BLOOD AND WATER;

THE ARCHAEOLOGICAL EXCAVATION AND HISTORICAL ANALYSIS

OF THE WRECK OF THE *INDUSTRY,* A NORTH-AMERICAN TRANSPORT

SLOOP CHARTERED BY THE BRITISH ARMY AT THE END OF THE SEVEN

YEARS' WAR: BRITISH COLONIAL NAVIGATION AND TRADE TO SUPPLY

SPANISH FLORIDA IN THE EIGHTEENTH CENTURY

A Dissertation

by

MARIANNE FRANKLIN

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

DOCTOR OF PHILOSOPHY

December 2005

Major Subject: Anthropology

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Approved by:

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Major Subject: Anthropology

ABSTRACT

Blood and Water; the Archaeological Excavation and Historical Analysis of the
Wreck of the *Industry,* a North-American Transport Sloop Chartered by the British
Army at the End of the Seven Years' War: British Colonial Navigation and Trade to
Supply Spanish Florida in the Eighteenth Century. (December 2005)
Marianne Franklin, B.A. Eckerd College; M.A., Texas A&M University
Chair of Advisory Committee: Dr. Donny L. Hamilton

This dissertation reports on the location, excavation and analysis of a 1764
shipwreck site discovered near the coast of St. Augustine, Florida. Archaeological
material recovered from the site during three field seasons co-directed by the author
(1997-1999) is integrated with historical information to create a clearer picture of
eighteenth-century trade, supply and navigation to St. Augustine (settled in 1565).

Recognizing the importance of the sea to the location, settlement, and
occupation of St. Augustine, Southern Oceans Archaeological Research, Inc.
(SOAR) combined archival research with a remote sensing survey to locate
magnetic anomalies that might represent vessels lost during all periods of St.
Augustine's occupation. Test excavations in 1997 located a shipwreck site (No.
8SJ3478) in twenty feet of water offshore from the St. Augustine Lighthouse.
Though no hull structure was uncovered, three anchors and eight cannons were
recorded *in situ.* The cannons, anchors, and most of the artifacts recovered, were
identified as belonging to the British empire during the reign of George II (1727-
1760). The location of the wreckage, as well as the recovered cargo, argues for the
identification of the vessel lost at site 8SJ3478 as the *Industry*.

The Spanish withdrew both arms and inhabitants from Florida to Havana at
the end of the Seven Years' War. The Treaty of Paris ceded Florida to the British in
1763. The British Army headquartered in New York organized shipments of troops
and supplies to East and West Florida. The *Industry*, under the command of

Captain Daniel Lawrence, was one of four sloops detailed to serve as a transport to supply the British Florida garrisons. The *Industry* ran aground on the bar outside of St. Augustine's harbour on May 6, 1764. The transport was carrying six-pound cannons, ammunition and artificer's tools.

Further investigation of documents describing eighteenth-century trade and shipping to St. Augustine led to the discovery that the Lawrence family of sea captains provided a vital link between British New York and Spanish St. Augustine. An examination of the materials recovered from Site 8SJ3478 sheds light on exactly what a particular vessel carried during a period of transition in Florida's history.

TABLE OF CONTENTS

LIST OF FIGURES

FIGURE   Page

LIST OF TABLES

CHAPTER I

INTRODUCTION

This dissertation reports on the location, excavation and analysis of an eighteenth-century shipwreck site discovered offshore, near the coast of St. Augustine Florida. The site was identified, then studied in conjunction with archival evidence related to its mission and its loss. An examination of the archaeological material recovered from the site during three field seasons co-directed by the author (1997-1999) is integrated with historical information to create a clearer picture of trade, supply and navigation to St. Augustine, Florida during the eighteenth century.

Settled in 1565, St. Augustine, Florida is the oldest permanent European settlement in the continental United States of America (Deagan 1983). Though remote and difficult to approach, control of St. Augustine was sought after by the French, Spanish, and the British throughout the Ages of Discovery and Colonization. The Spanish, however, worked diligently to expel what they considered to be transgressors into their territory. Figure 1-1 shows the location of the settlement established by Spanish explorer Pedro Menéndez de Avilés on the northern tip of Florida's Atlantic coastline.

St. Augustine's position along the traditional sailing route between the New World and the Old made it a strategic location for Spanish occupation from the sixteenth century onward. Figure 1-2 shows the prevailing wind patterns that dictated Atlantic sailing routes (Parry 1966:41). A chart (Figure 1-3) shows the traditional route taken home by the convoyed vessels of the Spanish Plate Fleet. The homeward-bound vessels made use of the northern flow of the Atlantic Gulf Stream currents through the Bahamas Channel and passed closely to the northeastern Florida coast when returning to Europe with treasure and trade goods. The highlights detail the proximity to the Florida coast of the

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This dissertation follows the style and format of *Historical Archaeology*.
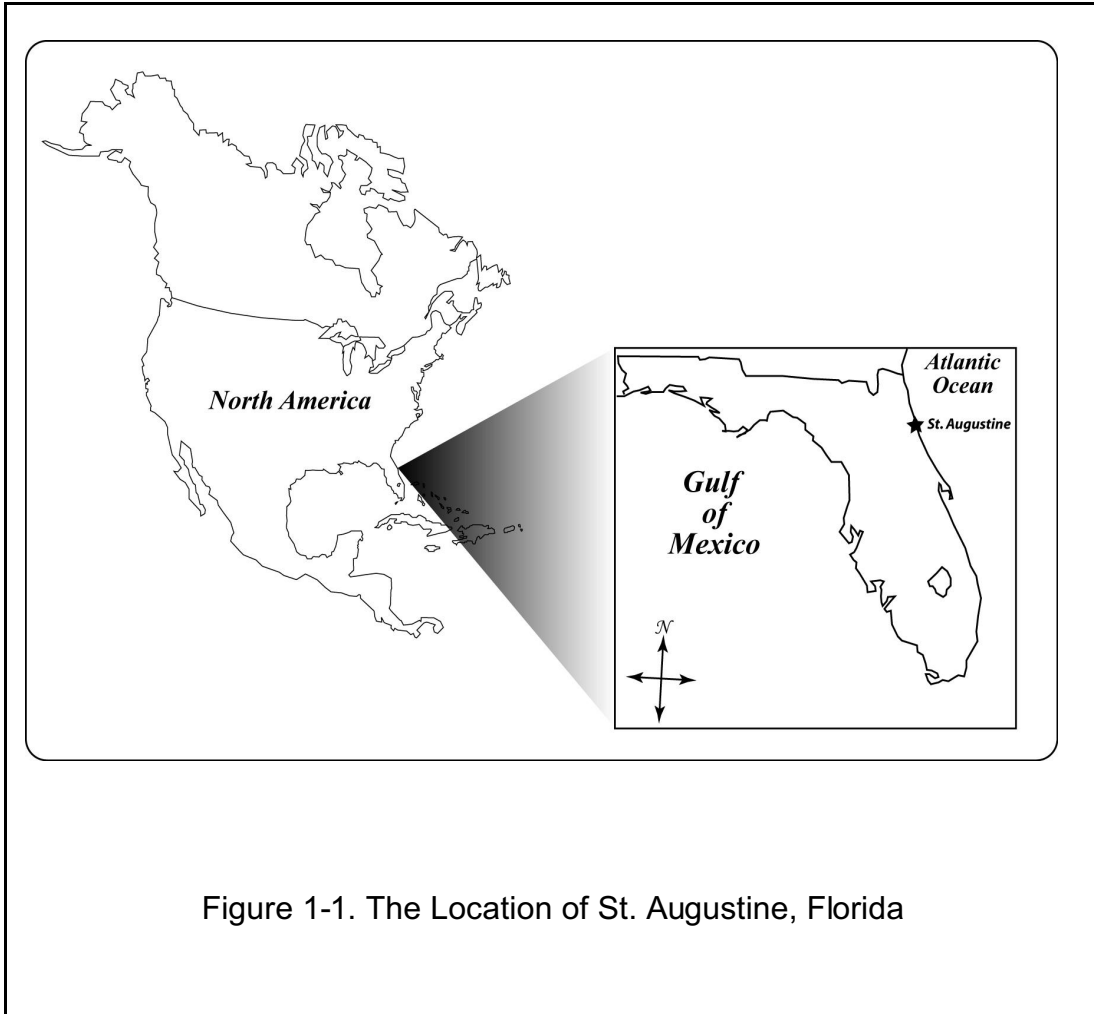
Figure 1-1. The Location of St. Augustine, Florida
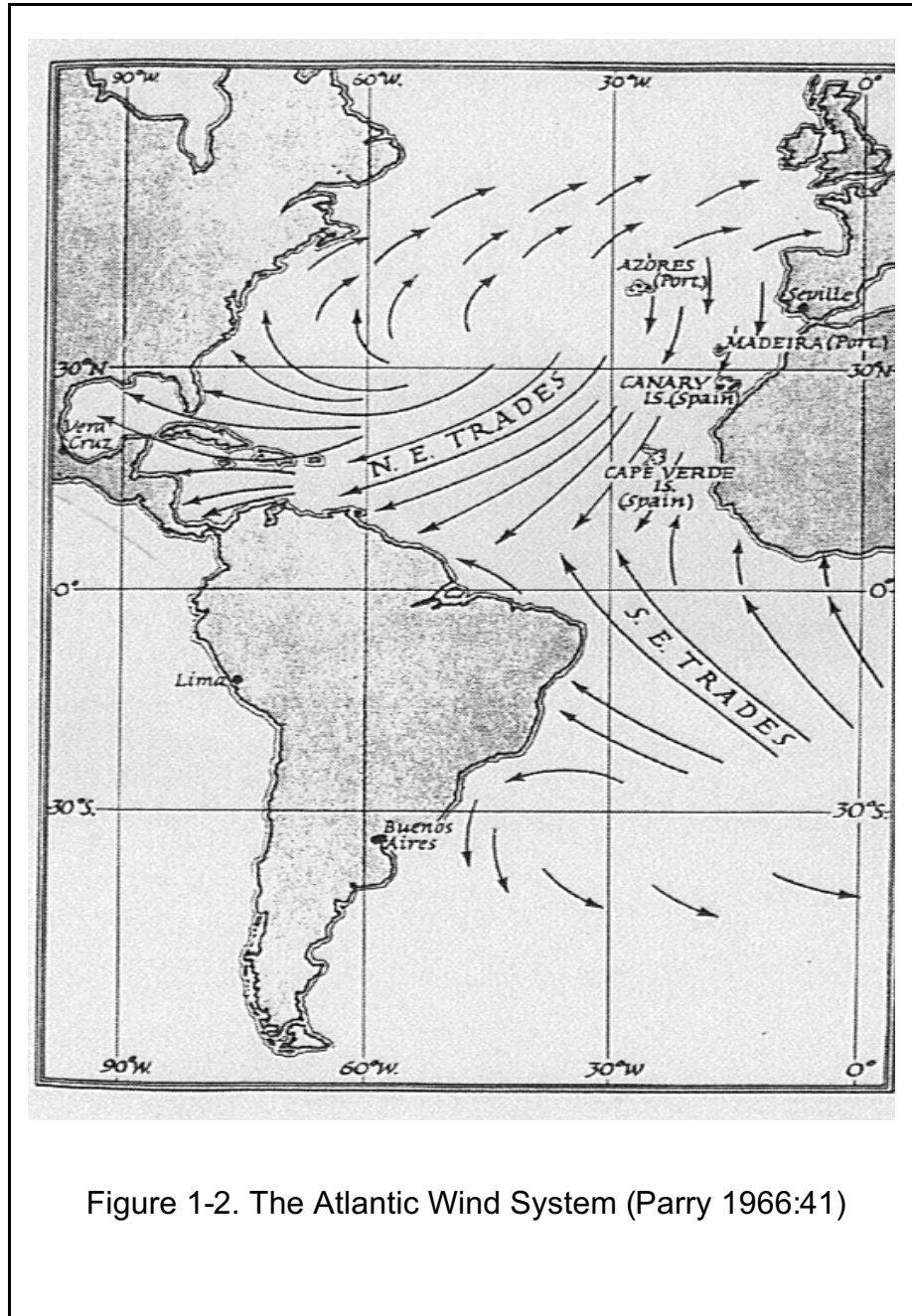
Figure 1-2. The Atlantic Wind System (Parry 1966:41)
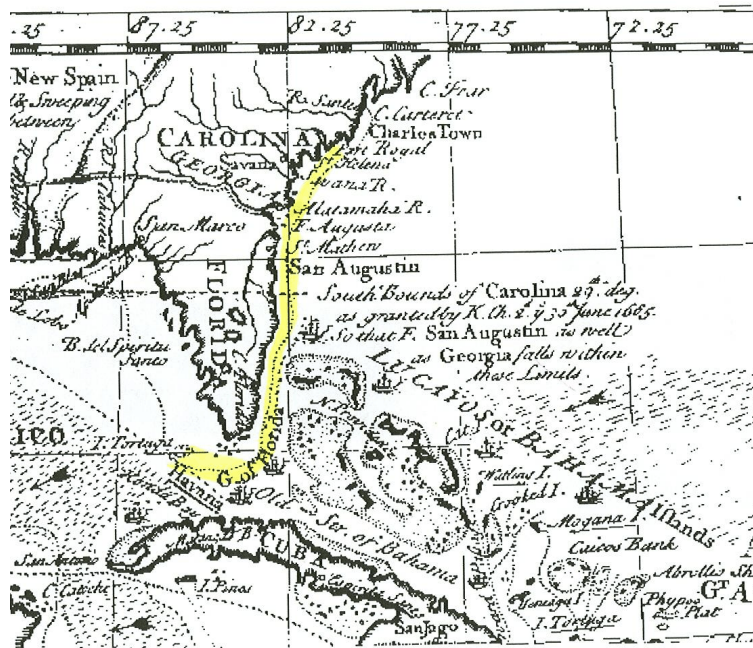
From a **Map or Chart of the West Indies, 1741**

Courtesy of the P.K. Yonge Collection , University of Florida, Gainesville

Figure 1-3.   Chart Showing Traditional Navigation Route From
New World Back to Spain Through the Bahamas Channel,
Detail from *A Map or Chart of the West Indies, drawn from
the best Spanish Maps, and Regulated by Astronomical
Observations, 1741*

route that the fleet (or *flota*) traveled, and thus explain the necessity for a Spanish presence to be maintained in St. Augustine to offer support for the convoy. Originally, the settlement served as a deterrent to foreign transgressions. Later, St. Augustine became a buffer to separate English colonies established to the north from Florida, the Gulf of Mexico, and Caribbean access routes. Shifting sands offshore have always made St. Augustine an incredibly difficult channel entrance through which to navigate. Recognizing St. Augustine's early settlement date, the Spanish garrison's reliance on the sea for trade and supply from colonial powers located outside of Florida, and the arduous conditions that imperiled vessels attempting to navigate into St. Augustine's harbour, Southern Oceans Archaeological Research (SOAR) chose the waters surrounding the settlement as the site for a maritime archaeological survey to locate potentially significant historic shipwrecks. SOAR is a not-for-profit Florida corporation dedicated to the excavation of historic shipwreck sites.

St. Augustine has a multifaceted cultural history, which is divided into three early periods of occupation for study (Table 1-1). Florida became an American territory in 1821.

TABLE 1-1
THE HISTORIC PERIODS OF ST. AUGUSTINE'S OCCUPATION

First Spanish	1565-1763
British	1763-1783
Second Spanish	1783-1821

SOAR began a comprehensive survey of both historical and archaeological maritime resources related to St. Augustine in 1995.   Archival research was combined with remote sensing survey to locate magnetic anomalies that might represent vessels lost during all periods of St. Augustine's occupation. Test

excavations in 1997 located a shipwreck site (Florida Bureau of Archaeological Research State Site File Number: 8SJ3478) in twenty feet (6m) of water less than eight-tenths of a mile (1.5km) offshore, southeast of the St. Augustine Lighthouse. Though no hull structure was uncovered, three anchors and eight cannons were recorded *in situ*, and appear to have been stowed in the hold at the time of the vessel's loss.

A single cannon was recovered from the site during the 1998 field season. After cleaning, the gun was identified as a British six-pounder, incised with a broad arrow signifying its status as government property, bearing the crest of King George II (1727-1760). A raised letter "A" with a bar across the top marked the cannon's starboard trunnion. This identified the gun as cast in Britain by the Ashburnham furnace in Sussex, southern England *circa* 1760-1763, near the end of the Seven Years' War (Brown 1989; 2000 and 2004, personal communication).

Test excavations continued on the site during the 1998 and 1999 field seasons. Though hull remains were still not encountered, precise site plans were developed and 785 artifacts recovered for conservation and analysis.   The artifacts completed their treatment at Texas A&M University's Conservation Research Laboratory and were returned to the Florida State Archives in Tallahassee by May 2002. In addition to armament and ammunition, the cargo recovered consists primarily of iron tools, including three crates of axe heads, numerous shovel blades, and several small hand tools.

Historical research has uncovered documents that suggest the vessel lost at the site was the transport sloop *Industry*. The Spanish withdrew both arms and inhabitants from Florida to Havana at the end of the Seven Years' War (Gold 1969). The Treaty of Paris ceded Florida to the British in 1763. The British Army headquartered in New York ordered a series of shipments of troops and supplies as they began to occupy the forts that protected the coastlines of East and West Florida.

The *Industry*, under the command of Captain Daniel Lawrence, was one of four sloops detailed to serve as transports to supply the garrison at St. Augustine between 4 April and 22 June in 1764 (Gage Papers, September 1764: Reel 2, 140G). The *Industry* ran aground on the bar outside of St. Augustine's harbour entrance on the 6th of May 1764. The transport was carrying six-pound cannons, ammunition and artificer's tools from New York to Florida (Gage Papers, 13 May 1764: Reel 1,Vol.18, 6, Ogilvie to Gage). The location of the wreckage, as well as the recovered cargo, argues for the identification of the vessel lost at site 8SJ3478 as the *Industry*.

Despite the absence of a ship's hull, the site has provided valuable insight into a transitional period for colonial powers in the New World. Artifacts recovered were examined in regard to their usage and origin. They were also compared to similar objects recovered from other archaeological sites, so as to provide an overall contextual analysis of the vessel lost at site 8SJ3478. This information, along with the myriad historic documents pertaining to eighteenth-century trade along North America's Atlantic coast, Gulf Coast, and throughout the Caribbean broadens our understanding of trade and supply to Florida and other British colonial ports in the New World.

Perhaps the most intriguing information to result from the excavations at site 8SJ3478 comes not from the archaeological evidence, but from historic research into the transport vessels and their captains hired by the British Army to supply St. Augustine during the takeover. The *Industry's* captain, Daniel Lawrence, and the names and captains of other transport vessels that plied the waters of St. Augustine prior to and just after the 1763 transition between Spanish and British rule were initially tracked through historic reports.

Typical weekly *Marine Intelligence* reports in the *South Carolina Gazette [SCG] (*1758-1764) and *Weyman's New-York Gazette* [*NYG*] (1759-1767), list the name and rig of all vessels, as well as their captains, home ports, destinations and arrivals in port. These accounts were transcribed and charted for the time period between 1758 and 1764. A pattern began to emerge that suggested a navigation and trade relationship between a family of mariners named Lawrence who were based in British-ruled New York and the residents of Spanish St. Augustine that had been ongoing throughout the eighteenth century. This trade flourished despite a series of intense conflicts between Britain and Spain that culminated in three declared Wars: Queen Anne's War 1702-1713, the War of Jenkin's Ear 1739-1748, and the Seven Years' War 1756-1763.

Research has uncovered historic documents that permitted special dispensations from both the Spanish and the British Crowns for a trading venture established by a family of New York merchants named Walton to supply the Spanish garrison at St. Augustine as early as 1726 (Walton Memorial, 1757, PRO, Colonial Office, Class 5. Vol.1068. Mn1-5). Official trade was sanctioned except during times of war. During the Seven Years' War British officials feared that supplies sent to the Spanish might then be redistributed to the French. Though Spain did not enter the conflict until 1762, in order to keep supplying St. Augustine, the British Board of Trade needed to be mollified. A hardship exception was requested and granted to permit trade in order to prevent the complete starvation of the Spanish garrison, as long as goods were restricted to a limited amount for sustenance only (Walton Memorial 1757; Harman 1969).

In times of both war and peace, eighteenth-century records invariably describe illegal trade and document colonial vessels exchanging goods in Caribbean ports under a neutral flag, particularly at Monte-Christi (*SCG*, June 23, 1759:5), and St. Domingue (Pares 1963:388-9) on the island of Hispaniola.

In addition to illicit trade, privateers often set out from St. Augustine to supply the garrison at times when trade was forbidden due to conflict between the British and Spanish Crowns. Spanish privateers preyed upon coastal trade through the straits of Florida and off the Carolina coast (see Figure 1-3) throughout the eighteenth century, particularly after Spain entered the conflict at the end of the Seven Years' War (Harman 1969).

Further investigation of coastal trade and shipping to St. Augustine prior to the Seven Years' War and of the Lawrence family of sea captains provided a vital link between two apparently geographically and nationally distinct colonial settlements. While the practices of legal and illicit trade and privateering in St. Augustine have been recorded in archival records (*NYG*, *SCG*, Olsberg 1973) and described in historic accounts (Gold 1969, Harman 1969), until now, no such documentation has been so directly represented by the research associated with the archaeological record. The excavation and analysis of site 8SJ3478, the transport sloop *Industry*, provide a useful study of the needs of an occupying army and the types of goods required to supply a new frontier in Florida at the end of the Seven Years' War. Further research of archival documents pertaining to supply Spanish St. Augustine prior to the vessel's loss portray a vivid picture of eighteenth-century British trade links to Spanish Florida in the years leading up to the transfer.

The future of further fieldwork on this site is uncertain. This study focuses on the work accomplished by SOAR during its first four field seasons in 1995, 1997, 1998 and 1999, originally described in Franklin and Morris, May 1996; Morris *et al* February 1998; Franklin *et al* May 1999; and Franklin 2000. Where appropriate, available information that was acquired during the St. Augustine Lighthouse & Museum maritime program's work on Site 8SJ3478 in 2000 is used to substantiate analysis of the material recovered between 1997 and 1999 (from Morris and Burns, June 2001).

This dissertation is organized in the following chapters. Following the Introduction, Chapter II describes the initial settlement and occupation of St. Augustine through 1700. Chapter III furnishes an overview of eighteenth-century European conflicts and their effects on St. Augustine's development.

Chapter IV provides an archaeological context for work on the *Industry* by describing the basic terrestrial archaeology of St. Augustine, previous and supplemental marine archaeological work in the area, and the work on site 8SJ3478 by the St. Augustine Lighthouse & Museum after 1999.

Chapter V describes the methodology for work performed on Site 8SJ3478 by SOAR between 1995 and 2005, including sections on: cartographic research, environmental assessment, computer assisted digitized drawings, areas selected for 1995 remote sensing survey, methods used for remote sensing survey, ground-truth testing, and the excavation of site 8SJ3478, as well as the basic conservation of the artifacts.

