Length - 7 inches (18 cm)
   B). Markings - None
   C). Comments - This pistol is a screw-barrelled pocket pistol.
   D). Treatment Method - Acetone-rosin (unheated)
Figure 69. PB5 87 M37.

Figure 70. PB5 87 M38.
Artifact Record

PB5 87 M39

Description:

1). Lockplate
   A). Length - 3 1/2 inches (9 cm)
   B). Breadth - 3/4 inch (2 cm)
   C). Bottom Edge - Slight curve
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - Ia
   B). Thumbplate - ? (degraded)

3). General Characteristics
   A). Overall Length - 7 1/4 inches (18.5 cm)
   B). Markings - Initial "H" and illegible mark on stock inside lock cavity.
   C). Comments - This pistol is a screw-barrelled pocket pistol.
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record

PB5 87 M40

Description:

1). Lockplate
   A). Length - 3 3/4 inches (9.5 cm)
   B). Breadth - 3/4 inch (2 cm)
   C). Bottom Edge - Slight curve
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - ? (degraded)
   B). Thumbplate - B

3). General Characteristics
   A). Overall Length - 6 1/2 inches (16.5 cm)
   B). Markings - Illegible marks on stock inside lock cavity.
   C). Comments - This pistol is a screw-barrelled pocket pistol.
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M41

Description:

1). Lockplate
   A). Length - 3 1/2 inches (9 cm)
   B). Breadth - 3/4 inch (2 cm)
   C). Bottom Edge - Slight curve
   D). Lockscrew Holes - 2

2). Decoration
   A). Sideplate - Ia
   B). Thumbplate - C

3). General Characteristics
   A). Overall Length - 7 inches (18 cm)
   B). Markings - Initial "H" on stock inside lock cavity.
   C). Comments - This pistol is a screw-barrelled pocket pistol.
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M42

Description:

1). Decoration
   A). Sideplate - Unknown
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 1 3/4 inches (4.5 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M43

Description:

1). Decoration
   A). Sideplate - Unknown
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 2 1/4 inches (5.5 cm)
   B). Markings - None
   C). Comments - No spurs on butt cap.
   D). Treatment Method - Acetone-rosin
      (unheated)

Artifact Record
PB5 87 M44

Description:

1). Decoration
   A). Sideplate - ? (degraded)
   B). Thumbplate - A (partial)

2). General Characteristics
   A). Overall Length - 3 1/4 inches (8.5 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin
      (unheated)
Artifact Record
PB5 87 M45

Description:

1). Decoration
   A). Sideplate - Unknown
   B). Thumbplate - No

2). General Characteristics
   A). Overall Length - 2 3/4 inches (7 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M46

Description:

1). Decoration
   A). Sideplate - Unknown
   B). Thumbplate - No

2). General Characteristics
   A). Overall Length - 3 1/2 inches (9 cm)
   B). Markings - None
   C). Comments - No spurs on butt cap.
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M47

Description:
1). Decoration
   A). Sideplate       -  Ia (partial)
   B). Thumbplate      -  C

2). General Characteristics
   A). Overall Length   -  3 3/4 inches (9.5 cm)
   B). Markings         -  None
   C). Comments         -  None
   D). Treatment Method -  Acetone-rosin (unheated)

Artifact Record
PB5 87 M48

Description:
1). Decoration
   A). Sideplate       -  No
   B). Thumbplate      -  No

2). General Characteristics
   A). Overall Length   -  3 1/4 inches (8.5 cm)
   B). Markings         -  None
   C). Comments         -  None
   D). Treatment Method -  Acetone-rosin (unheated)
Artifact Record
PB5 87 M49

Description:
1). Decoration
   A). Sideplate        -     Ia (partial)
   B). Thumbplate       -     No

2). General Characteristics
   A). Overall Length    -     3 3/4 inches (9.5 cm)
   B). Markings          -     None
   C). Comments          -     None
   D). Treatment Method  -     Acetone-rosin (unheated)

Artifact Record
PB5 87 M50

Description:
1). Decoration
   A). Sideplate        -     Ia (partial)
   B). Thumbplate       -     Unknown

2). General Characteristics
   A). Overall Length    -     3 3/4 inches (9.5 cm)
   B). Markings          -     None
   C). Comments          -     This is a fragment of a screw-barrelled pocket pistol.
   D). Treatment Method  -     Acetone-rosin (unheated)
Artifact Record
PB5 87 M51

Description:
1). Decoration
   A). Sideplate      -  Ia (partial)
   B). Thumbplate    -  Unknown

2). General Characteristics
   A). Overall Length -  3 inches (7.5 cm)
   B). Markings      -  None
   C). Comments      -  This is a fragment of a screw-barrelled pocket pistol.
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M52

Description:
1). Decoration
   A). Sideplate      -  Ia (partial)
   B). Thumbplate    -  Unknown

2). General Characteristics
   A). Overall Length -  3 inches (7.5 cm)
   B). Markings      -  None
   C). Comments      -  This is a fragment of a screw-barrelled pocket pistol.
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M53

Description:

1). Decoration
   A). Sideplate    -  No
   B). Thumbplate   -  Unknown

2). General Characteristics
   A). Overall Length -  2 1/2 inches (6.3 cm)
   B). Markings      -  None
   C). Comments      -  This is a fragment of a screw-barrelled pocket pistol.
   D). Treatment Method -  Acetone-rosin (unheated)