In Chapter VI, both the methods and preliminary results of the archival research will be presented. These helped to a) identify the vessel lost at site 8SJ3478, and b) refine the focus on colonial navigation between American colonies.

Chapter VII discusses the artifacts recovered from the site by SOAR between 1997 and 1999. Organized by artifact material type and usage, sections include armament, ammunition, tools, foodways, and personal items recovered from the site. Each section contains a basic description of the individual artifact recovered, along with any information on identification and comparative analysis to similar artifacts recovered from contemporary archaeological sites. A final section in the chapter provides a summary and analysis of the collection as a whole. Appendix C contains a complete catalogue of every artifact, including a drawing or photograph, specific dimensions, and the records for artifact recovery, associations, and conservation.

An examination of trade and supply to Spanish Florida provides a perspective based on primary and secondary historical sources in Chapter VIII. Initial sections describe the failed Spanish attempts at colonial supply, including the *situado* and the Royal Havana Company. A final section details early British trade with Spanish Florida, as exemplified by New York merchant William Walton and his St. Augustine merchant and factor Jesse Fish. Chapter IX provides a detailed study of the archival and genealogical information that reveals the connection between the Walton, Fish and Lawrence families of New York and St. Augustine throughout the eighteenth century. Daniel Lawrence was the captain of the *Industry* at the time of its sinking.

Chapter X contains a summary and conclusions pertaining to all of the material presented in this dissertation. Appendix A is a copy of the research permit for work in St. Augustine issued by the Florida Bureau of Archaeological Research. Transcriptions and summaries of pertinent archival research appear in Appendices B and D.

This study provides a base for ongoing research of site 8SJ3478, and information for forthcoming comparative analysis of similar supply vessel loss sites. Historical archaeology by definition relies upon a careful examination and comparison of the archaeological and historic records so as to create a clearer understanding of the past than may be obtained by one body of evidence alone. An examination of the materials recovered from Site 8SJ3478 sheds light on exactly what a particular vessel carried during a period of transition in Florida's history. Analysis of the artifacts recovered shows what was considered to be among the most important items needed to occupy the colony of a former enemy. Examination of the archaeological evidence at site 8SJ3478 in conjunction with myriad eighteenth-century documents pertaining to the British takeover of Florida, and legal and illicit trade among the coastal colonies and Caribbean ports, creates together a vivid picture of a transitional period in the history of the New World. Geographic proximity, blood ties, and the familiarity of coastal and Caribbean trade routes plied by merchant sailors helped to shape a

new reality for the residents of the North American seacoast: the Atlantic World, a world that was far removed from the rules, regulation, and increasingly excessive taxation still dictated by Old World legislation from far across the sea.

CHAPTER II

THE EARLY HISTORY OF ST. AUGUSTINE

La Florida was named for the feast of flowers (*flores*) by the first documented European visitor to make landfall on its Atlantic coast in 1513, Spanish explorer Juan Ponce de León (Milanich and Milbrath 1991:13). French Huguenots led by Jean Ribaud first explored the north coast of Florida in 1562. Ribaud claimed the territory for France, and his men named today's St. John's River after the month of its first sighting - the River of May (LeMoyne in Bennet 1968:6).

Renaud de Laudonnière returned in 1564 with 300 Protestant settlers to satisfy the orders of Charles IX to fortify the area and "maintain French dominion in Florida" (LeMoyne in Bennet 1968:91). Accompanying Laudonnière was Jacques le Moyne de Morgues, ordered to serve as official cartographer for the expedition (Bennett 1968:91). LeMoyne's somewhat fanciful narrative accompanies a series of beautifully detailed maps and drawings that chronicle the early Florida coastline (Figure 2-1). The French settled in Fort Caroline, nearly 45 miles (74km) north of historic St. Augustine, east of what is now downtown Jacksonville (Figure 2-2).

At the River of May the French encountered Florida's original inhabitants, Native Americans ruled by "King Saturioua" (LeMoyne in Bennet 1968:95). Today identified by their linguistic group as Timucuans, the Saturiwa traveled in dugout canoes for hunting, fishing and trade (Miller 1998:102-106). Timucuan subsistence followed a typical maritime pattern, based upon a diet centered on fish and shellfish, as well as limited horticulture, hunting and gathering (Deagan 1978:104).

Figure 2-1. Original View of the Florida Coast by
Jacques LeMoyne, 1564 (Bennet 1968:3)
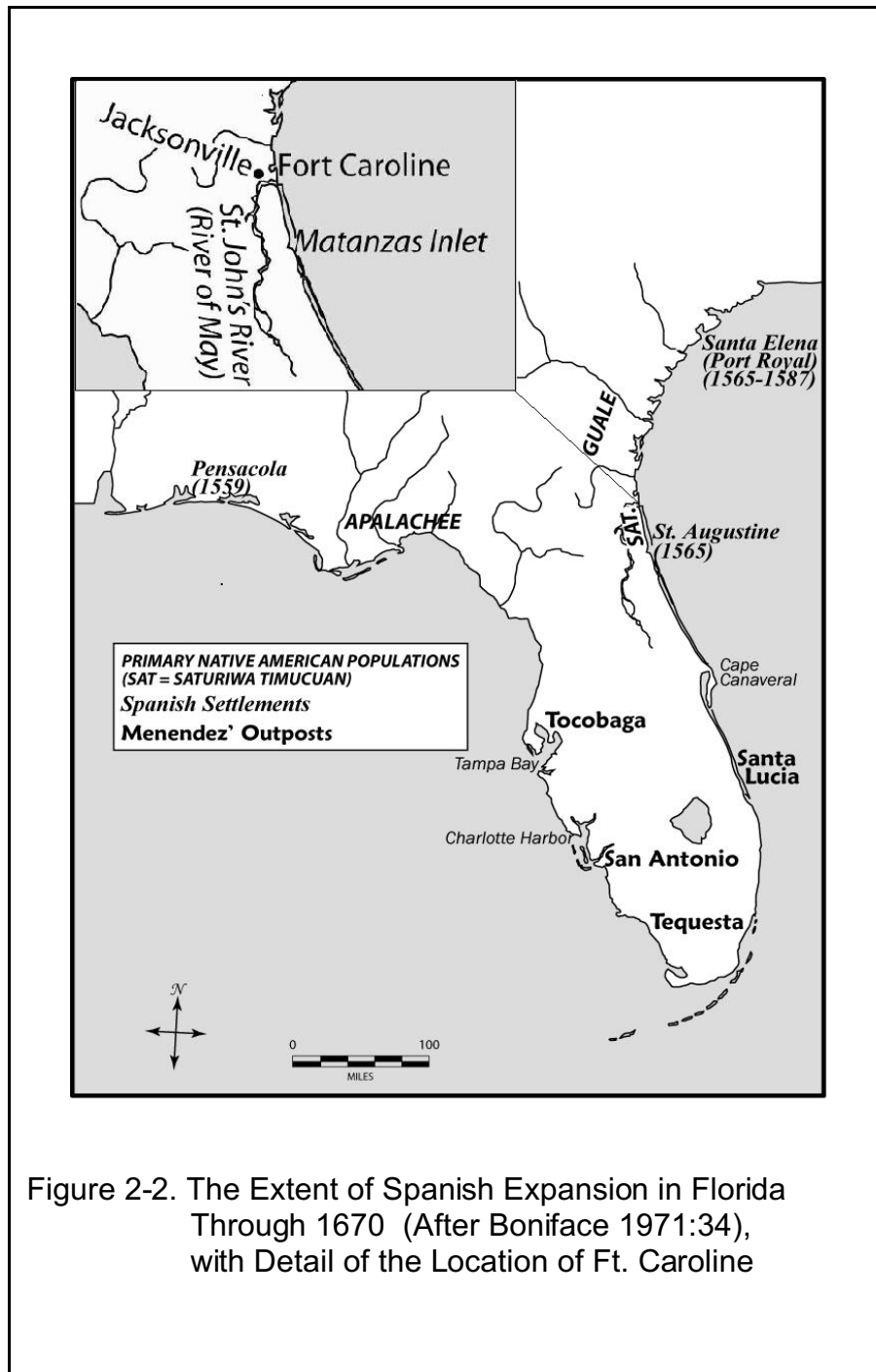
Figure 2-2. The Extent of Spanish Expansion in Florida
Through 1670 (After Boniface 1971:34),
with Detail of the Location of Ft. Caroline

The Apalachee, another tribe of hunter-gatherers, occupied the territory immediately west of the Timucuans, from present day Tallahassee north into what would become Georgia (Tebeau 1987).

The French presence in Florida threatened Spanish supremacy in the New World, as well as control of the sea lanes that provided passage for the treasure-laden ship convoys of the Plate Fleet en route home to Spain (see Figure 1-3). The Spaniards presumed to enjoy sole control of the North American coast and adjacent waters according to the terms of a fifteenth-century Papal mandate. Protestant Reformation in sixteenth-century Europe legitimized impetus for non-Catholic countries, including France, Holland and England, to begin encroaching on what had been Spain's exclusive domain (Brebner 1955:83). Widespread knowledge of the wealth of resources to be found in North, South and Central America provided more than adequate motivation.

Within 15 months of the establishment of Fort Caroline, Spanish forces were dispatched to Florida to protect their Crown's interests in the New World. An army led by Don Pedro Menéndez de Avilés made landfall in St. Augustine in September of 1565, and headed north to obliterate the French presence at Fort Caroline (Tebeau 1987; Lyon 1991:152).

SETTLEMENT

Menéndez, an aristocrat, explorer, and former naval officer (Tebeau 1987), set out for the New World from Cadiz in July of 1565 with nineteen ships and more than 1,000 men, both settlers and soldiers (Gannon 1993:22). He carried a royal charter that ordered him to protect, explore, and colonize the land of Florida. Menéndez was granted the position of *adelantado* by the king. This meant that Menéndez was expected to fund and oversee a permanent, viable colony in order to maintain a Spanish presence in North America, in return for ownership of a portion of the new land, a title, and shares in any of the venture's profit (Tebeau 1987).

In addition to protecting the Plate Fleet route home, a fundamental strategy

of the crown was to establish religious missions in order to begin converting the native residents of *La Florida* to Catholicism, thus inspiring a personal devotion to Spain (Lyon 1991:151: Dewhurst 1968:38-39).

After a brief, indecisive sea battle with the French off Fort Caroline, Menéndez retraced his passage south along the coast, choosing to establish his camp in the small port the French had named the "River of Dolphins" (see Figure 2-3). Menéndez chose the name St. Augustine in honor of the feast day on which the harbour was first sighted (Gannon 1993:25). On 8 September 1565, a formal ceremony and Catholic mass were held to commemorate settlement; the land was officially claimed for Philip II, King of Spain.

The lack of sufficient water depth at the harbour entrance forced two of Menéndez's largest vessels to anchor offshore, while their passengers and cargo were ferried over the bar into St. Augustine's small, but protected bay. A shrewd man and skilled mariner, Menéndez might have realized that although the shallow pass could prove a hindrance in receiving larger supply vessels, the restricted inlet access would also serve to defend St. Augustine against invasion by deep-drafted enemy warships (Tebeau 1987).

Figure 2-3. The River of Dolphins by Jacques LeMoyne, 1564
(Bennett 1968:5)

A drama played out during the next two months that helped to determine the fate of Florida. Spanish forces led by Menéndez reorganized and marched north to attack and capture Fort Caroline only eight days after formally establishing St. Augustine (Tebeau 1987). A French fleet led by Jean Ribaud set sail south to attack St. Augustine. En route, Ribaud's ships were caught by strong tropical force winds, blown 100 miles (160 km) below their original destination, and shipwrecked near Cape Canaveral. Ribaud and his surviving French troops regrouped and began to make their way north, walking up the coast. When this news reached St. Augustine, Menéndez and his forces marched south to meet the French. On the northern shore of an inlet 14 miles (22.5km) south of St. Augustine, the French were captured and encouraged to give up their Protestant beliefs and embrace Catholicism. Close to 300 French Huguenot shipwreck survivors who refused conversion were killed. These events caused the river and inlet to be named Matanzas, the Spanish term for the "place of slaughter" (Tebeau 1987). This ended the immediate French threat to the Spanish convoy system.

In 1565, the first fortification in St. Augustine was created by raising an earthen breastwork and digging a trench around the longhouse of the local aboriginal chief Seloy (Lowery 1959:158-159). *Nombre de Dios*, the first Catholic mission on North American soil, was set up nearby (Chaney and Deagan 1991:172). The location of the initial settlement was moved further inland to a more secure location one year later. The new fortress at St. Augustine was better positioned to protect the inlet entrance and resist the attacks of hostile Native Americans (Lowery 1959:159,252). In 1566, garrison records indicate that 75 men occupied St. Augustine; one-third of these were soldiers, the rest married men and their families (Lowery 1959:263). Later that year the fort was again repositioned slightly further inland to prevent damage by coastal erosion (Lowery 1959:256-7).

Pedro Menéndez de Avilés continued to explore Florida. Under his guidance, five additional fortified coastal positions were established between

1565 and 1568. One fort was located north of St. Augustine at *Santa Elena* (present day Beaufort, South Carolina). Further south Spanish positions were established at *Santa Lucia* and *Tequesta* on the Atlantic Coast, and on the Gulf at *San Antonio* (near Fort Myers) and *Tocobaga* (Safety Harbor) (Lyon 1991:154; Bushnell 1994:37). Figure 2-2 shows the locations of these fortifications. It was during these coastal explorations that Menéndez recognized the ease with which the powerful Bahamas Channel current (later named the Gulf Stream) would enable vessels to travel swiftly from Havana north along the Florida coast. He also discovered a smaller countercurrent that ran to the south immediately west of the Gulf Stream (ND: AGI *Santo Domingo* 115, Stetson Collection). This knowledge enabled Menéndez to establish a maritime network of supply from Cuba to serve his developing series of Florida outposts (Lyon 1974:189 and 1991:154; Morris *et al*, February 1998:14). Throughout the early stages of St. Augustine's development, a dependence on supplies shipped from Havana played an essential role in the colony's provisioning (or lack thereof).

OCCUPATION THROUGH 1700

Pedro Menéndez de Avilés died in 1574. Though governorship of the settlement remained in his family by inheritance, the crown assumed support of the colony through a government subsidy (Deagan 1983:23). Chapter VIII provides further description of the Spanish system of supply, the *situado*. St. Augustine became the capital of Spanish colonial Florida in 1576, after the settlement at *Santa Elena* was abandoned due to repeated attack by aggressive Native Americans (Kapitzke 2001:3).

In 1585, St. Augustine consisted of several wooden and palmetto structures including a church, council house, and storehouses, as well as private homes for the population of 300 men, women and children (Tebeau 1987). The missions in Florida, including *Nombre de Dios*, began to flourish and grow, due to new management duties undertaken by the Franciscan brethren (Chaney and Deagan 1991:172).

In 1586 St. Augustine was thoroughly sacked and burned by English forces led by "Sea Dog" privateer Sir Francis Drake. Figure 2-4 shows the extent of the settlement in 1586, along with an artist's rendition of Drake's fleet. The attack not only destroyed the settlement's structures, but also destroyed the food stores (Dewhurst 1968:72). The colony, precariously supplied to begin with, was devastated. Hostile Native Americans, a hurricane, a flood, and another calamitous fire would further imperil the rebuilt garrison before the end of the century. In 1598, in spite of continuing threats, there were more than 120 palmetto huts that served as homes for a population of 625 residents, only 225 of whom were soldiers (Tebeau 1987).
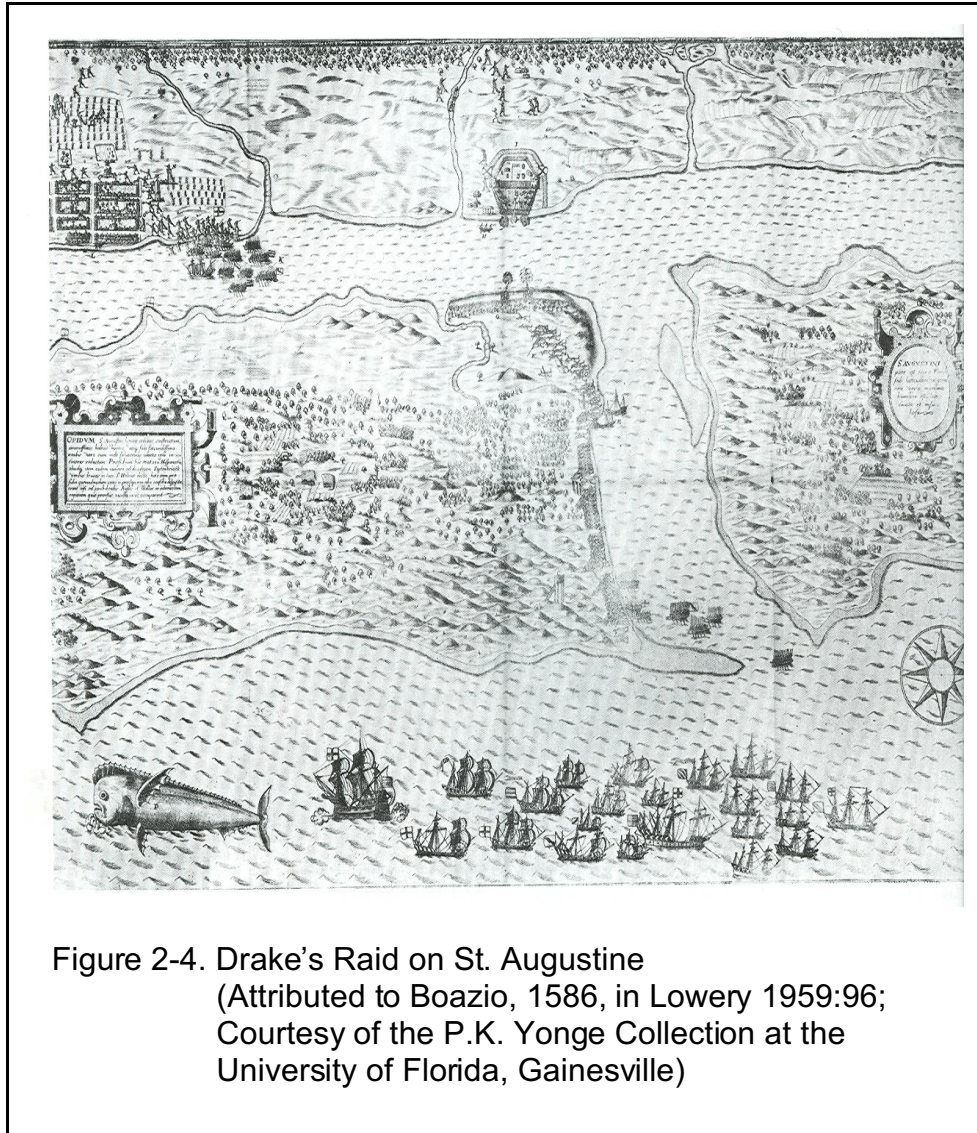
Figure 2-4. Drake's Raid on St. Augustine
(Attributed to Boazio, 1586, in Lowery 1959:96;
Courtesy of the P.K. Yonge Collection at the
University of Florida, Gainesville)

The Governor of Cuba held formal hearings in 1600, in response to numerous protests that the settlement was unfit to serve its purpose of defending the Plate fleet route. The complaints were numerous and varied. Drake's raid had proven the harbour undefendable. The bar at the harbour entrance restricted inland access to only the smallest ships. Tidal surges from hurricanes repeatedly flooded the town and the fort. There was not enough suitable land for the presidio to build upon, nor for the settlers to cultivate. Access to the Florida interior was difficult. St. Augustine was far removed from the trade route it claimed to protect, and from the victims of shipwreck on the Florida reefs that the settlement was supposed to save from starvation or Native American attack. Franciscan missionaries felt that St. Augustine was too far removed from the centers of Native American Populace, and favored a location further to the north (Tebeau 1987). Despite these claims, many which were merited, the small Spanish settlement on the Florida coast was maintained at St. Augustine.

Throughout most of the 1600s, St. Augustine is best described as a *presidio:* primarily a military outpost with an associated town (Kapitzke 2001:2,200). Though vegetables and fruits grew in abundance, there was never enough food produced to feed the residents of the settlement (Tebeau 1987). St. Augustine continued to be supplied primarily by sea. Many times vessels that safely navigated the passage to St. Augustine were lost while attempting to cross the narrow bar into the inlet. Records from 1622 indicate that a fleet of supply vessels eluded French corsairs on their approach to Florida, only to run aground while trying to enter the harbour (Bushnell 1983:46).

St. Augustine's population estimates range between 300 and 500 inhabitants through the 1650s. These figures were based on census reports that usually only listed the soldiers and a few subsidized widows and orphans attached to the garrison (Corbett 1976: 267; Kapitzke 2001:3).

A series of wooden watchtowers was built on Anastasia Island throughout the early Spanish occupation. The towers served to aid navigation, and could

also hold soldiers to act as lookouts against possible pirate attack or invasion (Harvey 1992:46).

The English established successful settlements in the Carolinas at the beginning of the latter half of the seventeenth century (Arnade 1959:1). Charles Town was settled in 1670 (Tebeau 1987). The Treaty of Madrid recognized England's right to settle North America above that latitude, while retaining Spain's claims to the south of the line (Arana 1978:17). This prompted new threats to Spanish dominance of the sea lanes offshore and the settlement at St. Augustine (Deagan 1983:25). A fiery attack on the garrison by English privateer Robert Searles in 1668 highlighted yet again the inadequacy of the Spaniard's wooden fort structures at its principal Florida outpost (Chatelain 1941:62-64; Deagan 1983:25). In response, security was heightened, more soldiers were deployed to St. Augustine, and construction was begun on a stone fortress built entirely of compressed shell (*coquina*) mined from Anastasia Island (Arana and Manucy 1977; Deagan 1983:25).

The population in St. Augustine remained small and stable until construction of the stone fort, the *Castillo de San Marcos*, began in 1672. Hundreds of forced laborers were brought into St. Augustine to assist with the project (Kapitzke 2001:3). The population of the town began to swell, and its identity as a distinct community was established. The population continued to grow as even more Native Americans arrived who were seeking protection from English settlers impinging from the north (Corbett 1976:267).

Through the early years the garrison served as a base for the numerous outlying Franciscan missions that were established between 1606 and 1702-04 (Chaney and Deagan 1991:172-173; McEwan 1993:xix-xx). As English traders based in Charles Town began to work west to Appalachicola, and then to the Mississippi River, some Native Americans who had been friendly to the Spanish switched allegiance and became threats (Arnade 1959:1-2). Loyal Native Americans from outlying missions in Apalachee and Guale (eastern Georgia) began to relocate closer to St. Augustine for protection. The Christian Native

Americans, or *Guales*, became the predominant aboriginal population in St. Augustine by the end of the seventeenth century (Deagan 1983:25). These new arrivals joined the second and third generation *Floridianos:* Spaniards born and raised in St. Augustine (Kapitzke 2001:3). Figure 2-5 is based upon a 1683 map of Florida commissioned by then Governor Cabrera to show the extent of the Native American settlements surrounding St. Augustine that were "under Spanish protection" (Bushnell 1994:164). By 1689 a census listed the population of the town at 1,444 residents (Corbett 1976:267; Kapitzke 2001:3).