Artifact Record
PB5 87 M54

Description:

1). Decoration
   A). Sideplate    -  ? (degraded)
   B). Thumbplate   -  Unknown

2). General Characteristics
   A). Overall Length -  4 inches (10 cm)
   B). Markings      -  None
   C). Comments      -  This is a fragment of a screw-barrelled pocket pistol.
   D). Treatment Method -  Acetone-rosin (unheated)
Artifact Record
PB5 87 M55

Description:

1). Decoration

A). Sideplate - No
B). Thumbplate - Unknown

2). General Characteristics

A). Overall Length - 4 1/4 inches (10.5 cm)
B). Markings - None
C). Comments - It has a wooden ramrod.
D). Treatment Method - Acetone-resin (unheated)

Artifact Record
PB5 87 M56

Description:

1). Decoration

A). Sideplate - ? (partial)
B). Thumbplate - Unknown

2). General Characteristics

A). Overall Length - 4 1/4 inches (10.5 cm)
B). Markings - None
C). Comments - It has a wooden ramrod.
D). Treatment Method - Acetone-resin (unheated)
Artifact Record
PB5 87 M57

Description:

1). Decoration
   A). Sideplate - No
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 3 3/4 inches (9.5 cm)
   B). Markings - None
   C). Comments - It has a wooden ramrod.
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M58

Description:

1). Decoration
   A). Sideplate - No
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 3 1/2 inches (9 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M59

Description:

1). Decoration
   A). Sideplate - No
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 3 1/4 inches (8.5 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M60

Description:

1). Decoration
   A). Sideplate - No
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 2 1/4 inches (5.5 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M61

Description:

1). Decoration
A). Sideplate - ? (partial)
B). Thumbplate - Unknown

2). General Characteristics
A). Overall Length - 2 inches (5 cm)
B). Markings - None
C). Comments - None
D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M62

Description:

1). Decoration
A). Sideplate - No
B). Thumbplate - Unknown

2). General Characteristics
A). Overall Length - 2 1/2 inches (6.3 cm)
B). Markings - None
C). Comments - None
D). Treatment Method - Acetone-rosin (unheated)
Artifact Record
PB5 87 M63

Description:
1). Decoration
   A). Sideplate - Unknown
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 2 inches (5 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)

Artifact Record
PB5 87 M64

Description:
1). Decoration
   A). Sideplate - Unknown
   B). Thumbplate - Unknown

2). General Characteristics
   A). Overall Length - 1 3/4 inches (4.5 cm)
   B). Markings - None
   C). Comments - None
   D). Treatment Method - Acetone-rosin (unheated)
TYPOLOGY CHART 1

CATALOG OF SIDEPLATES

TYPE Ia

PB5 87 28.

PB5 87 108.

PB5 87 115.

PB5 87 148-1-2.

PB5 87 M2.
PB5 87 M3.

PB5 87 M14.

PB5 87 M15.

PB5 87 M18.

PB5 87 M19.

PB5 87 M28.

PB5 87 M34.
PB5 87 M51.

PB5 87 M52.

TYPE Ib

PB5 87 148-1-1.

PB5 87 148-7.
TYPE II

PB5 87 107.

PB5 87 M7.

TYPE III

PB5 87 110.

PB5 87 M5.

PB5 87 M6.

PB5 87 M17.
TYPOLOGY CHART 2
CATALOG OF THUMBPLATES

TYPE A

PB5 87 148-1-2.  PB5 87 M2.  PB5 87 M3.

PB5 87 M31.  PB5 87 M38.  PB5 87 M44.

TYPE B

PB5 87 107.  PB5 87 148-4.  PB5 87 M23.  PB5 87 M40.
TYPE C

PB5 87 28.

PB5 87 108.

PB5 87 M12.

PB5 87 M13.

PB5 87 M32.

PB5 87 M35.

PB5 87 M41.

PB5 87 M47.
TYPE D

PB5 87 110.

PB5 87 115.

TYPE E

PB5 87 148-7.

PB5 87 M5.
TYPOLOGY CHART 3

CATALOG OF BUTT CAP SPUR LENGTHS

TYPE 1

TYPE 2

TYPE 3
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McKerrell, H. E. Roger and A. Varsanyi  
Miller, Martin

Muller, Heinrich

Neal, W. Keith

Parrent, James M.


Parry, John H.

Pawson, Michael and David Buissere

Peterson, Harold L.

Plenderleith, H.J. and A.E.A. Werner

Radcliffe, Virginia

Rosa, Joseph G. & Robin May

Smith, Roger C.

Van Rensselaer, S.
Wilkinson, Frederick


VITA

NAME
Lisa Lynn Garigen

DATE OF BIRTH
September 6, 1965

ADDRESS
2581 Church Rd.
Attica, New York 14011

DEGREE
1987 BA in Anthropology; State University of New York at Binghamton.

WORK EXPERIENCE
Summer 1990
Mariah Associates, Inc.
Excavation of historic and prehistoric sites at Palo Duro, Texas.

Summer 1989
Port Royal, Jamaica; Texas A&M University
Excavation of 1691 portion of sunken city of Port Royal.

Summer 1988
Port Royal, Jamaica; Texas A&M
Recataloging of artifacts recovered during the previous years' excavations.

Summer 1987
University of Buffalo
Excavation of prehistoric Indian campground.