The *Castillo de San Marcos* was completed in 1695. Figure 2-6 shows a current photograph of the stone castle, which though reconstructed, is still standing in its original configuration. The watchtower on the island was also replaced with one built of stone (Harvey 1992:46). As the century ended, though St. Augustine was now more secure against an invasion, its isolation, dependence on external provisions and lack of a lucrative trade product for export, when coupled with Spain's strict trade laws and the difficulties encountered by vessels attempting to reach the colony, severely limited the town's expansion and growth (Franklin and Morris, May 1996:42).

The eighteenth century saw additional threats to St. Augustine as English development continued to the north. Conflicts between warring European nations greatly affected colonial trade, which in turn affected St. Augustine's supply and development (further discussed in Chapter III).

Puerto y Poblacion de Sⁿ Jorge de la Nacion Ynglesa

LA FLORIDA

P^o de N^r S^a de la Cand^{ca}

Pueblo de Ynf̃

Pobl^a de Xp̃ños

P^o de Ocuya
P^o de Aspalaga
P^o de Oconi

dos P^{os} de Xp̃ños
y una de Ynf̃^s

Pueblo Patale
Bacisa
P^o de Escambe̍
P^o de Machava
P^o de Asile
Pueblo de Sⁿ Pedro
P^o de Sⁿ Matheo

P^o de Xp̃ños

P^o de Sⁿ Luis
Pueblo de Sⁿ Cuacara
P^o de Tarijica

Poblacion
de Yndios
P^o de Yvitachuco
P^o de Sta Cathalina
P^o de Sta Cruz
Sⁿ Fee Prov^a de Timuqua
Xpnos

Poblacion de Yndios
P^o de Sⁿ Carlos
P^o de Alubale
Nombre de d^s
P^o de Sⁿ Medellin
P^o de Tomole
P^o de Thomas de Xp̃ños

P^o de Yndios
P^o de Sⁿ Marcos
P^o de Sⁿ Fran^{co}
Cast^o y Ciud^d de Sⁿ Agustin
Puerto y P^o de Sⁿ Marcos
Eyvitanayo
Salamototo
Salamoto

GULF OF MEXICO

Sⁿ Antonio
P^o de Ynfieles

Mayaca
P^o de Ynf̃^s

P^o de Tampa
P^o de Ynf̃^s

Puerto y P^o de Ynfieles
P^o de Ynf̃^s

0   leaguas espanolas   35

north

Figure 2-5. Indian Settlements Under Spanish Protection in
Florida,1683, Prepared by Alonso Solana for
Governor Juan Cabrera (After Chatelain 1941:
Map 7 in Bushnell 1994:164)

Figure 2-6. Photograph of the *Castillo de San Marcos*
(Deagan 1983:11)

CHAPTER III

EIGHTEENTH-CENTURY EUROPEAN CONFLICTS AND

THEIR EFFECTS ON ST. AUGUSTINE'S DEVELOPMENT

According to historians, the population of St. Augustine at the beginning of the eighteenth century ranged between 1000 (Dunkle 1958:6-8) and 1500 individuals (Corbett 1976:268). The 1700 supply grant request listed 1600 Spanish residents: 350 soldiers, their families, and a few royal officials (AGI SD 836 in TePaske 1958:43). The rest of the inhabitants were either *Floridiano* settlers, Native Americans or black Africans. Runaway slaves from the English colony in Carolina could live freely in Florida by converting to Catholicism (Deagan 1983:33 and 2002:105). English Catholics were also permitted to settle in Florida (Dunkle 1958:6). Spanish law did allow slave ownership, and many Spaniards did own Black Africans. Spanish military operations utilized both slave and free Africans. A black militia had been formed in St. Augustine as early as 1683 (AGI Santo Domingo 226 in Deagan and Landers 1999:266).

The coquina fortress *Castillo,* completed in 1695*,* stood guard at the inlet entrance. Public buildings, including a warehouse, market, and homes for the Governor, Royal Accountant, and Treasurer surrounded a central waterfront plaza (Boniface 1971:71-72). Private residences on narrow earthen streets were built to the south of the plaza (Halbirt 1997and 2002:8) . A newly completed seawall ran along the river's edge between the fort and the city (Dewhurst 1968:82). Dwellings outside of the fort were mostly constructed of wooden posts, some framed and filled with wattle and daub (twigs and wooden laths slathered with clay) (Deagan 2002:103). A stone chapel served the mission at *Nombre de Dios* (Chaney and Deagan 1991:172). Though the destiny of the town was played out along the eastern seaboard and in the coastal waters of North America, decisions made overseas had considerable influence on the future of the Spanish in Florida.

In 1670, English settlement in Charles Town (Charleston, South Carolina)

began what historian Charles Arnade called an "undeclared" thirty-year war in North America fought through control of the Native Americans over disputed land between Spanish Florida and English Carolina in what would become eastern Georgia (1959:1). English traders moving west and south threatened many of the outlying missions in Apalachee and Guale that supplied St. Augustine and depended on the garrison for protection (Arnade 1959:1). The Yamassee Indians of southern Carolina were given whisky and arms by the British and encouraged to attack the missions of Spanish Florida (Skinner and Gaines 1974:99; Boniface 1971:42). Figure 3-1 shows the extent of Spanish Florida, as well as the location of the surrounding Native American territories, in 1700 (After Boniface 1971:40).

King William's War, fought between England and France (1689-1697), resulted in an English failure to remove the French from Canadian soil (Arnade 1959:2). In addition, the French had secured a foothold in Louisiana in the Gulf of Mexico by 1698. Spain immediately responded with the establishment of a permanent settlement in the western portion of Florida at Pensacola. French settlement then moved further east as French explorer Pierre LeMoyne (Sieur D'Iberville) established colonies at Biloxi, Mississippi in 1699, and Mobile Bay, Alabama in 1702. The French presence in the New World made the English at Carolina increasingly uneasy (Tebeau 1987:63), as settlers and traders struggled to retain Native American allegiance to maintain control of the peripheral lands on their interior borders (Arnade 1959:2). Figure 3-2 shows the locations and nationalities of colonial settlements in the New World at the turn of the century (after Boniface 1971:22).
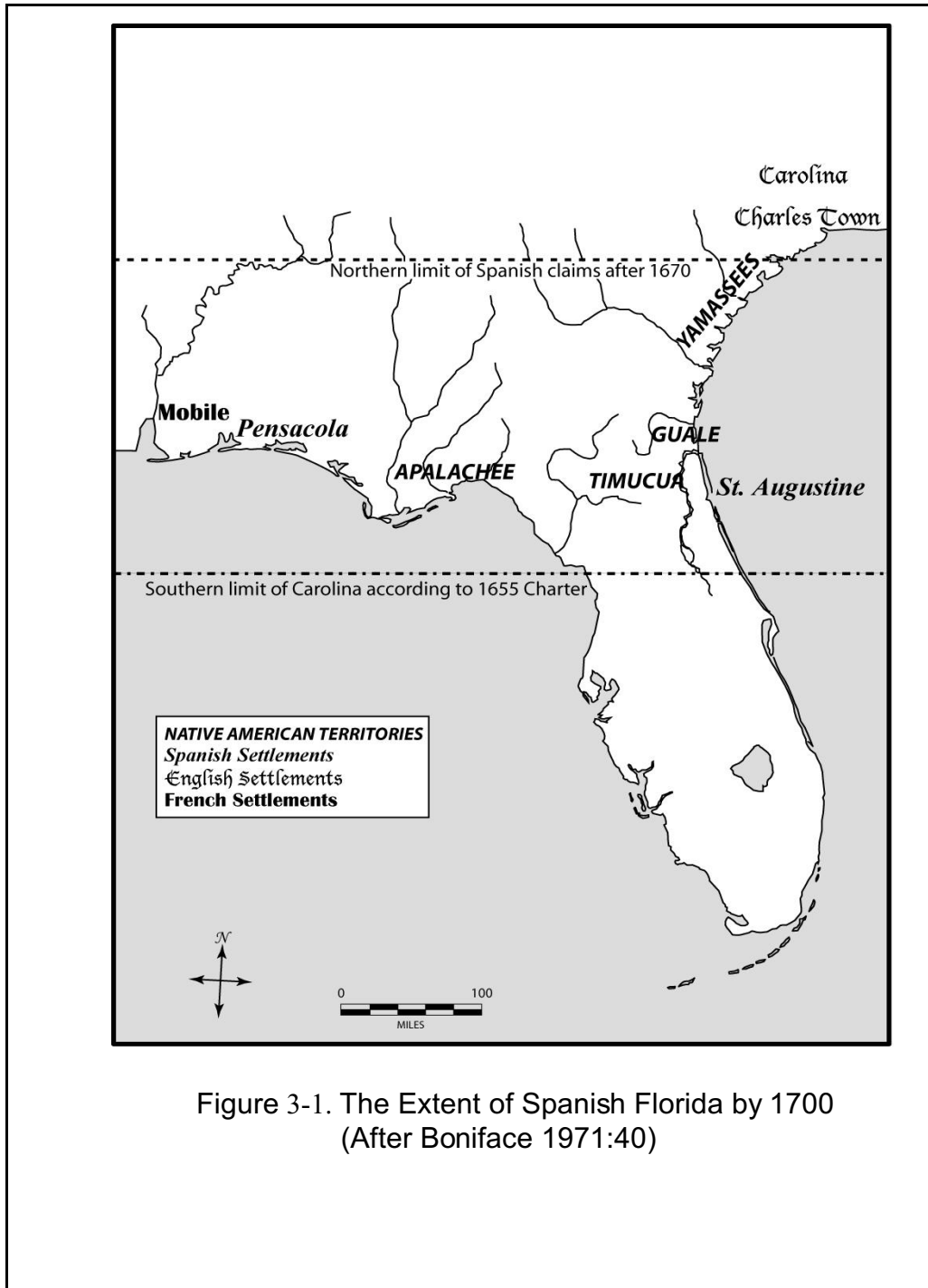
Figure 3-1. The Extent of Spanish Florida by 1700
(After Boniface 1971:40)
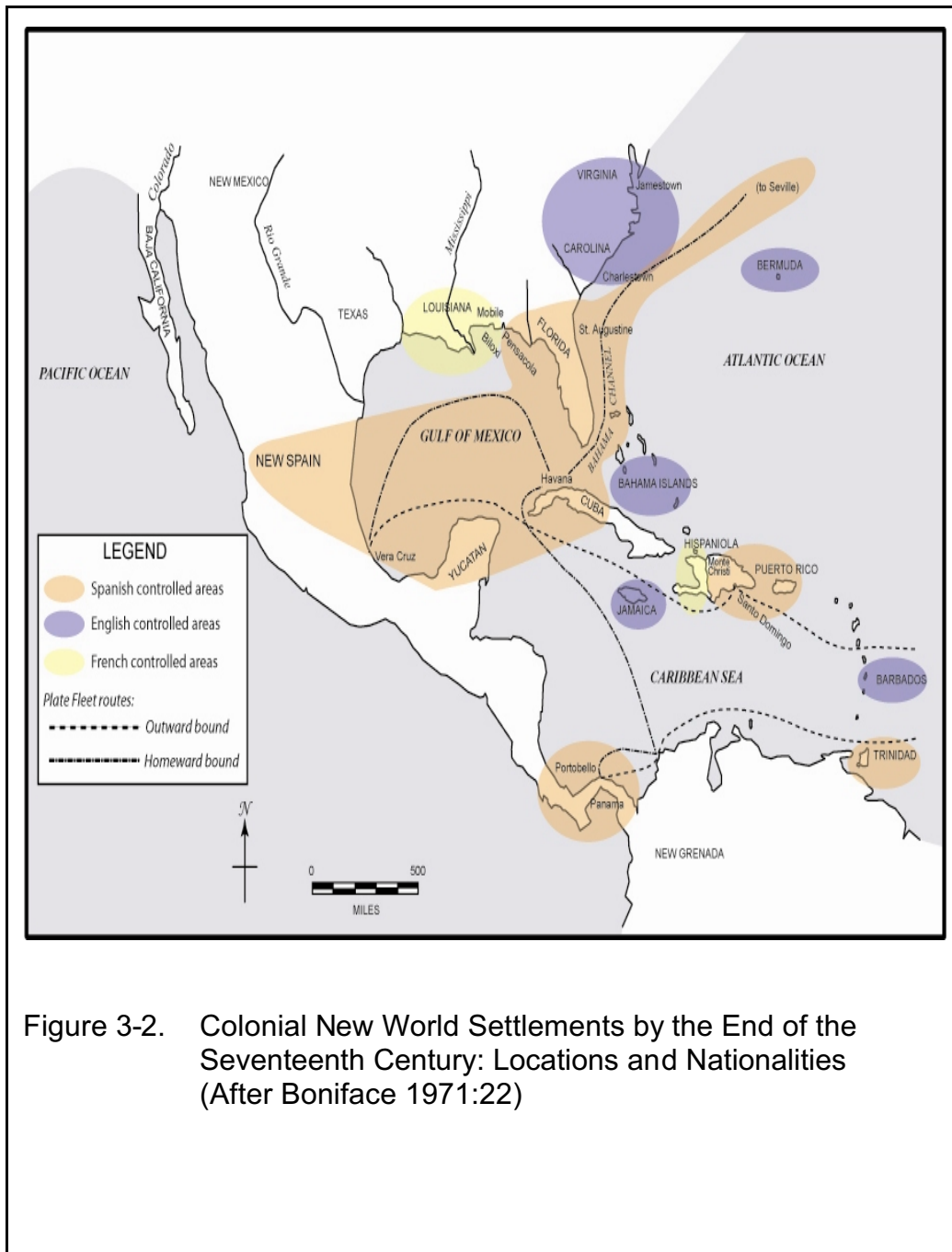
Figure 3-2.   Colonial New World Settlements by the End of the
               Seventeenth Century: Locations and Nationalities
               (After Boniface 1971:22)

Many of the wars fought in the eighteenth century were given different names overseas than what they were called in America. In many cases, wars fought in North America where the English and French were struggling over territory had a different name from wars fought in the southeast, where the main conflict was between the English and the Spanish. The various names, principal nations, and dates of the wars fought after 1700 are outlined in Table 3-1. For the purpose of this study the primary English vs. Spanish colonial American name for each conflict will be used [shown in bold in Table 3-1]. A brief discussion of the wars and their effect on St. Augustine and the Spanish in Florida follows.

QUEEN ANNE'S WAR

The War of Spanish Succession broke out in Europe in 1700 over a French attempt to claim the throne vacated after Charles II's death (Ganong 2002:52). The war was named for the new English Queen Anne when it spread to America in 1702. On the northern Atlantic coast of North America France was again pitted against England. Spain and England clashed in the southeast. St. Augustine, the capital of Spanish Florida, was the logical place for English forces to attack (Ganong 2002:53).

TABLE 3-1
EIGHTEENTH-CENTURY WARS THAT AFFECTED ST. AUGUSTINE

European and/or Colonial Conflict Names	Dates	Countries, Causes & Resolutions Pertinent to Florida History
War of Spanish Succession	1701-1713	England vs. France & Spain England overall victor
Queen Anne's War	1702-1713	Treaty of Utrecht: **Asiento**; England gets Newfoundland, Nova Scotia, Hudson Bay territory & Gibraltar from France; Minorca from Spain
War of Jenkins' Ear	1739-43	England vs. Spain over SE North American territory (Georgia established 1733) & trade between American & Caribbean colonies
War of Austrian Succession	1740-48	England vs. Prussia, France & Spain Peace of *Aix-la-Chapelle*: **Asiento** renewed (revoked in 1750)
King George's War	1744-1748	England vs. France over territory in North America (victory undecided- precursor to the French & Indian Wars)
Seven Years' War	1756-1763	England vs. France (& Spain in 1762) Treaty of Paris I, England gets Florida from & returns Havana to Spain
French and Indian Wars	1754-1760	England vs. France (and their Indian allies) over northern North American territory

Moore's 1702 Raid on Florida

James Moore became the Carolina Governor in 1700. When war broke out in Europe, Moore feared that allied Spanish and French forces would unite and strengthen, and he won support for a pre-emptive attack on St. Augustine (Arnade 1959:4). Moore gathered 1200 men - 600 Carolinians and 600 Yamassee and Creek warriors - and headed south to Florida, planning to destroy St. Augustine and acquire control of the stone fortress (Dewhurst 1968:83). Moore's troops traveled overland on foot and by small boat through coastal waters. En route they destroyed all of the Spanish missions in their path (Arnade 1959). In November of 1702 they arrived on the outskirts of St. Augustine. A contemporary French chart shows the plan of the port and the fort at St. Augustine, with a key that outlines key features of Moore's attack (Figure 3-3).

Eight English vessels entered the port on November 11 (AGI 58-2-8:B3 in Boyd 1948 translation of Zuniga's Report to the King, January 6,1703). Spanish Governor Zuniga, having received advanced warning, stocked and supplied the *Castillo* (Arnade 1959:23). Zuniga reported that more than 1500 residents from the outlying areas entered the fort to seek refuge (Boyd 1948:347). The entire garrison abandoned the town, and relied on the thick walls of the castle to protect them (Arnade 1959). In the beginning days of the siege, Zuniga burned the portion of the town closest to the castle walls, to destroy any cover Moore's troops might seek. The *Castillo de San Marcos* provided near complete protection. Spanish casualties were limited to fewer than ten, either from skirmishes outside the fort in the trenches, or due to exploding artillery (Zuniga 1703 in Boyd 1948:348).
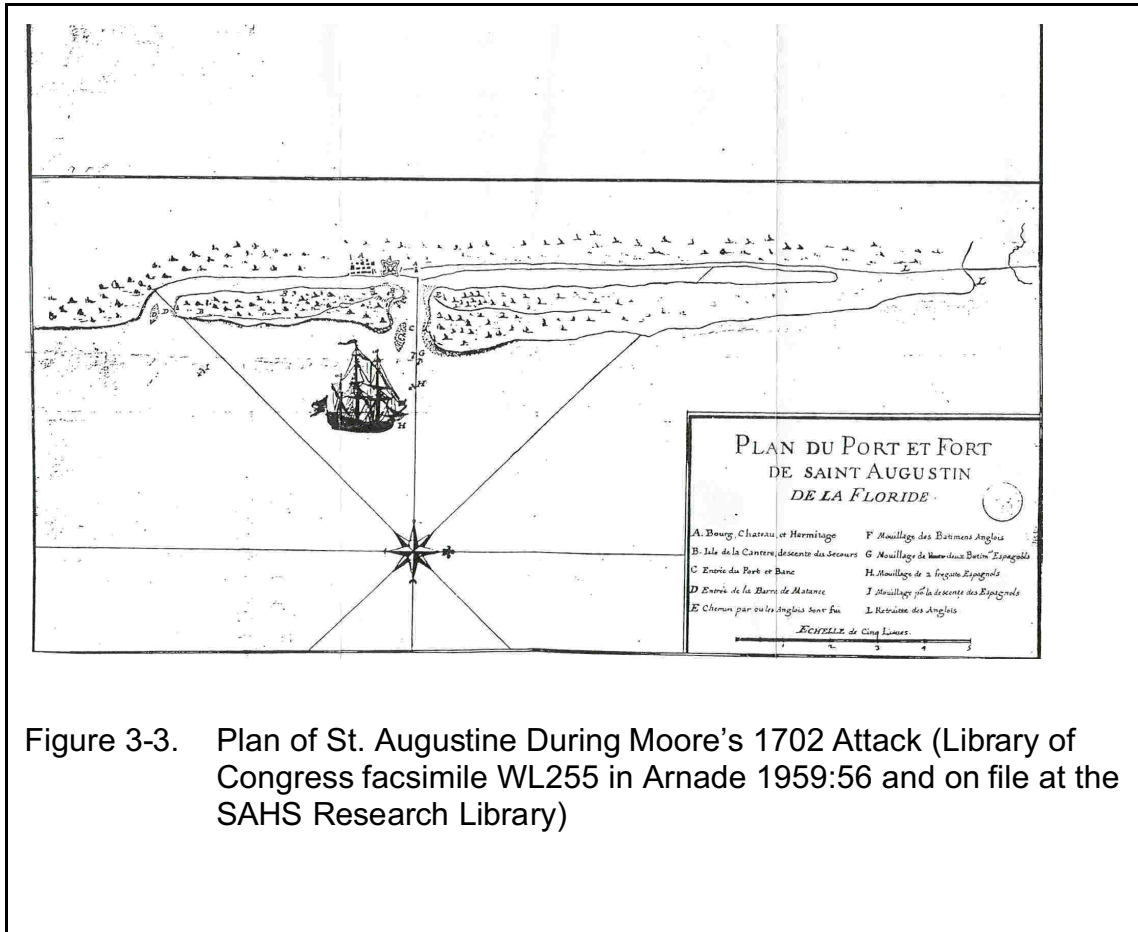
Figure 3-3. Plan of St. Augustine During Moore's 1702 Attack (Library of Congress facsimile WL255 in Arnade 1959:56 and on file at the SAHS Research Library)

The siege lasted nearly two months. Moore sent messengers to ask for reinforcement from the English fleet headquartered in Jamaica. The Spanish requested support from Havana. English troops dug in south of the Castle; both forces began waiting for assistance from abroad. The stand-off ended when four ships seen offshore turned out to be Spanish vessels arriving from Cuba (TePaske 1964:111-112). Moore retreated overland, first burning a wide swath through the town. On the barrier island north of the inlet, Moore's troops fired the remains of their own coastal fleet, though the Spanish were immediately able to salvage three of these vessels (Zuniga 1703 in Boyd 1948:349-350).

The castle gates were re-opened on 30 December 1702. Though the Spanish retained control of the fort, the town of St. Augustine was reportedly "in ashes" (Arnade 1959:57), for the settlement built mostly of wood had quickly been destroyed by the flames. Many residents were homeless and the parish church was destroyed (TePaske 1964:112). Only the hospital and twenty damaged homes outside of the castle walls were reported standing in 1703 (Arnade 1959:58; Halbirt 2002:30). The English enemy had also reportedly "burned all the farms and plantings and destroyed the cattle and crops" (Council of War Report to the King,1703, p. 140 in Arnade 1959:58). The Spanish governor resolved to shore up the garrison, requesting more men, small arms, artillery and ammunition from the King (Boyd 1948:351).

Presidio St. Augustine: After Moore's Raid

Moore, embarrassed by his failure to take the *Castillo de San Marcos*, returned to Carolina and immediately began planning for his next attack. He gathered a force of 50 Englishmen and 1500 Yamassee Indians and returned to Florida (Deagan 1983:26). In 1704, Moore focused on the outlying areas of Spanish Florida, those too far from St. Augustine to seek protection inside the walls of the *Castillo*. Moore's second expedition to Florida completely destroyed the Franciscan missions in Apalachee (central and north Florida), and effectively ended the Spanish colonial "mission system" in Florida (Deagan 1983:26). Most

mission Native Americans were either enslaved or killed in the attacks. The Native Americans and European settlers who survived Moore's attacks abandoned the interior and relocated nearer to St. Augustine (Deagan 1983:26). Walls with guardhouses were built around the city. The first of the defensive lines, the *Cubo*, was constructed in 1704. The *Cubo* line was constructed of earth and palm logs, with a moat. The line ran from the *Castillo's* north wall to the San Sebastian River (Halbirt 2002:7).

By 1710, the settled area of Spanish Florida was confined to the immediate vicinity of St. Augustine proper (TePaske 1964:113-116). The houses in the town that were destroyed by fire were rebuilt using new non-flammable materials, either coquina stone mined from Anastasia Island or a tabby mixture of oyster shells, lime and sand (Deagan 1983:26; Halbirt 2002:41) The Native American population of St. Augustine increased from 401 in 1714, to 1101 in 1726 (Deagan 1983:31). As the number of Florida residents dependant on St. Augustine began to swell, supplies from the missions in the Florida interior were no longer available. Reliance for sustenance was placed upon Spanish supplies shipped with the *situado* (a complex trans-oceanic system created to supply St. Augustine with both money and food). Problems with the delivery of the *situado* by sea were the common cause of reports that the residents were near starvation in St. Augustine throughout the first third of the eighteenth century. The English capture of the 1712 supply ship made "cats, horses, and dogs real delicacies at St. Augustine supper tables" (AGI SD 848 in TePaske 1958:45). The first reports of illegal English trade being actively solicited by the Spanish at St. Augustine begin at this time (TePaske 1958:45). Chapter VIII discusses the *situado*, and legal and illicit English trade with St. Augustine in detail.

Most Native Americans lived in mission villages that had been relocated to within twelve leagues (36 miles or 60 km) of the city. As the century went on, villages moved closer to the *Castillo* for the protection it provided (Deagan 1983:32).   The *Rosario* defensive line was constructed to the south and west of

the city (White 2002:34), with reinforced redoubts, in 1719.   Native American villages outside of the city walls were under repeated attack from hostile Native Americans who received encouragement from the English. The hermitage at the mission of *Nombre de Dios* was sacked and burned in 1728 by John Palmer with Native Americans from Carolina. The Spanish rebuilt the mission within the city's defensive system (Tebeau 1987:54).

Despite the Treaty of Madrid (1670) restrictions on English expansion south of Charles Town, Georgia was settled at Savannah in 1733, and Frederica in 1736 (Arana 1978:17). Figure 3-4 shows St. Augustine and its proximity to the English settlements in Georgia.

The English goal was to expand into Florida and remove the Spanish from North America. Although the Spanish considered the disputed land in Georgia their own (Arana 1978:17; Lanning 1936:135-137), their limited military resources instead forced them to focus on maintaining the garrison at St. Augustine, and encourage the building of several small forts outside of the city walls to protect their flanks (Halbirt 2002:7).
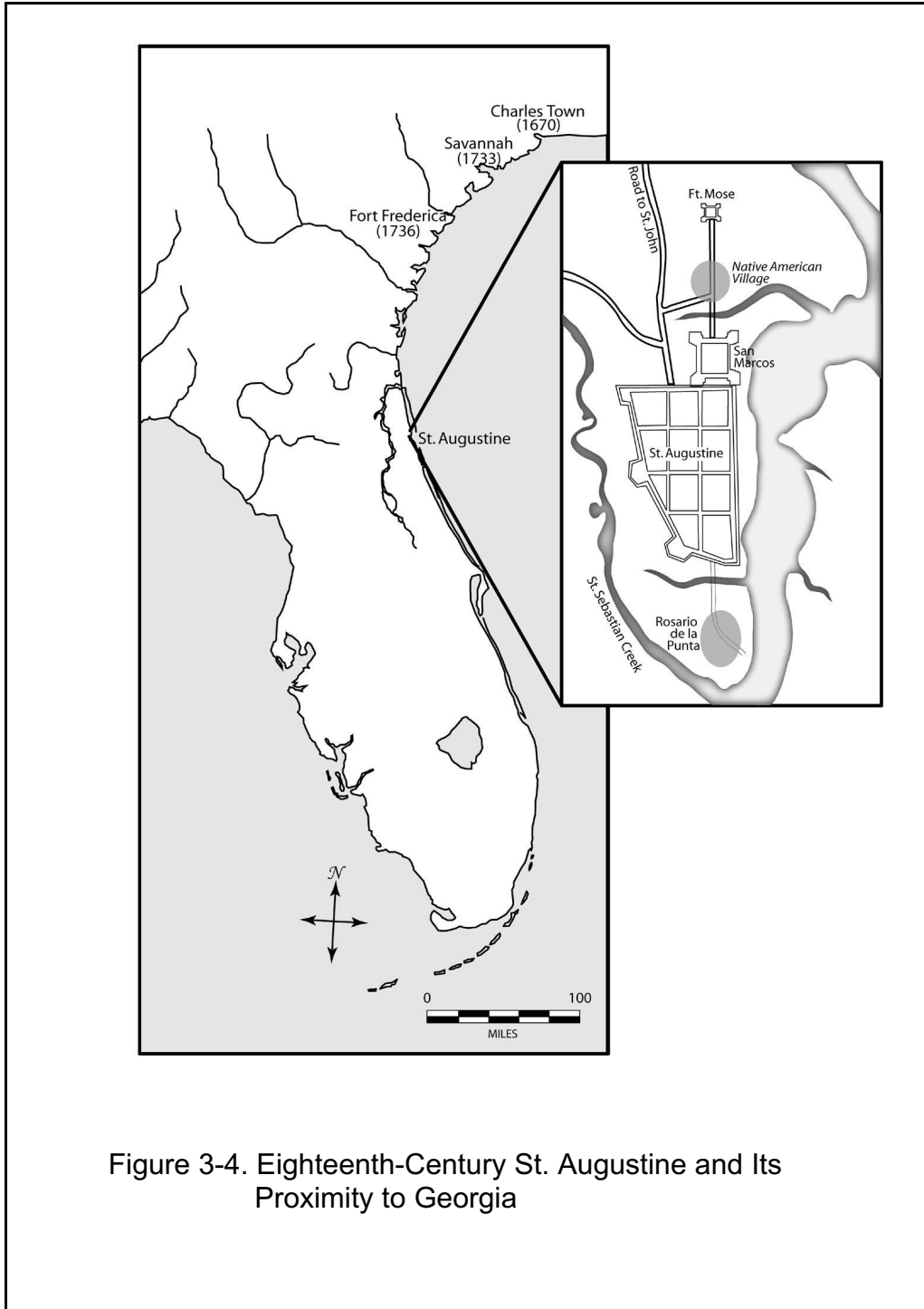
Figure 3-4. Eighteenth-Century St. Augustine and Its
Proximity to Georgia

Rosario de la Punta, a town of twenty farmsteads settled by relocated Yamassee Indians was built to the south of the city, and by 1736 protected the periphery outside the southern city wall (Halbirt 2002:7; White 2002:36-40). In 1738 the town of *Gracia Real de Santa Teresa de Mosé* was established to house over 100 free African Americans who lived in St. Augustine. The settlement was located two miles to the north of the *Castillo*. What became Fort Mosé was "strategically located to block land and water access" to St. Augustine, and "served as an outpost against anticipated British attacks" (Deagan and Landers 1999:267).

THE WAR OF JENKINS' EAR

The Treaty of Utrecht that ended Queen Anne's War between England and Spain in 1713 created the *Asiento*.   This contract established the South Sea Company which permitted English slavers to trade in Spanish American colonies (Lawson 1958:33). This was the first opportunity for legitimate English trade with the Spanish in the New World. Under the South Sea Company's contract terms one English ship of 500 tons burden, with two tenders, was permitted to visit Spain's New World trade fair at Portobello (in present-day Panama) for the purpose of selling goods to the Spanish (Lanning 1936:129; Pares 1963:11). The *Asiento* also confirmed a decree that allowed English ships into Spanish ports when they were in distress or dire need of supplies. This fostered an environment where illegal trade could flourish (Pares 1963:11). English merchants began to trade freely in Spanish waters. When caught, they simply claimed the need of assistance that was legally permitted.

Spain soon tired of English smugglers abusing these privileges and engaging in trade that was technically forbidden. The Spanish increased privateer or coastal guard patrols in Caribbean and North American waters. After 1721 and throughout the 1730s it became increasingly common for the *guardacostas* to stop, board and search English vessels suspected to be in violation of the trade laws (Lanning 1936:130-131). If the vessel or the cargo was deemed suspect, the *guardacosta* would often confiscate or destroy one or both. Spanish ships were accused of acting as pirates, unable to discriminate between vessels carrying illicit trade goods and those on legitimate trade routes between British ports in the Caribbean and North America (Lanning 1936:131). Jamaica, an English possession since 1655, was the destination or port of embarkation most vessels carrying English goods claimed.

One English captain, Robert Jenkins, was boarded by the Spanish Coast Guard near Havana on April 9, 1731. Though no contraband was discovered, Spanish gold and an abundance of fresh provisions were aboard (Lawson 1958:33-34). The captain of the Coast Guard vessel accused Jenkins of illicit trade, the dispute escalated, and eventually resulted in Jenkins having his ear cut off. Reportedly, the Spanish captain handed Jenkins his severed ear with instructions to "take this to your king and tell him if he were here I would do the same to him" (Sir William Clowes *The Royal Navy,* 1898 in TePaske 1958:34).

Jenkins returned to England and duly reported his attack to the authorities. Despite public furor, British Prime Minister Walpole went to great lengths to avoid another war with Spain. For several more years the English continued to trade in waters the Spanish considered their own. The Spanish continued to board, harass and confiscate English ships and shipping. London merchants who were losing valuable cargo to the Spanish continued to protest and call upon their government for assistance (TePaske 1958:35). Responding to the pressure of the merchants, The War of Jenkins' Ear, so-called because Jenkins' testimony was reintroduced in Parliament to help sway the debate over declaring war, began in 1739. European tension, building over control of the

boundaries in North American territory, escalated as the British moved ever closer to St. Augustine (Lanning 1936:135-153). Conflict between the English from Georgia and the Spanish in Florida began almost immediately.

Oglethorpe's Raids on Florida

In 1740 James Oglethorpe, governor of the British colony at Georgia conducted two raids to the south. On the second raid on Spanish Florida Oglethorpe's forces consisted of 1600 men, both soldiers and Native Americans (Tebeau 1987:68). Spanish governor Manuel de Montiano received advanced intelligence and called for all Florida residents to repair to the *Castillo de San Marcos* for protection. The strong stone fortress again provided adequate protection against a five-week British siege. Oglethorpe failed to penetrate the castle walls and retreated when a British blockade failed and Spanish warships arrived as reinforcement (Tebeau 1987:68-70). Figure 3-5 shows an engraving of "St. Augustine and the English Camp" made by Thomas Silver on 20 June, 1740 (Tebeau 1987:69).

The Spanish mounted an offensive battle. Privateers captured thirty English vessels and brought their prizes into St. Augustine in 1741 (Waterbury 1983: 80). Spanish land forces pillaged plantations along the Georgia and Carolina coast. Montiano led a fleet of 50 vessels, 1800 soldiers and 1000 sailors on an attack into Georgia. Trapped in the mire of coastal swampland off St. Simons Island, Montiano eventually retreated to St. Augustine after losing the Battle of Bloody Marsh (Tebeau 1987:70)
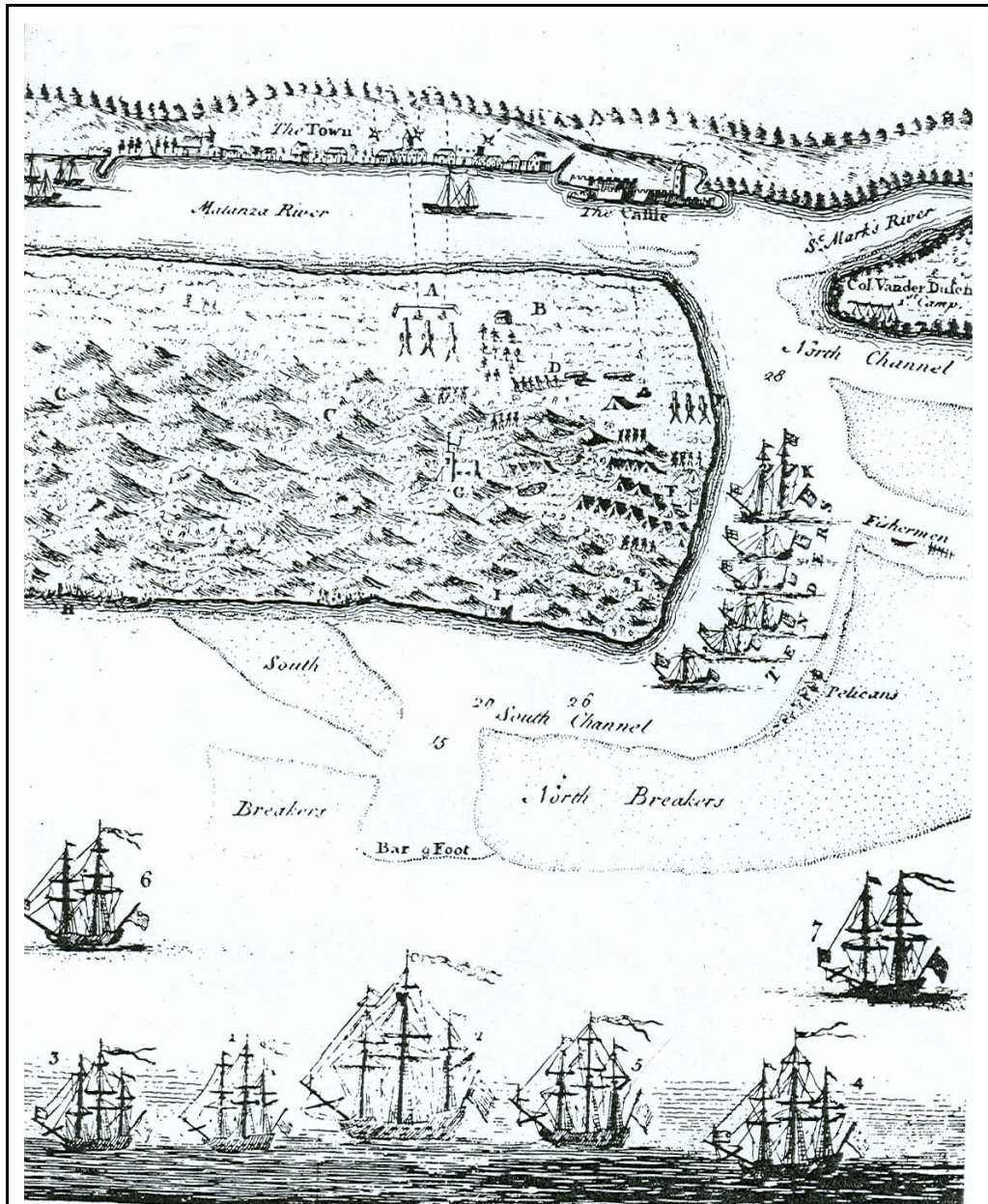
Figure 3-5. Engraved View of St. Augustine by Thomas Silver, 1740
(Tebeau 1971:69)

Oglethorpe returned to attack St. Augustine with twelve warships in 1742. He failed to gain entrance at the main inlet, and again south at Matanzas. By 1741, a prudent Montiano had encouraged Spanish construction of a fort to protect St. Augustine's southern flank by guarding the entrance to Matanzas Inlet. Oglethorpe's second expedition, as well as three subsequent British attacks, were failures (Arana 1978:27-28) Oglethorpe returned to Georgia and gave up his efforts to take Florida for the English (Gold 1969:11). Spain would stubbornly continue to retain its small foothold in North America for another twenty-one years.

THE SEVEN YEARS' WAR

Between the 1740s and 1760s St. Augustine retained its primary identity as a military garrison, supplied, poorly, by sea alone. The garrison was often locally understaffed, and Mexican and black and supplementary forces were brought in respectively from Vera Cruz in 1741 and Havana in 1742. A company of troops from Catalan was shipped to St. Augustine to man the garrison in 1761 (Deagan 1983:41). After 1743, there were no direct attacks by the British against St. Augustine (Arana 1978:36). St. Augustine strengthened its defenses and remained relatively undisturbed except for the occasional Native American raid. French Gulf Coast traders gained the alliance of Creek Indians, and the colonies of France were soon considered a greater threat to English hegemony in the southeast than the Spanish (TePaske 1964: 155). The Spanish Church reported a population of 1509 inhabitants of St. Augustine in 1746. Of these, 630 were of Spanish descent, the rest slaves and free black Africans (Dunkle 1958:7).

The War of Austrian Succession ended in 1748 with the peace treaty drafted at Aix-la-Chapelle. The *Asiento* contract, which gave the British the legal right to trade in the Spanish colonies, was renewed despite Spanish protests (Pares 1963:517-532). The duration of the remainder of the contract was greatly

debated, and eventually in 1750 the South Sea Company sold its rights to an Annual Ship for 100,000 pounds (Pares 1963:532).

Dispute over control of territories in North America remained unsettled and would again result in open warfare in 1755 (Gold 1969:11). The English and the French fought for control in northern North America, during what would be called the last of the French and Indian Wars. The tensions between England and France were heightened in Europe when England allied with Prussia , and France allied with Austria, Russia and Sweden, in a struggle for control of central Europe. The ongoing quarrels between the English and Spanish over control of territory in southeast North America, trade restrictions, and privateers of both nations boarding and confiscating vessels and cargoes, would continue to escalate. Spain would not, however, officially declare war on England until early in 1762.

Except for a few isolated attacks on the outskirts of Florida by Native Americans encouraged by their alliance with the English (TePaske 1964:154), the residents of St. Augustine and Spanish Florida did not enter into direct conflict with colonials from the warring nations. Deagan reports that by 1760 the only two remaining Native American villages in Spanish Florida were relocated to within "a gunshot of the fort" to seek protection from Creek Indians allied with the British (1983:32).

The greatest impact of the Seven Years' War in St. Augustine was felt through the lack of supplies. Vessels acting as privateers navigating off southeastern North America and in Caribbean waters again increased their numbers during the Seven Years War (Harman 1969:63). Though officially trade was allowed to continue with the English contracted for supply during the early part of the conflict (until war was declared in January of 1762), the amounts of goods supplied were restricted due to fears that the French would ultimately benefit from any surplus of goods delivered to the Spanish colony (Walton Memorial, 1757). British trade and supply to Spanish Florida will be discussed in greater detail in Chapter VIII.

Illicit trade between the English, French, and Spanish flourished in the Caribbean. Vessels flying neutral flags visited the ports of Monte Christi (established on Hispaniola's coast in 1755), and St. Domingue, to exchange goods (SCG 23 June 1759: Pares 1963:385-389). Harman reports that the Spanish or "vessels flying Spanish colors" also supplied the French in Canada: (SCG September and October 1758; Harman 1969:63). After 1762, the numbers of English, French and Spanish privateers increased in the waters off of Carolina, Georgia and Florida (Harman 1969:68). When war between the English and Spanish became official, Charles III and George III each immediately prohibited trade and began granting letters of marque and issuing rewards to encourage privateers to begin to prey on the other's shipping (Harman 1969:67-68). The English began to blockade supplies into Spanish Florida, and by July of 1762 it was reported that St. Augustine "had not received any supplies" (SCG July 10-17, 1762 in Harman 1969:69). The British captured Havana by mid-August of 1762. Provisions for the Spanish in Florida became scarce. St. Augustine outfitted several small vessels, most between five and eight guns, and sent them out in search of cargoes to capture to obtain supply (SCG 1762; Harman 1969:70-72). Several of the Spanish privateers were very successful in spite of a fleet of four British warships stationed off Carolina and detailed to protect shipping (SCG September 1762-January 1763 in Harman 1969:71). Still, the garrison at St. Augustine was reported to be "starving" and in "great distress" through early 1763 (SCG January 29-February 5, 1763 in Harman 1969:74). France and Spain began preliminary peace negotiations with England by November of 1762. Ratification of the peace articles ending the Seven Years' War were concluded by all three countries in December, 1762 (Gold 1969:17-18). Peace was declared in Charles Town, and St. Augustine was officially notified on March 5, 1763 (SCG No. 1495:March 9 and 10, 1763). Notations in the Carolina newspapers indicate navigation and trade with St. Augustine immediately resumed (SCG No.1495 and No.1498:March 26-April 12,

1763). Control of Spanish Florida would again ultimately be decided during peace negotiations in Europe.

Spanish Evacuation and British Possession of Florida

The 1763 Treaty of Paris awarded Florida to England in return for recently captured Havana, Cuba and the Philippines (Deagan 1983:42). Spain had already ceded to the English control of eastern North America above the 31st laitude, and received French Louisiana, west of the Mississippi, from England (Tebeau 1987:72). Figure 3-6 shows the extent of Florida in 1765 after the British takeover (Gold 1969:21). The northern border of Florida was initially set at the 31st parallel of latitude, then raised another 100 miles (160km) further north. The British divided Florida into two regions, East and West Florida (Tebeau 1987:75). West Florida began on the eastern bank of the Mississippi River at New Orleans, and continued along the gulf coast through present day Mississippi and Alabama, to St. Marks, near Tallahassee in Florida. East Florida ran from St. Marks to St. Augustine, and included all of south Florida (Gold 1969:12). The French lost all claim to territories in Canada and North America east of the Mississippi River (Gold 1969:12).
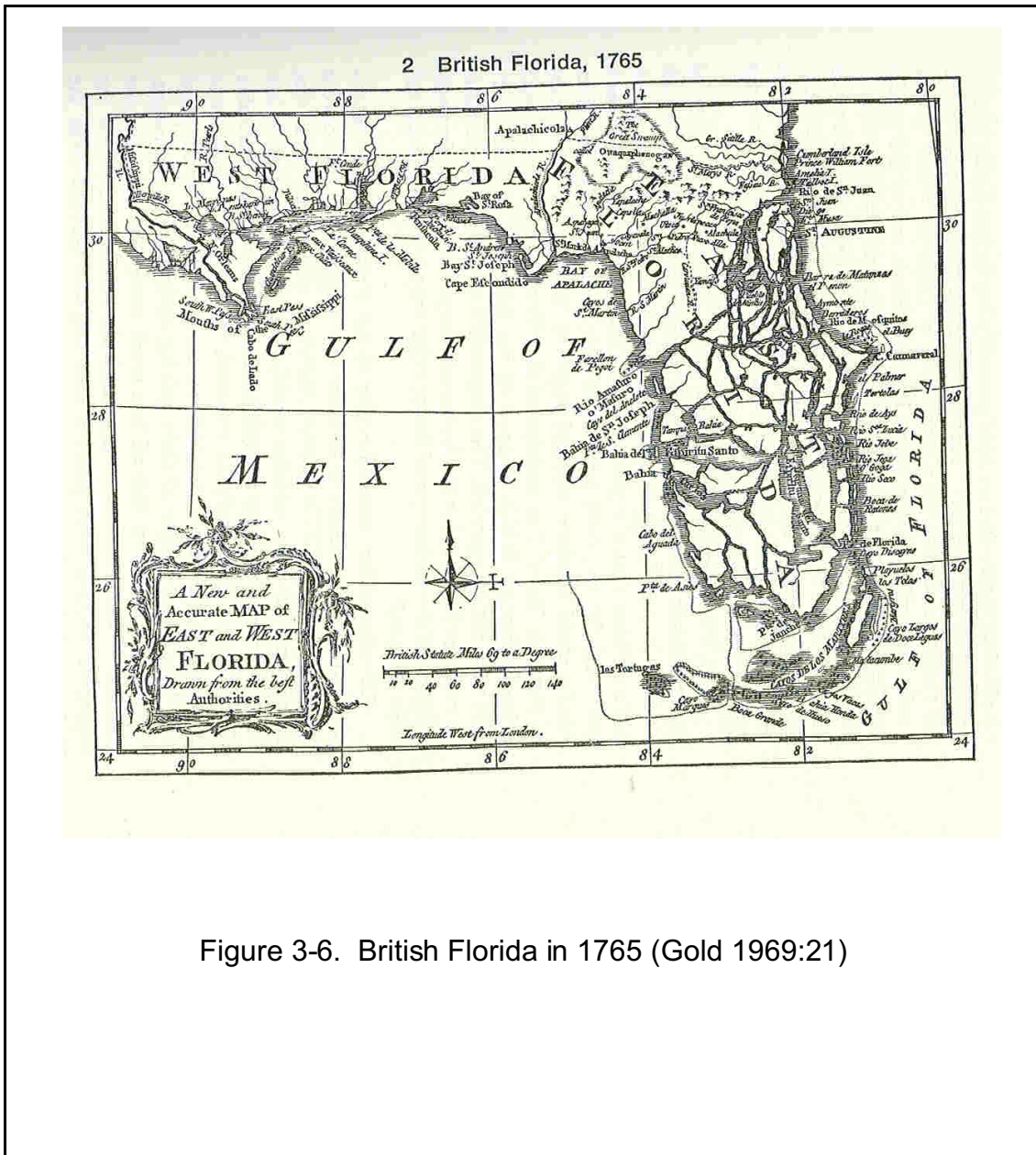
Figure 3-6. British Florida in 1765 (Gold 1969:21)

Almost complete Spanish evacuation from Florida began in April of 1763 and lasted for over nine months until January of 1764 (Tebeau 1987:74; Gold 1969:66). The primary destination for relocation was Havana, although a few residents chose to re-settle in New Spain. The population of St. Augustine residents who relocated is estimated at close to 3000 (Dunkle 1958:7; Corbett 1976:268). To place the town's size contextually in scale, this would make St. Augustine at the end of the first Spanish period the second largest European settlement in the North American south, after Charles Town. At this time, New York and Philadelphia each had populations between 20,000 and 30,000 residents (Corbett 1976:268). The 1763 Spanish records indicate that of the 3,063 evacuees who departed St. Augustine for Havana, 1916 were military and civilian personnel, 161 were Fusileers from Catalan, 425 were Canary Islanders and 26 were German (Gold 1969:67). Residents of the Canary Islands had settled in Florida between 1756 and 1761 under the sponsorship of the Spanish Crown, which had hoped to increase local agricultural production. German Catholics from the English colonies had settled in St. Augustine in 1756(Deagan 1983:31). Included also in the evacuation to Havana were 89 Christian Native Americans from nineteen families, 99 free black Africans, and 300 African slaves (Gold 1969:67;Tebeau 1987:74).

The Spaniards leaving Florida were also ordered by the crown to evacuate whatever possessions, including arms and ammunition, they could remove (Gold 1969:86-86). An excerpt from a letter written by one of St. Augustine's first English arrivals described the condition of the town and the Spanish resident's departure. "They were much disgusted at being forced to give up the place, and if it had not been for Major Ogilvie, the commanding officer here, they would have destroyed every house and every tree they could not then dispose of at their departure; even the Governor, before he left his house, destroyed his garden, which was the only good one in town" (*London Chronicle*, May 3-5, 1764).

The first English troops entered St. Augustine in July of 1763. Major Francis Ogilvie, leading the British Army's Ninth Regiment, was ordered to command Florida and occupy St. Augustine (Gold 1969:87-88). Figure 3G shows the town, harbour, and approaches at the time of transfer (Gold 1969:89). British and Spanish forces co-operated to make the transition smooth. Several English vessels were even used for the evacuation of Spanish citizens from Florida (Gold 1969:91-93). Spanish and loyal native residents of West Florida were evacuated in 1763 to Vera Cruz in New Spain (Gold 1969:101). After stubbornly maintaining a small foothold in North America for close to two hundred years, the Spaniards quickly and rather quietly abandoned Florida. In order for the English to inhabit, supply, and protect their newest possession, British troops, arms, and ammunition were immediately assembled and shipped from New York to Florida to occupy the empty Spanish forts (Gage Papers 1763-1765).

CHAPTER IV

ARCHAEOLOGICAL CONTEXT FOR ST. AUGUSTINE

<u>TERRESTRIAL ARCHAEOLOGY OVERVIEW</u>

Native American populations, settlement forts, and colonial inhabitants of the city of St. Augustine have been the focus of a tremendous amount of terrestrial archaeological research since the 1930s (Manucy 1939,1940 and 1960; Deagan 1976,1981a,1981b,1983,1987; Fairbanks 1981; Halbirt 1993a, 1993b, 1993c, 1997, 2003). A community rich in history and committed to preservation, St. Augustine has seen the focus of terrestrial archaeology span from early 16th-century burials and mission complexes (Merritt 1977; Seaberg 1951), early defense works, redoubts and forts (Chatelain 1941; Halbirt 1993b and 1993c), through private businesses and domestic residences constructed and occupied during the 17th, 18th,19th and 20th centuries (Manucy 1962; Halbirt 1993a,1997, 2003). Since the 1940s, archaeology in St. Augustine has focused on historic sites and monuments such as the *Castillo de San Marcos (*later called Fort Marion) and Fort Matanzas (Manucy 1939,1940 and 1960; Chatelain 1941; Arana *et al* 1967; Arana 1978; Deagan 1983:48).

In the 1970s, archaeologists from the University of Florida began conducting a series of historical archaeological research or "backyard archaeology" excavations (Fairbanks 1975). Their work spanned the first Spanish, British, and second Spanish occupation periods: 1565-1821 (Deagan 1976,1981a,1981b,1983,1987; Deagan and Landers 1999).

The Historic St. Augustine Historic Preservation Board (HSAPB) was created in 1966 and operated by the State of Florida until reorganization in the 1990s. The HSAPB maintained a program of investigative research using its own archaeologists (Bostwick and Wise 1978; Herron 1980; Smith and Bond 1981), as well as supporting the work conducted by Kathleen Deagan and the University of Florida (Deagan and Bostwick 1975; Deagan 1981a, 1981b; Deagan *et al* 1976 in Deagan 1983:50).

In 1990, a city wide archaeology program was officially established in St. Augustine.   A full-time archaeologist was hired to mitigate disturbances caused by construction and development in this historically significant area (Halbirt 1993a,1993b,1993c,1997,2002,2003).   The colonial portion of St. Augustine that lies inside the original city walls is included on the National Register of Historic Places and was designated a National Historic Landmark District in 1971. National Historic Landmarks are recognized for their significance to the nation as a whole.

 All of this research has created a steadily increasing body of knowledge regarding the settlement of St. Augustine and the subsequent five centuries of European, Native American, and African habitation. In spite of the recognition that St. Augustine was originally founded and settled based on its proximity to important routes for ocean travel, and routinely supplied by sea, prior to SOAR's 1995 survey, little work had been done in the waters surrounding the area.

MARITIME ARCHAEOLOGY

The waters offshore from St. Augustine were designated as one of four marine reserves in Florida created to protect submerged cultural resources by a special resolution passed by the Governor and Cabinet in 1968 (Florida Bureau of Archaeological Research, October 1994). This sanctuary included the waters offshore between the St. Augustine Inlet and the Matanzas Inlet, 14 miles (22.5km) to the south. While no active research was undertaken, the creation of this preserve did empower the Division of Historic Resources to refuse permission to treasure salvors seeking to work in the area, protecting potentially significant resources located in the waters off of St. Augustine (Franklin and Morris, May 1996:1).

Previous Maritime Work 1997-2000

The waters adjacent to two of St. Augustine's early forts were surveyed by students from Florida State University in the late 1970s. In 1978, the waters off the *Castillo de San Marcos* were inspected by divers. No dredging was undertaken, only the exposed bottom surface was examined. As expected, debris from all periods of St. Augustine's inhabitation was discovered (George Fischer 1995, personal communication). In 1979, the inshore waters off Fort Matanzas, which protected the Matanzas River just above its inlet, were surface surveyed in a non-disturbance mode. No cultural material of any kind was encountered, and the archaeologists concluded that swift currents had swept the bottom clear of artifacts (Koch 1979; Miska 1979).

OSM Archaeological Consultants conducted a magnetometer survey of two potential borrow areas to be used in conjunction with a dredging project for the Jacksonville District U.S. Army Corps of Engineers in November and December of 1988. Borrow Area A was located in the Atlantic Ocean to the north of the current St. Augustine Inlet. Borrow Area B was located to the south of the channel, off Anastasia Island (Mistovich 1989). Though a number of magnetic anomalies were recorded, none were investigated by divers. These borrow areas were originally excluded from the SOAR 1995 remote sensing survey since they had been previously searched (Franklin and Morris, May 1996:12). Since subsequent attempts to duplicate or relocate targets identified by OSM proved fruitless, sections of northern Borrow Area A were re-surveyed with a magnetometer in 1999 (Franklin *et al*, May 1999:Appendix C).

Additional maritime survey work was undertaken in specific locations near St. Augustine to assess potential impact on historic resources and satisfy contract requirements for the U.S. Army Corps of Engineers, Jacksonville District in 1995, 1997 and 1998. Tidewater Atlantic Research (TAR) of Washington, North Carolina (Watts 1996,1996b) and Mid-Atlantic Research of Wilmington, North Carolina (Hall 1997,1998a,1998b) utilized both magnetometers and side-scan sonar units for remote sensing survey of the

waters adjacent to the St. Augustine Inlet for the U.S. Army Corps of Engineers prior to channel dredging. Subsequent diver investigation of potential targets suggested that all anomalies located were either modern debris or relatively modern shipwrecks (Watts 1996a,1996b; Hall 1998b; Morris *et al,* February 1998:2; Franklin *et al,* May 1999:Appendix C).

British Ballast Pile Site BOL-03

A remote sensing survey beneath the waters of the Matanzas River on either side of the Bridge of Lions in downtown St. Augustine was undertaken in April of 1996 for the Florida Department of Transportation. The survey was conducted by TAR for Southeastern Archaeological Research (SEARCH) of Gainesville, Florida. A number of targets were located and investigated by divers. One target designated Bridge of Lions (BOL)-03 was located just offshore from the central plaza in St. Augustine's historic district. Site BOL-03 contained a pile of ballast rocks and eighteenth-century British ceramic and glass debris (Southeastern Archaeological Research 1996). The site was further examined in 1999. The ballast was scattered over a concentrated area that measured 78 by 43 feet (23.8m by 13.1m), and rose close to 20 inches (.50m) above the river bottom. The ballast stones were identified as limestone, granite, ryolite and chert. Saltwater coral debris also was observed on the site (Watts 2000).

Partial excavation uncovered no vessel hull or pier structure, and a mixture of historic and modern debris. It was concluded by the type and deposition of cultural material that site BOL-03 was a ballast pile scatter, probably dropped overboard by a vessel rearranging hull contents in preparation for cargo loading or unloading. The associated British period artifacts suggest that the ballast probably originated from a vessel laden in a British colony. Diagnostic artifacts recovered included ceramic sherds of Chinese porcelain, polychrome pearlware and stoneware, as well as the remains of glass wine bottles and a kaolin pipestem fragment. Two fragments of one pottery sherd

recovered were identified as San Marcos stamped ware (Watts 2000). San Marcos was a local pottery produced by the Guale Indians, who were associated with Spanish Missions that surrounded St. Augustine into the early eighteenth century (Saunders 2000). Deagan identifies San Marcos as the predominant utilitarian ware in all St. Augustine households at that time (Deagan 1983:117). Due to the pattern of distribution of the artifact scatter amidst the ballast stones and the lack of any articulated structure amid the debris, no further work was recommended on the Bridge of Lions site (Watts 2000).

Lighthouse Archaeological Maritime Program Work on Site 8SJ3478

Southern Oceans Archaeological Research completed their permit term of research in St. Augustine in September of 1999. In 2000, the Florida Bureau of Archaeological Research granted a permit for work on the *Industry* site (8SJ3478) to the Lighthouse Archaeological Maritime Program (LAMP), newly created by the St. Augustine Lighthouse and Museum. LAMP staff archaeologists worked on site 8SJ3478 between July and October of 2000. When weather and conditions permitted, some twenty-four days of diving took place on the *Industry* site (Morris and Burns 2001:Appendix:A). No articulated hull structure was discovered, and only diagnostic artifacts were recovered during the excavation of two test trenches (Morris and Burns 2001:8-11). Several artifacts were exposed during 1999's northeastern storm scours of the site. These items were mapped and then recovered for conservation and analysis at the lighthouse museum facility. Recovered artifacts included swivel gun ammunition, a third portion of a teapot previously recovered by SOAR, and a set of handsaws. Analyses of these objects, as well as the drawings of three millstones that were recorded during the 2000 field season (Morris and Burns 2001:10), are included in the artifacts chapter (VII) of this report. This will help to broaden the interpretation of the site as a whole.

Slowly but surely, maritime archaeological work has begun to add to the

vivid picture of life in colonial St. Augustine already portrayed through historical documents and terrestrial archaeology. The understanding of daily life in a significant colonial outpost in North America, inhabited for close to 500 years, fought for and won by the governments of three different nations, is continually being broadened. SOAR and LAMP archaeologists also have located and mapped shipwrecks and submerged cultural sites in the waters near St. Augustine from periods ranging between the 18th and the 20th century (Franklin and Morris, May 1996; Morris *et al February 1998*, Morris and Burns 2001) and knowledge of the small garrison's development in relation to its maritime routes continues to expand.

CHAPTER V

DESCRIPTION OF SOUTHERN OCEANS ARCHAEOLOGICAL

RESEARCH'S WORK IN ST. AUGUSTINE (1995-2003)

Recognizing the importance of the sea to the location, settlement, and occupation of St. Augustine, Southern Oceans Archaeological Research, Inc. (SOAR) applied for and received grant funding provided by the National Park Service, U.S. Department of the Interior, administered through the Florida Bureau of Historic Preservation, Division of Historical Resources to begin a project originally termed "The St. Augustine Shipwreck Survey" in 1995. The research design for the project combined an examination of historical maps and documents with an assessment of both historic and contemporary changes to the natural environment in order to select areas for remote sensing survey to locate potentially significant shipwrecks from all periods of St. Augustine's occupation (Franklin and Morris, May 1996).

Cartographic research began in May of 1995. Fieldwork began in November of 1995 and was completed by October of 1999. As remote sensing equipment located magnetic anomalies, divers investigated or "ground-truth" tested the targets for identification. Remote sensing survey, ground-truth diving, and site-specific excavations continued during 1997, 1998 and 1999 field seasons. Site 8SJ3478 was located at the end of the1997 season, and became the major focus of investigation through two additional summers of excavation in 1998 and 1999 (Morris *et al*, February 1998, Franklin *et al*, May 1999). The site's shallow water deposition created a challenging environment for diving. When work was not possible at site 8SJ3478 due to weather and sea conditions (or equipment malfunction), work on additional survey objectives was undertaken at other inshore and offshore locations.

By 1998, as the scope of work broadened to include historic research into several aspects of St. Augustine's development based on its maritime roots the project was renamed "The St. Augustine Maritime Survey." SOAR's founding

members, Marianne Franklin and John W. Morris III, shared principal investigation of work in St. Augustine through the fall of 1999. A copy of the original permit issued for work in St. Augustine by the Florida Bureau of Archaeological Research appears in Appendix A. Research associate archaeologist Norine Carroll and then-graduate students Andrea P. White and R. Kelly Bumpass supplemented SOAR's core staff during summer field seasons in 1997, 1998 and 1999.   Numerous volunteers and visiting scholars also assisted with the work. The original remote sensing survey, and several supplemental surveys were undertaken with the assistance of Dr. Gordon P. Watts Jr., director of the Institute for International Maritime Research in Washington, North Carolina.

SOAR Principal Investigator Marianne Franklin carried out conservation of artifacts, additional archival research, and site analysis in College Station, Texas and Pensacola, Florida through 2003. This dissertation will serve as a final site summary by Southern Oceans Archaeological Research, and reports additional research on artifacts and trade and navigation to St. Augustine that has not been published elsewhere.

Dr. D.L. Hamilton, supervisor Dr. Helen DeWolf, and the core staff of the Conservation Research Laboratory, at Texas A&M University (particularly John Hamilton) provided a tremendous amount of assistance and advice during every phase of conservation of the artifacts.   SOAR research associates Norine Carroll and Dr. Betsy Carlson assisted with the conservation of artifacts in Florida and Texas.   The Florida Division of Historical Resources provided partial funding for work through historic preservation grant assistance in 1997 and 1998. The St. Augustine Lighthouse & Museum partially funded fieldwork, research and conservation of artifacts in 1998, 1999 and 2000. Numerous individuals, organizations and corporations contributed financially and volunteered labor and equipment towards the completion of this project. The final three years of this project were completely funded by the Boston based Richard and Cordelia Everett Charitable Trust.

CARTOGRAPHIC RESEARCH

The principal goal for the first phase of shipwreck survey research for St. Augustine was to collect historic and modern charts that showed the city and its approaches through every phase of occupation since discovery. Primary documents were also collected, copied and archived in order to be incorporated into an overall maritime interpretation of St. Augustine's history. Archives at the University of Florida in Gainesville that were examined include the Cartography Collection, Manuscript Collection, East Florida Papers and the Stetson Collection in the PK Yonge Library, as well as the collections of the Marston Map Library (Franklin and Morris, May 1996:4). Primary and secondary research was undertaken in Florida at St. Augustine's Historical Society Research Library. The Florida Master Site File in Tallahassee was examined for documentation of any nearby sites or reports describing previous work in St. Augustine. Later period charts and photographs were collected from the U.S. Army Corps of Engineers archives in Jacksonville, Florida (Franklin and Morris, May 1996:5).

The earliest chart located was a 1605 pen and ink sketch of the landmass and inlet approaches to St. Augustine harbour and the Matanzas Inlet (Franklin and Morris, May 1996:44). Charts of the inlet drawn in the eighteenth and nineteenth centuries displayed the shifting sandbars that made navigation into the inner harbour a constantly changing and continually difficult challenge for vessels of any size. Aerial photographs of St. Augustine taken in 1942 (Franklin and Morris, May 1996: 67) and 1989 (Franklin and Morris, May 1996: 69) show the dramatic natural and man-made changes that have occurred to the inlet and shoreline in the last century.

Since some previously navigable channels are now beneath breaking waves, or buried beneath newly formed dune and shoreline sediments, these recent changes affected the areas chosen for survey as well as the ability to conduct remote sensing.

ENVIRONMENTAL ASSESSMENT

Analysis of the cartographic research immediately highlighted the major environmental feature that would most significantly affect the initial research design for work in St. Augustine as well as later efforts at excavation on Site 8SJ3478: the swift shallow-water sand deposition affected by strong currents close to the shoreline.   Anastasia Island today completely covers what once was a small barrier island and the offshore sand banks that originally surrounded the southern approach to the channel entrance in the eighteenth century. In an effort to combat a constantly shoaling channel approach, the U.S. Engineers completed a new channel cut into St. Augustine in 1940 (Franklin and Morris, May 1996:5,67). Figure 5-1 shows a 1942 aerial photograph detailing the changes to the coastline. A state park and beaches now completely encompass what were originally a coastal barrier island, the original natural channel entrance, and Crazy Bank. Figure 5-2 shows the modern configuration of the coast and inland waters.
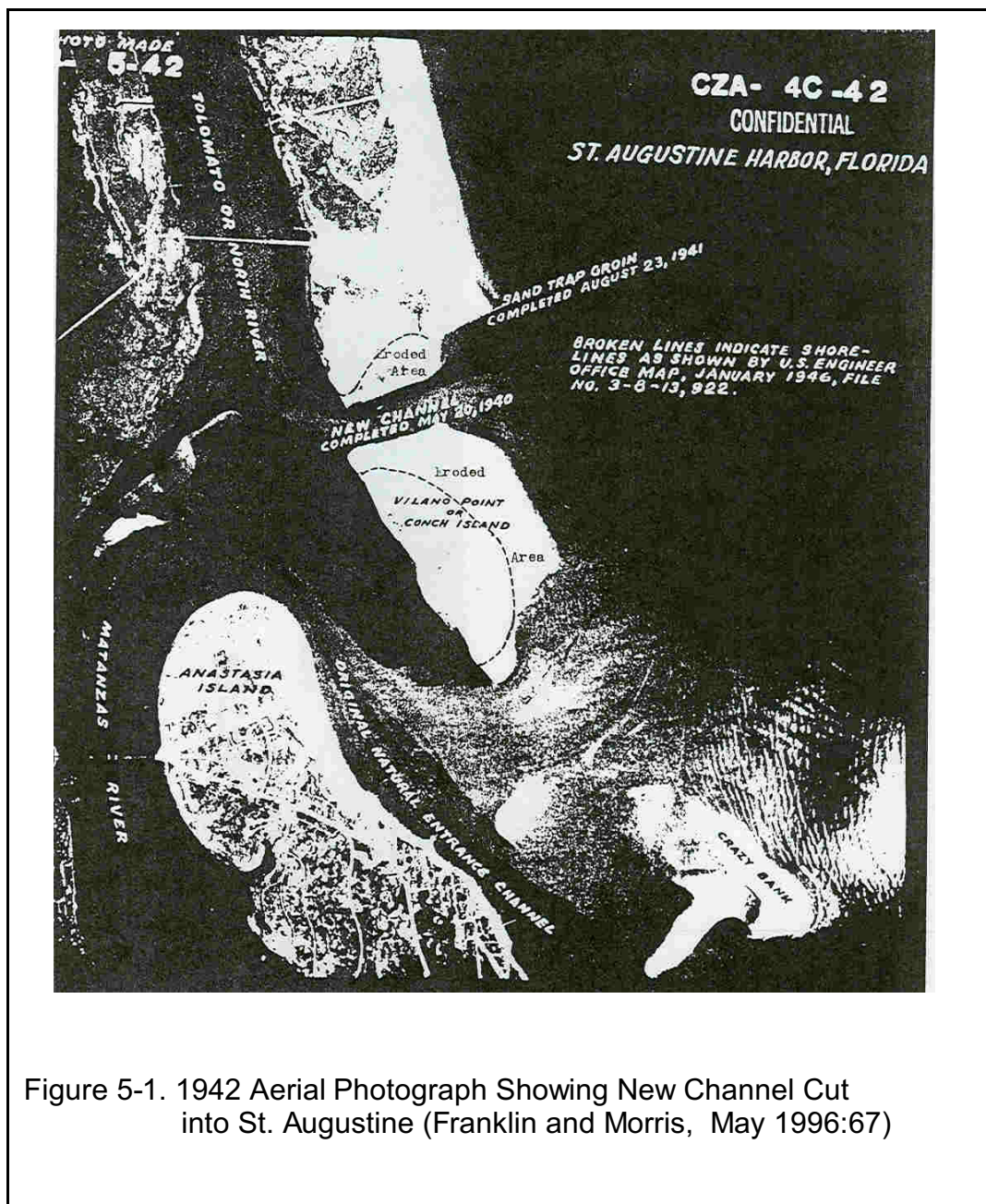
Figure 5-1. 1942 Aerial Photograph Showing New Channel Cut
into St. Augustine (Franklin and Morris, May 1996:67)
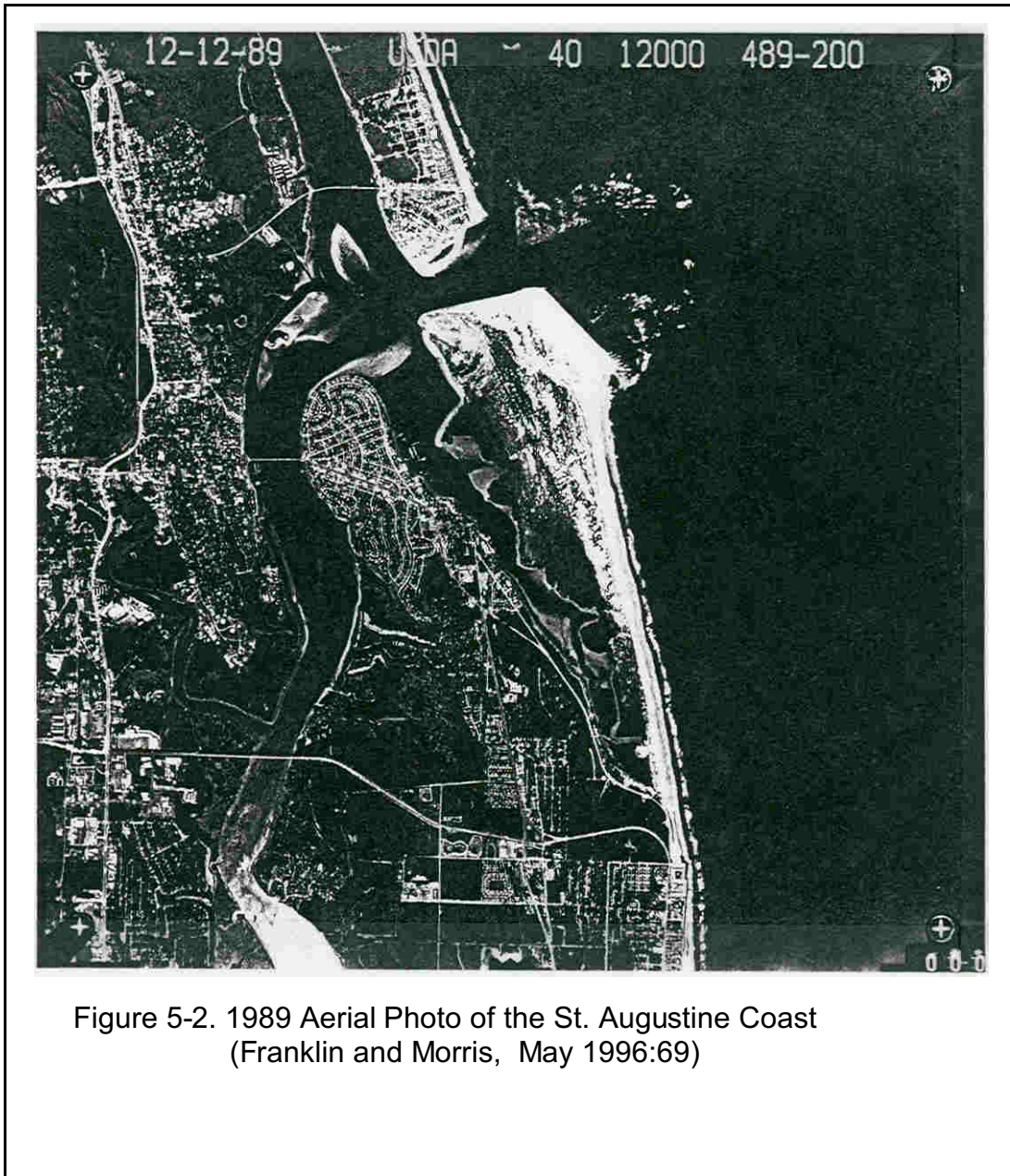
Figure 5-2. 1989 Aerial Photo of the St. Augustine Coast
(Franklin and Morris, May 1996:69)

In order to further delineate the area under study to search for vessels lost in the past centuries, it was determined that more research needed to be undertaken to understand the coastal processes that so greatly affected early navigation, as well as later archaeological work, in and around St. Augustine. These environmental influences (shown in Figure 5-3) were summarized by John W. Morris III in a 1998 SOAR report:

> St. Augustine is located in an estuarine environment on the east coast of northern Florida. Two rivers, the Tolomato and the Matanzas, have access to sea through two inlets: St. Augustine Inlet to the north and Matanzas Inlet, [14 miles (22.5km)] to the south. Although the present day configuration of St. Augustine Inlet has changed radically since 1565, the dredged, extant inlet is in approximately the same location as the inlet the Spanish utilized during the initial colonization and development of St. Augustine. As with most east coast inlets, St. Augustine Inlet has a southern migratory pattern. Extensive cartographic research and comparative analysis clearly shows this southerly movement (Franklin and Morris, May 1996). The outflow from the southern inlet, Matanzas, produces a northerly counter current that has a unique influence on the formation and configuration of St. Augustine Inlet, which provides direct access to St. Augustine's inside anchorage. Matanzas has never been a viable inlet for navigation, with an exceedingly shallow series of sand bars and shoals prohibiting use of the inlet by anything other than a vessel with extremely shallow draft. St. Augustine inlet has also proven to be very difficult to navigate with a relatively shallow sand bar and a constantly shifting configuration which continually changes the approach. This may be directly attributed to the counter current produced by Matanzas Inlet. The prevailing littoral drift along the east coast is southerly, hence the southerly migration pattern of the actual inlets and barrier islands. The counter, or northerly current, produced by Matanzas Inlet radically affects the sediment deposition in St. Augustine Inlet by shearing the littoral current. Shear causes the base sediment load to drop out prematurely as the outflow of the inlet reaches the sea. By dropping this sediment closer to shore a bar is created and maintained across the inlet. Thus shearing creates the bars and shoals that cause the inherent navigational problems for this inlet (Morris *et al*, February 1998:4).

Figure 5-3. St. Augustine Coastal Current Patterns (Morris *et al* 1998:5)
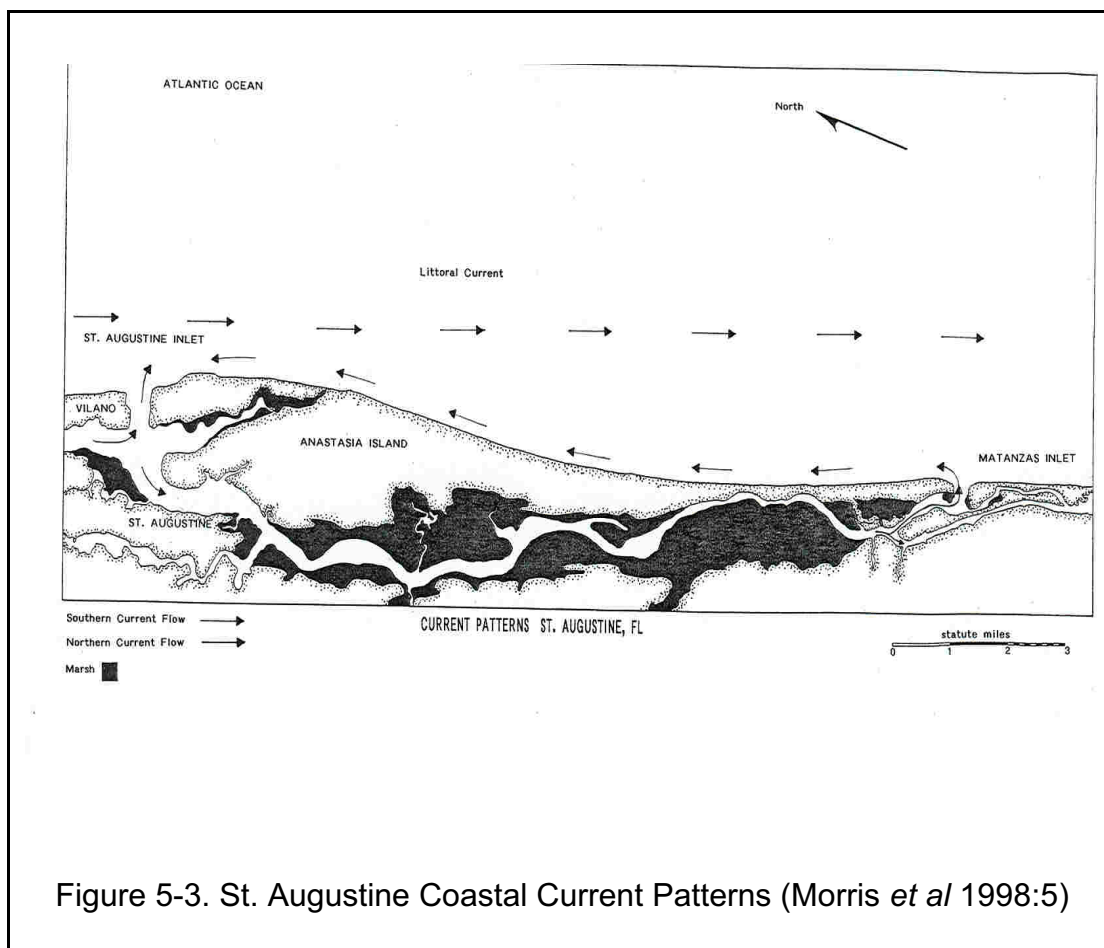
COMPUTER ASSISTED DIGITIZED DRAWINGS

During cartographic research 1:1 photographic copies were made of all charts that showed the inlet, approaches to, or scale drawings of the settlement of St. Augustine. Charts from the eighteenth century onward that were drawn to a known scale were digitized using the *AutoCAD* program. Charts that were digitized were required to show a minimum of two standard reference points that would allow them to be overlaid across temporal boundaries. The original two reference points chosen were the *Castillo de San Marcos* and the seemingly

stable entrance to the Sanchez's Creek just to the south of the town. The lighthouse on Anastasia Island was also used as a reference point when it appeared on charts drawn after it was constructed between 1871 and 1874. Once they were digitized into separate layers, a variety of charts could be created by overlaying different views of the inlet and coastline of St. Augustine from different time periods. A series of charts for each period of occupation was prepared that contrasted the historic coastal configuration with the 1943 geodetic survey map as the standard base. The 1943 chart was chosen as the control since it does <u>not</u> show the new inlet cut. Though dated 1943, the USGS chart was only corrected through 1937 (Morris *et al*, February 1998:3). This pre-cut view of the approach to St. Augustine was chosen as the standard because it presented a clearer contrast when overlain. Figure 5-4 shows the overlay of the coast during the British Period in 1765-66 (Franklin and Morris, May 1996:8). Figure 5-5 displays the tremendous buildup of sand on the spit of "Conch Island" (formerly Crazy Bank) that today forms the beach and shoreline of Anastasia State Park. The chart overlays the 1943 coastline and a modern navigational chart drawn in 1988 (Franklin and Morris, May 1996:11). This view of St. Augustine today best displays the rate of accretion that affected the original survey design as well as the ability to work in the areas adjacent to the historic channel. It also answers the question that perplexes most visitors today to the St. Augustine Lighthouse, namely, *Why does the lighthouse mark where the channel entrance is not*? The original areas surveyed using remote sensing equipment were chosen after charts from all of St. Augustine's historic periods were created and analyzed.
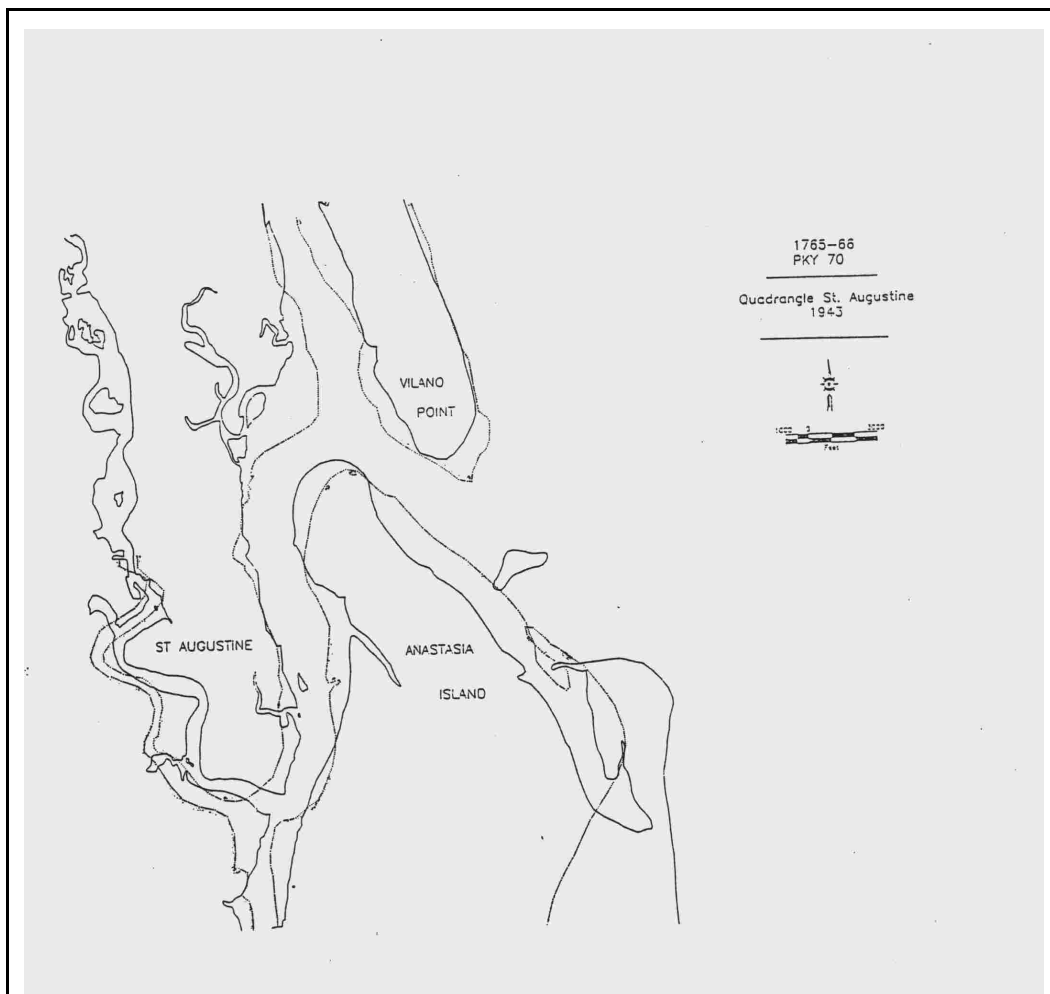
Figure 5-4.   Digitized Overlay Map of the British Period Coastline with the 1943 Coastline in St. Augustine, Florida (Franklin and Morris, 1996:8)

QUADRANGLE 1988

Quadrangle St. Augustine
1943

Location of the
St. Augustine
Lighthouse on
Anastatsia Island
(Built 1871-1874)

VILANO
POINT

CONCH
ISLAND

ST AUGUSTINE

ANASTASIA

ISLAND
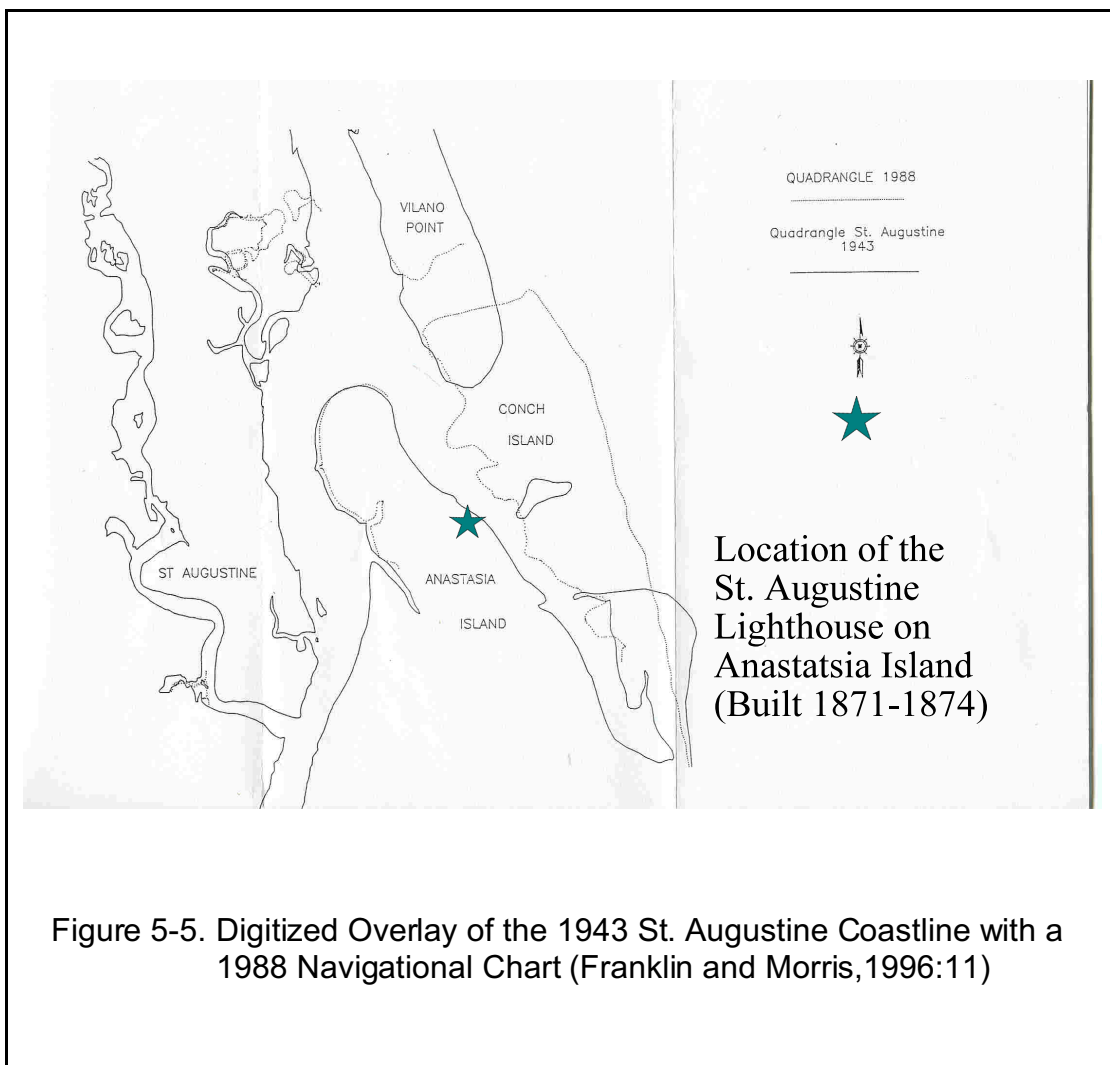
Figure 5-5. Digitized Overlay of the 1943 St. Augustine Coastline with a
1988 Navigational Chart (Franklin and Morris,1996:11)

AREAS SELECTED FOR 1995 REMOTE SENSING SURVEY

Two areas were selected for examination during the 1995 remote sensing survey, one inshore and one offshore. Figure 5-6 shows the location of the 1995 survey areas (Franklin and Morris, May 1996:15). Only the offshore work pertains to the discovery of Site 8SJ3478 and will be discussed here. The offshore survey began just below the current channel entrance and ran south for some two and one-quarter miles (4.5km) past the lighthouse. The northern and southern boundaries were determined by the location of borrow areas that were surveyed by Mistovich in 1989. The near shore edge of the survey was designed to run as close to the beach as the research vessel could safely navigate. The survey area was chosen to cover the 6-foot (1.8m), 12-foot (3.6m), and 18-foot (5.5m) bottom contours on the modern navigation chart, and extended 4500 feet (1.37km) offshore west to east. Cross-hatching has been added in the northwest corner to show the areas of the rectangle that were too shallow (or beneath breaking waves) to allow survey during the initial fieldwork (Franklin and Morris, May 1996:16). Corner co-ordinates are shown in the Florida State Plane system, Mercator projection, using the NAD83 datum.
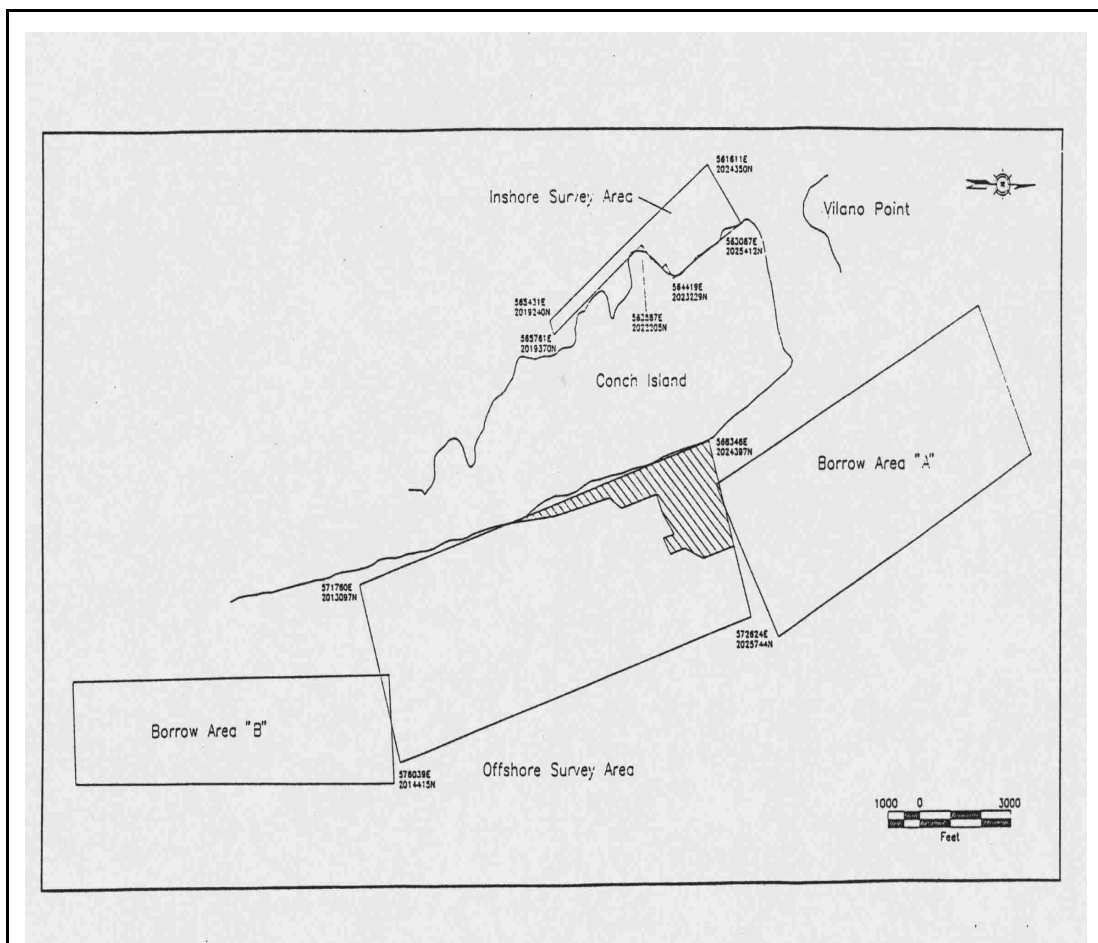
Figure 5-6.   The Location of the 1995 Survey Areas
               (Franklin and Morris, May 1996:15)

METHODS USED FOR REMOTE SENSING SURVEY

The initial survey and all subsequent remote sensing in St. Augustine used essentially the same equipment and procedures. Primary data was collected with an *866 E.G.&G* proton precession magnetometer. A magnetometer locates ferrous material by recording subtle changes in the earth's magnetic field. Lane spacing was a maximum of 75 feet (22.9m), and the sensor was towed behind the survey vessel at a depth of 10 to 12 feet (3-1.6m) above the bottom surface except in very shallow water. Differential geographic positioning was established in 1995 using a *NavStar XR5M* DGPS system which made corrections using a U.S. Army Corps of Engineers survey datum as well as a base station established at the project headquarters on St. Augustine Beach (Franklin and Morris, May 1996:17). After 1995, the U.S. Government removed satellite restrictions and any commercially available Differential Geographic Positioning System (DGPS) could be used for survey target relocation with adequate accuracy. Original positions established during the primary survey were Florida State Plane system northing and easting co-ordinates (NAD83 datum). After 1995 these numbers were converted to regular WGS84 latitude and longitude co-ordinates using the *GeoCon* computer software program.

The *Hypack* navigational system was used to lay out survey lanes and maintain positioning during work in 1995. The magnetometer's analog recorder provided a continuous permanent record of target signatures and the magnetic background, while *Hypack* hydrographic survey software digitally recorded magnetic data for contouring (Tidewater Atlantic Research 1996). Magnetic data analysis was processed as it was generated, then later computer contour plotted to identify and locate targets that represented potentially significant magnetic anomalies. Primary magnetometer survey lanes were run from the northeast to the southwest and *vice versa*. Potentially significant target anomalies were further defined by running additional transverse survey lanes at

different angles. Figure 5-7 shows the original magnetic contour map generated during the 1995 offshore survey.

Magnetic anomaly targets were analyzed for intensity, duration and areal extent. Considered important were signature characteristics that replicated those previously shown to have been a reliable indicator of the presence of submerged historic cultural resources (Franklin and Morris, May 1996:18).   A total of 48 separate targets were identified during the 1995 survey; 20 of the best targets were prioritized and selected for ground-truth testing, or diver investigation (Franklin and Morris, May 1996:18-24).

Throughout 1997 and 1999, additional remote sensing survey was undertaken within the original 1995 offshore survey area, on its northern and southern borders, and inshore (Morris *et al*, February 1998; Franklin *et al*, May 1999). The magnetometer was used to refine and relocate targets marked in 1997. Ground-truth testing began in 1995 and continued throughout 1997, 1998 and 1999 (Franklin and Morris, May 1996; Morris *et al*, February 1998; Franklin *et al*, May 1999).

Figure 5-7. The Magnetic Contour Map of the 1995 Offshore Survey Area, Site 8SJ3478 (Target No. 48 & Target No. 52 are Shaded Gray)
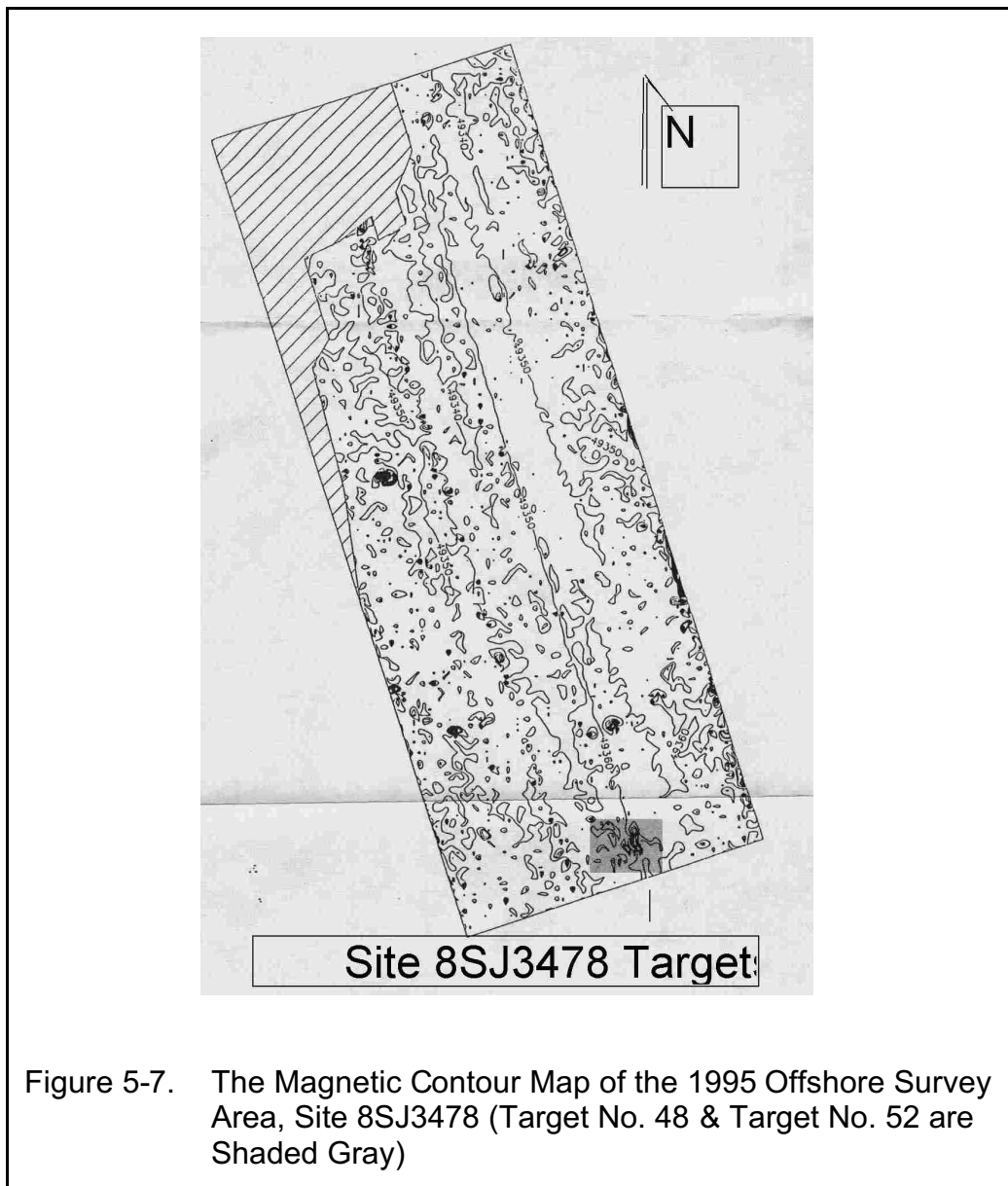
GROUND-TRUTH TESTING

In order to investigate targets located by the magnetometer survey, a standard ground-truth investigation procedure was used by divers throughout the project. The target location co-ordinates were selected to mark where the magnetic signature indicated the highest presence of ferrous material. The target was marked with a buoy and the research vessel was anchored nearby. On the first dive, archaeologists descended to the buoy's weight and began a standard circle search pattern off of the target location, steadily increasing the radius of the circle in six foot (1.8m) increments along the search line. Visibility in the shallow water offshore St. Augustine was never clear, and could range from zero to an average of ten feet (3.5m). Divers searched visually and by feel on the bottom surface, in addition to probing manually beneath the surface with a three-foot (.9m) long fiberglass probe. If no source for the magnetic target was readily apparent, circle searches were extended to 50 feet (15.2m), and then 100 (30.5m) feet beyond the buoyed target.

While some targets were exposed above the bottom for visual inspection, it immediately became apparent that due to the amount of sand accretion in the survey area, some targets would require the use of a water-induction dredge and/or a jet probe for thorough investigation. Jet probes were designed that would allow the same circular pattern search approach, but probing could be undertaken to depths of six feet (1.8m), and then twelve feet (3.6m) below the bottom surface. If the probe survey located a hard return beneath the sand bottom, indicating either wood or metal, the dredge was deployed to dig down to inspect the target. When necessary, the circle search pattern was repeated using a hand-held metal detector, or in some instances the magnetometer sensor head. The buoy was then moved closer to the location of any ferrous anomalies detected beneath the sand. Dredging and/or jet-probing was then once more undertaken in attempt to discover the source of the target's anomalous magnetic reading.

Ground-truth investigation in 1995 located cultural material at three of the original twenty targets. One target was modern dredge pipe debris (Target 28), and two were the remains of historic shipwrecks. Designated as archaeological sites 8SJ3309 (lower section of a wooden hull) and 8SJ3310 (19th-century steam machinery) based on their exposed features in 1995, both sites were recorded in detail in 1997 (Morris *et al*, February 1998:43-51).

In 1997 dive operations and target refinement with limited magnetometer survey continued on twenty of the original priority targets, and four newly generated anomalies, as weather and sea conditions permitted. Target No. 48 and adjacent Target No. 52 were checked on the last dive of a three month summer field season scheduled to end in September. The targets' location within the survey area is shown in Figure 5-7. Since a magnetic anomaly showed up on two different survey lanes, two target numbers were assigned. Both target hits had produced only a moderate range of gamma variation during the initial magnetometer survey (66-67 gammas), but because of the shape and duration (13-15 pulses) of the signal, the site records seemed very promising. Figure 5-8 reproduces the original magnetometer strip record for the targets. The Priority and Notes on the original table of survey results from 1995 indicate that magnetometer operator Gordon Watts rated the Target 48/52 as being generated by a single source, top priority "A", and called this a "good target" with a "scale change" indicating its magnitude (Franklin and Morris, May 1996:24).

Figure 5-8.   Magnetometer Strip Chart 48/52
(Franklin and Morris,1996:25)
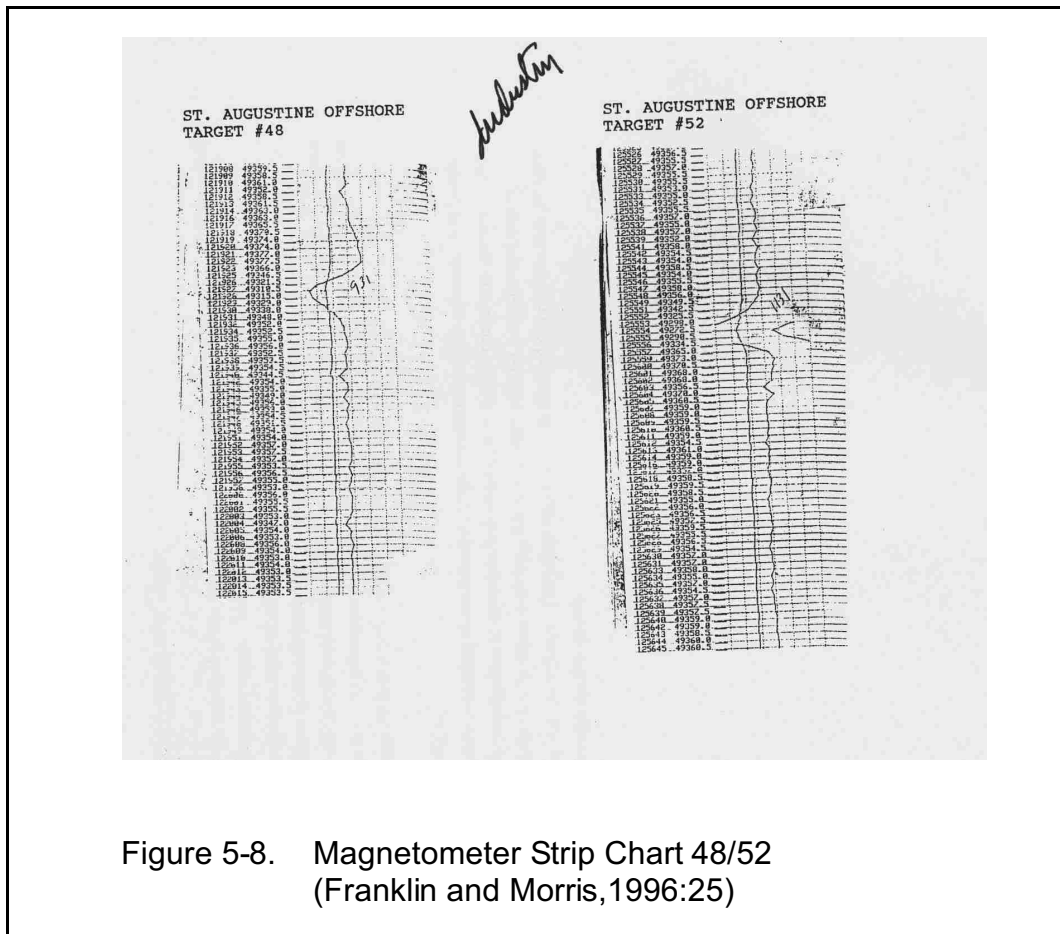
The first dive on the target site showed a completely barren landscape with one exception. The anchor of the research vessel had snagged an exposed iron ring. Hand-fanning cleared enough sediment to show that the ring was attached to an iron anchor. The dredge was immediately set up to clear overburden, and a small area was cleared and recorded over the next week. Three anchors, eight six-pound iron cannon, a mineralized wooden pallette, and a conglomeration of iron bar stock were mapped *in situ* (Morris et al, February 1998:36-42). The first plan for the site appears in Figure 5-9. The discovery was reported to the state of Florida. File number 8SJ3478 was assigned to Target 48/52, informally called the "Tube Site".   A description of all SOAR work on the site (1997-2003) follows.
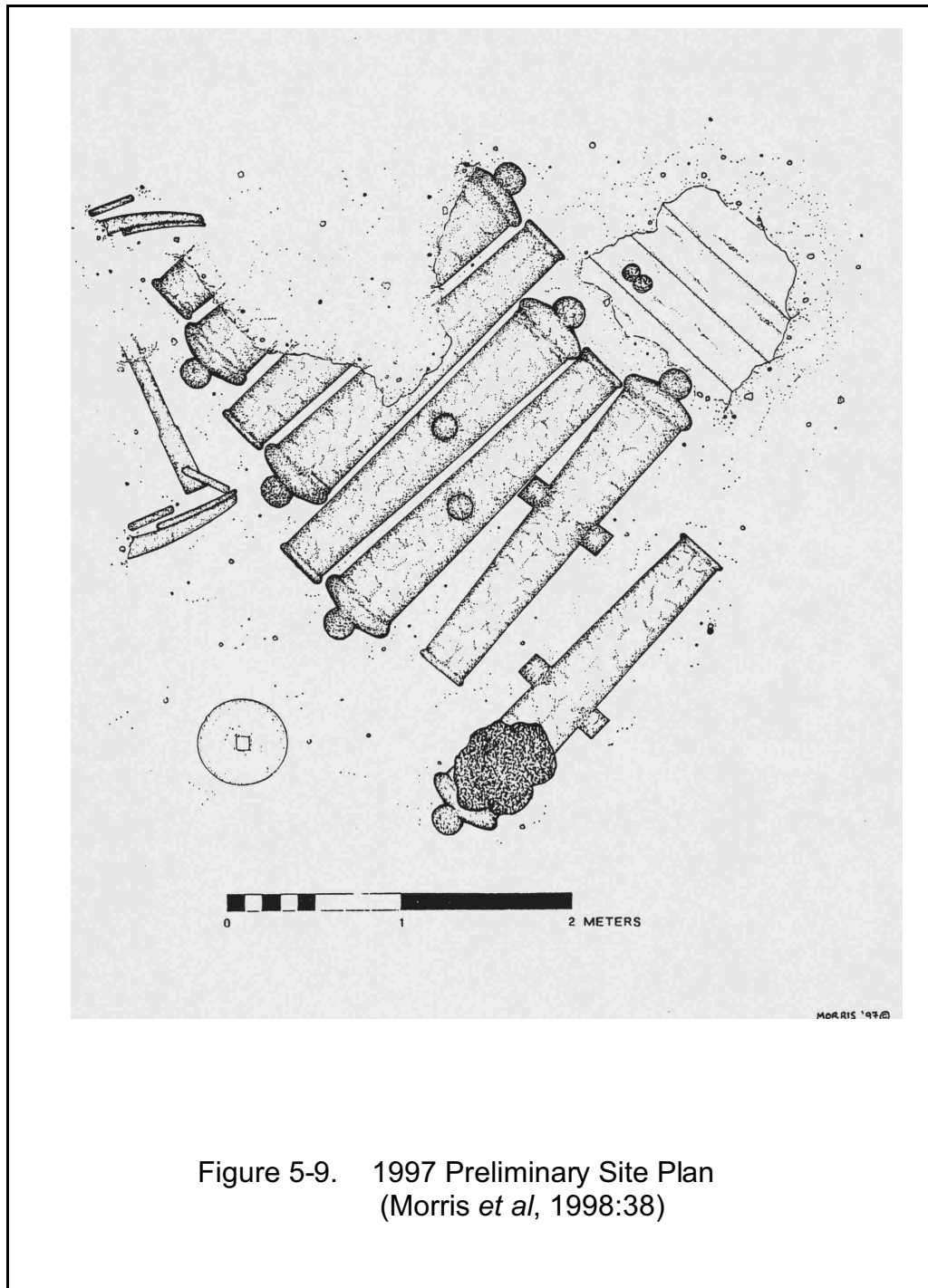
Figure 5-9.   1997 Preliminary Site Plan
(Morris *et al*, 1998:38)

EXCAVATION OF SITE 8SJ3478

Site 8SJ3478 lies in six meters (20 ft) of water less than one and one-half kilometers (0.8 nautical miles) offshore from the lighthouse in St. Augustine. The site is in an open ocean environment and currents can run as high as eight kilometers (5 miles) per hour. Sediment continues to uncover and re-bury the site daily.

The majority of the site is buried beneath at least one meter (3.28 feet) of sand overburden. Visibility while working on the site ranged between zero to five meters (0 to 16.4 feet), while the average visibility was generally less than one meter (3.28 feet). Between 1997 and 2000, an area that spans approximately twenty meters by five meters (65 by 16 feet) was examined. The following section will detail excavation procedures utilized during this period, while specific information about the artifacts recovered will be listed in Chapter VII and the artifact catalogue (Appendix C).

A research design was generated for the 1998 field season that called for the recovery, conservation and analysis of one of the large concreted cast iron cannons from Site 8SJ3478. A single gun was recovered on 2 June 1998 and brought to the dock for mechanical cleaning (Figure 5-10).

Figure 5-10. Recovered Cannon 8SJ3478-06 at Dock in St. Augustine

After cleaning, the cannon was drawn, measured and photographed before undergoing stabilization through electrolytic reduction in a custom built display tank on the grounds of the St. Augustine Lighthouse & Museum. Upon removal of an outer layer of marine encrustation several facts about the cannon (Catalogue No. 8SJ3478-01) became evident. The gun was identified as a British 6-pounder manufactured during the reign of King George II (1727-1760), as evidenced by the "GR2" on the crest. The gun was also marked with a Broad Arrow designating British ownership, its weight in hundredweights (17-2-2), and the number "10". This provided the date and nationality of the shipwreck's origin, which eventually led to the identification of the vessel lost at site 8SJ3478.

Test excavation continued on the site throughout a three-month season in 1998. Test trenches were excavated and diagnostic artifacts were recorded and plotted in reference to the guns' location before their removal for conservation and analysis. All excavation was undertaken using a two-inch diameter water induction dredge system with monitored exhaust for control. Table 5-1 lists the artifacts recovered during 1998. Figure 5-11 shows the site plan generated at the close of the 1998 field season.

The 1998 field season proved to the SOAR team of archaeologists again how difficult conditions offshore from St. Augustine could be. Despite continual efforts to clear areas of the wreckage for recording, the site continued to fill in almost as quickly as it was uncovered. A research design for 1999 called for the addition of two extra larger bore water induction dredges to be operated in unison for digging and recording small areas of the site. After an on-site inspection dive, Florida State Archaeologist Dr. Roger C. Smith recommended the use of a prop-wash deflector to clear the site in the future, since the upper layers of the wreck were repeatedly recovered with what was clearly a recent deposition of modern overburden.

TABLE 5-1

ARTIFACTS RECOVERED DURING THE 1998 FIELD SEASON

(Artifacts Numbered 8SJ3478-No.)

(Franklin et al, May 1999:20)

No.	Description	Associations	Analysis
01	Cast Iron Cannon	7 others, stowed	British, 1727-1760
02	Iron Bar Stock-Fragment, (½" x 2" rectangular)	Concreted to gun(01)	One of several bars on site
03	Bundle of 7 iron files, triangular, 1 blank, wrapped in organic fiber [10 files total]	Concreted to gun (01), Fiber sampled	Double-Cut, 1 blank shows name "Sampson"
04	Grindstone [millstone]	outboard of guns	Marked 0-3-0 (84 lb, or 3/4 of 112)
05	Squared Base, Stone, Marble (?) [apothecary tray]	Pb shot (07-23) and wt. 06 & 11	5 circular depressions
06	Fishing Weight, Lead (Pb)	Shot (07-23),05,11	18th c.
07-10	Lead (Pb) Shot, good condition	Base(05) & wt. (06)	.69 caliber, may be used in .75 Brown Bess Musket
11	Cu alloy hinge	(05-23)	Brass
12-23	Lead (Pb) Shot, corroded	05,06,11	.69 caliber, may be used in .75 Brown Bess Musket
24-27	Cast Iron Cannon Shot	concreted to gun (01)	for 6 pounder
28	Wrought Iron fastener fragment, rosehead, sq. shank, minimal taper	concreted to gun (01)	British type
29	Square Fe shovel blade, w/ socket for handle	concreted to gun (01), 2 more visible in concretion (30)	like those recovered from *Philadelphia* (Bratten 1997)
30	Concretion still being excavated in Conservation Lab	(Beneath Gun (01)	More shovels visible
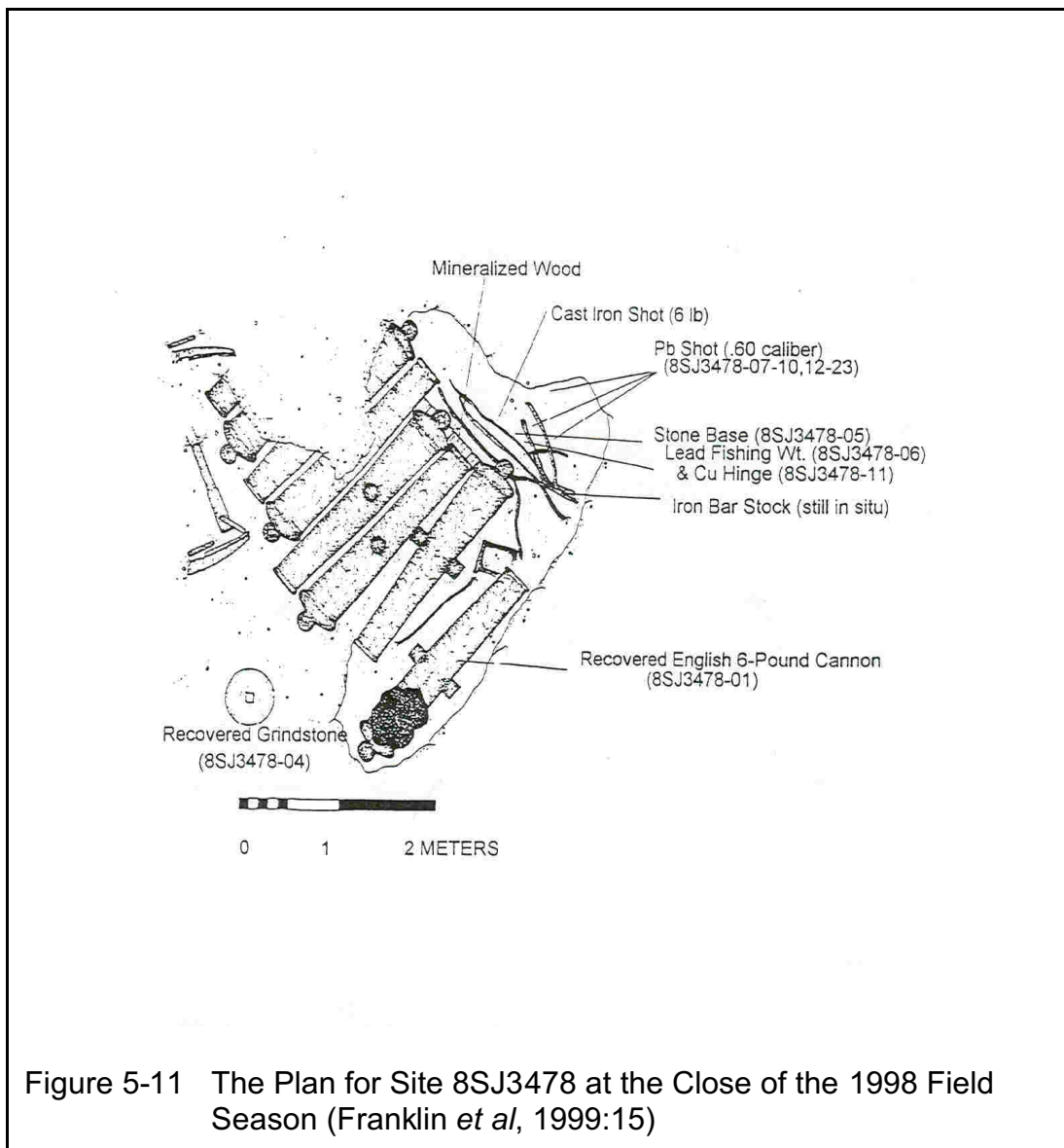
Figure 5-11   The Plan for Site 8SJ3478 at the Close of the 1998 Field Season (Franklin *et al*, 1999:15)

SOAR Fieldwork in 1999

These plans for modifications proved to be unnecessary after the first site reconnaissance visit in July of 1999. The research design needed to be modified once again after the first dive of the season. Examination of site 8SJ3478 revealed that two of the original eight six-pound cast iron cannons had been illegally removed. A large crater, in places still one meter deep, surrounded the site for an area of roughly six meters in diameter. It was obvious a prop-wash deflector had very recently been used by illicit scavengers on the site. Although the Florida Marine Patrol began a special investigation of the crime, to date, the stolen guns have not been recovered, nor the perpetrators arrested. The salvagers had also chipped away at the concretion protecting each gun, presumably to determine whether they were bronze or iron. Newly exposed were several artifacts, including a small swivel gun, which was fortunately concreted to the gun mass and attached to the mineralized wooden palette beneath the guns. SOAR staff immediately began recording and recovering the visible artifacts, since it was clear that the site was now threatened by more than erosion.

To aid in measuring and documentation, five iron pipes were set deep into the bottom before recording and excavation began in 1999. These permanent reference datum points were labeled A through E.   Geographic coordinates of each of the permanent datum points were recorded using a Differential Geographic Positioning System.

All artifacts recovered from the site were measured and recorded *in situ* using a system of triangulation. Measuring tapes were pulled from a minimum of two of the permanent datums to each object. The measurements were then plotted to record the exact location of the artifact. The stratigraphy of the site had been continually disturbed since the area was repeatedly uncovered and re-buried during the two centuries since the ship's deposition. This pattern was clearly demonstrated by the variety and type of marine growth on site features, as well as the discovery of twentieth-century intrusive items buried underneath

the cannons, more than one meter below the datum. For this reason, though a controlled Depth Below Datum (DBD) of all objects was recorded, the artifacts were plotted as a single layer. Recovered artifacts were numbered simply in sequential order of their recovery. Figure 5-12 is a Geographic Information System (GIS) plan of the site generated to show the exact positions of the primary artifacts recovered, as well as the location of the permanent datum in reference to the exposed site.

Despite repeated searches, probing manually and with water jet probes to a depth of four meters below the bottom surface, no articulated wooden hull remains of the vessel were discovered.   During the first three years of excavation (1997,1998 and 1999), sixty-five numbered artifacts were recovered for conservation and analysis. Some artifacts were encrusted or concreted together. Recovered concretions were cleaned, separated and identified in the laboratory. New numbers were assigned until the entire site 8SJ3478 artifact collection recovered by SOAR consisted of 785 individual objects (over 500 were individual lead musket balls). The artifact collection as a whole, and its individual components are discussed in chapter VII.
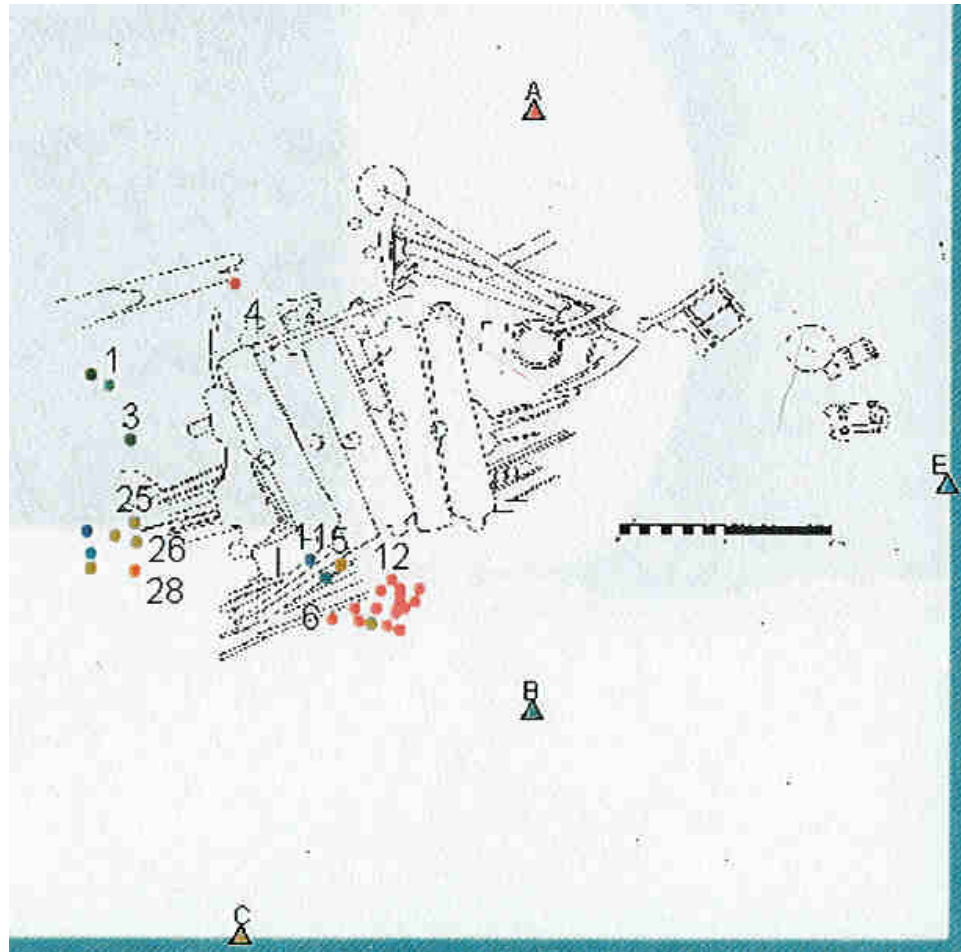
Figure 5-12. GIS Drawing of Site 8SJ3478 Showing Datum Locations

CONSERVATION OF THE ARTIFACTS

Basic conservation procedures for the artifacts is described below, clarified where necessary in Chapter VII, and mentioned in the database of all artifact records in Appendix B: the Artifact Catalogue.

All artifacts recovered from St. Augustine during 1997 and 1998 were stabilized and conservation treatment was begun at temporary SOAR facilities in St. Augustine and Pensacola, Florida. Some objects, including the cannon, underwent their entire treatment while on display at the St. Augustine Lighthouse & Museum. The types and amounts of artifacts recovered during the 1999 field season required the use of a traditional conservation laboratory. With the support of laboratory director Dr. D.L. Hamilton, all St. Augustine artifacts recovered by SOAR were transported wet to the Conservation Research Laboratory at Texas A&M University in College Station, Texas in the Fall of 1999. Artifacts were stabilized and stored, and treatment of ferrous materials was begun immediately.

Basic artifact conservation procedures are described here by artifact composition. Each artifact was measured, drawn to scale, and photographed before any treatment was begun. All artifacts were stored in fresh de-ionized water until stabilized. The types of artifacts recovered include metals, wood, stone, ceramics, glass, and bone, as well as organic samples. Types of metals recovered include: iron (wrought and cast), brass, copper, pewter (lead and tin), lead and silver. All metal objects were cleaned of surface debris mechanically. In most instances an air scribe was used to remove marine encrustation. Iron objects that had deteriorated but retained a solid metal core underwent electrolytic reduction (ER). A regulated D.C. power source was set up to supply a steady current through a vat that contained the electrolyte solution (2% sodium hydroxide or NaOH), with the artifact connected to the negative terminal, surrounded by a stainless steel mesh anode which was connected to the positive terminal. This treatment can stabilize metal by returning structural ions, as well as helping to thoroughly remove salts which will lead to further corrosion

(Hamilton 1976:28-48).   Actual electrolytic treatment durations for iron objects that underwent ER ranged, on average, between seven to nine months for small items like the axe heads (numbered with prefixes 8SJ3478-58,59 and 60) and sixteen months for larger thick concretions like the shovel head conglomerate (8SJ3478-30) and the swivel gun (8SJ3478-39).   After testing showed that all chlorides had been removed from the ferrous objects, they were disconnected, rinsed in fresh water, coated with tannic acid, and sealed by immersion in boiling microcrystalline wax.

Some iron objects were so badly degraded that no metal remained. These items were cast from their molds in the surrounding marine encrustation to create fully detailed epoxy replicas (such as the trowel 8SJ3478-61-03).

Brass, copper, and pewter artifacts also underwent the same ER treatment described above for iron, though required a much shorter duration. Simple lead objects like the .69 caliber shot and shot holder (8SJ3478-36) were treated by immersion in a 10% hydrochloric acid (HCL) solution to remove marine encrustation and lead carbonates (Caley 1955 in Hamilton 1998:File 14). After rinsing to remove chemical residue, and boiling in de-ionized water, lead objects were coated and sealed in microcrystalline wax. Pewter objects were coated and sealed with *Krylon* 1301. One silver object, a button (8SJ3478-61-09) was recovered from the site. The button was treated with alkaline dithionite to reduce silver corrosion (Hamilton 1998: File 13), rinsed and de-watered, then sealed with Acryloid B-72 (*Krylon* 1301).

Large composite concretions such as the wooden boxes filled with axe heads (8SJ3478-59, 60 & 61) were actually excavated and documented in the laboratory. An air scribe was used to mechanically remove corrosion products and separate the individual artifact components, which were then stabilized and treated separately by composition type.

Wooden artifacts were cleaned mechanically, put through a series of fresh water rinses to remove soluble salts and then treated with silicone oil to strengthen waterlogged structural cells. The silicone oil Methetrimetheloxysilane

(MTMS) solution (*Dow Z-6070)* was then cross-linked with a permanent catalyst: Dibutyltin diacetate or DBDTA ©. (Smith 2000, personal communication). Though the treatment is irreversible, the artifact is re-treatable and the stability and durability of the conserved object was judged to be far superior to other traditional organic conservation methods (such as polyethylene glycol (PEG), (Smith 1997).

Stone, ceramic, glass and bone artifacts all underwent variations of the same procedure. Insoluble salts and marine growth were removed manually. The objects were then rinsed in a series of fresh water baths until all soluble salts had been leached out. Once chloride free, the items were dehydrated using a gradual succession of de-ionized water mixed with an increasing proportion of organic solvent baths. This preserves structural integrity better then simply allowing the objects to air dry, which is quicker but can create distortion. Porous surfaces were sealed with Acryloid B-72 (*Krylon* 1301).

Final photographs were taken of all artifacts following their conservation treatment. Identification and comparative analysis of each artifact was conducted on an individual basis. Several organic samples were recovered in the field and in the laboratory. These samples were sent to Dr. Lee Newsom of Penn State University for analysis. Artifact analysis and Dr. Newsom's results and their implications are discussed in the following chapter.

ARCHIVAL RESEARCH METHODS

Research has been ongoing in a variety of archives since the project's inception in 1995. Since research methodology was directed by, and therefore dependant upon, information that was acquired while searching the archives, the archival research undertaken will be outlined in the following separate chapter, along with the basic results describing navigation to St. Augustine during the eighteenth century, as well as the documents used to identify the vessel at site 8SJ3478 as the *Industry*. Archival and historical research used to help identify artifacts recovered from the site are discussed where applicable in

the individual artifact analysis summaries in Chapter VII.   A description of trade and supply to Spanish Florida, based on the study of contemporary archival and historical sources, will be reported in Chapter VIII. Colonial navigation between New York, Charleston and St. Augustine will be delineated in Chapter VIII then expanded to discuss the individuals from New York tied to St. Augustine in Chapter IX.

SUMMARY

Between 1995 and 1999 a complete maritime archaeological survey was undertaken in the waters surrounding St. Augustine. Historic charts and maps were collected and digitized, which allowed archaeologists to choose the specific areas to survey using a magnetometer. Over fifty-two targets were identified during the remote sensing survey. Two adjacent targets, numbered 48 and 52, were discovered to be the site of an eighteenth-century shipwreck (8SJ3478).   Subsequent research identified the vessel lost at the site as the *Industry*.   The site was excavated by Southern Oceans Archaeological Research for three field seasons, between 1997 and 1999.   Though no hull was discovered, a number of artifacts were recovered, and the site was mapped on the sea floor. Artifacts recovered were taken to the Conservation Research Laboratory at Texas A&M University for stabilization. The completely conserved artifact collection was returned to the Florida Bureau of Archaeological Research in Tallahassee, Florida. The artifacts were then loaned to the St. Augustine Lighthouse & Museum, where they now form the basis for an exhibit on the shipwreck of the *Industry*.

CHAPTER VI

ARCHIVAL RESEARCH

Archival research has been in progress since the St. Augustine survey began in 1995. Because research direction is motivated by results, this chapter will combine information about research methodology with some of the primary results that were discovered using historical sources. Information about the vessel at site 8SJ3478's identification as the *Industry*, its mission, cargo, route, and captain are reported here. Methods used to research eighteenth-century coastal navigation to St. Augustine, and British supply to a Spanish colony are discussed. A summary of the raw data acquired through primary sources is given to help interpret information pertinent to colonial navigation between New York, Charles Town and St. Augustine. An in-depth analysis of eighteenth-century trade and supply to Spanish Florida is described in Chapter VIII, supplemented with information acquired from archival sources.

IDENTIFICATION OF THE VESSEL LOST AT SITE 8SJ3478

Cleaning and conservation of the cast-iron British cannon recovered at the beginning of the 1998 field season focused initial archival research on the wreck site. The George II (1727-1760) crest suggested that the vessel lost at site 8SJ3478 might be one of the known shipwrecks already described in a summary of Florida history (Page 1978:41). Further research was undertaken in Special Collections at the University of Florida in Gainesville.

The Gage Documents are part of the East Florida Papers housed at the P.K. Yonge Library of Florida History at the University of Florida in Gainesville. The East Florida Collection was compiled by the William L. Clements Library in Ann Arbor, Michigan in 1950 and consists primarily of documents pertaining to Florida history in the eighteenth century. The Gage Papers, housed at the University of Michigan, contain complete transcripts of the correspondence of General Thomas Gage, Commander of the British Army in New York, between

1763 and 1765. The study of these documents provided hard evidence that site 8SJ3478 fits the criteria of the 1764 wreck of the *Industry* at St. Augustine. The sloop *Industry,* hired by the British Army as a transport vessel and commanded by Captain Daniel Lawrence, wrecked while attempting to enter the harbor at St. Augustine on May 6th, 1764 (Gage Papers, Reel 1,Vol.18,6, 13 May 1764, Ogilvie to Gage)

The *Industry* sailed from New York, through Charles Town to St. Augustine. The vessel was carrying subsistence money, six-pound cannons, ammunition and "artificers tools" to supply the garrisons of East and West Florida as the Spanish ceded ownership and occupancy to England at the end of the Seven Years' War under the terms of the 1763 Treaty of Paris.

Figure 6-1 features three excerpts from the Gage Papers that tell the story of the vessel's embarkation and loss quite succinctly (emphasis is added with bold highlights.) General Thomas Gage was corresponding with Major Francis Ogilvie, commander of the British occupation army, the 9th Regiment of Foot. Ogilvie governed East Florida for thirteen months in 1763 and 1764 before being relieved by the newly appointed Governor James Grant. Complete transcripts of the Gage documents that pertain to British supply to East and West Florida appear in Appendix B.

(Reel 1, Vol. 16,3)
5 April 1764, New York, Gage to Ogilvie
"Sir,

Colonel Eyre, sends you by this occasion a proportion of the tools for the use of the garrison of St. Augustine, for which you will give the master of the transport a separate receipt, and you'll be pleased to take charge of the same, and be particularly careful, that they are not Mislaid, or abused , but solely made use of in such Publick Works, as may be carryed on for the King.

I am,
Sir,
Gage"

_____

(Reel 1,Vol 18,1)
6 May 1764, Gage to Ogilvie

"I hope the ship Industry arrived safe with my letter on ___ and that you have received the Provisions, Artillery, & subsistence money, which I forwarded to you by this opportunity."

_____

(Reel 1,Vol.18,6)
13 May 1764, Ogilvie to Gage
"Sir,
*I have the Hon'r of Your Excellency's letter, I am extremely sorry to acquaint you that **the Industry Transport, Commanded by Captain Lawrence was unfortunately cast away off the Bar of St. Augustine the 6th Inst. ....."***

Received May 30 by the sloop Anne, and answered by the Anne
****

Figure 6-1.   Transcription of Correspondence Pertaining
to the *Industry's* Loss

Ogilvie further laments to Gage the loss of the *Industry's* cargo of artificer's tools (Ogilvie to Gage, Reel 1, Vol 18,6). Later General Gage reports the vessel's loss, including supplies destined for the other forts in Florida to a Captain Harries, the officer commanding the British army at Appalachi (Reel 1, Vol. 19,2). Gage later alludes to the fact that the guns lost and those sent to replace them were six-pounders (Gage to Harries, 20 June 1764, Reel 1, Vol.20,2).

Four sloops were chartered by the British Army in New York to supply the garrison at St. Augustine between April 4 and June 22, 1764. The vessels for St. Augustine are listed as follows:

> "*St. Augustine:*   sloop *Industry, Captain Daniel Lawrence*
> sloop Peggy, Captain James Devereaux
> sloop Anne, Captain Jonathan Porter
> Sloop Live Oak, Captain Jonathan Lawrence"
> (Gage Papers, Microfilm, Reel #2 140G).

Based on these transcript descriptions of the *Industry's* cargo, the location of the wreckage, and the date and types of artifacts recovered from the site, the vessel lost at site 8SJ3478 has been identified as Captain Daniel Lawrence's lost *Industry*.

RESEARCH SOURCES ON EIGHTEENTH-CENTURY COLONIAL AMERICAN NAVIGATION: NEW YORK, CHARLES TOWN AND ST. AUGUSTINE

Once the vessel lost at site 8SJ3478 was linked to the *Industry* and Daniel Lawrence, research closely focused on navigation between New York and St. Augustine. Again, secondary historical studies provided clues to where to begin delving deeper into the historic records. A table of vessels used to evacuate Spanish inhabitants from St. Augustine before the British takeover in 1764, compiled from Spanish documents (AGI 86-6-6, SD 2543, April 16, 1764), lists the "English Sloop" *Industries,* carrying 58 passengers, departed for Havana on December 23, 1763 (Gold 1969:72).

A historical study of eighteenth-century legal and illicit trade between St. Augustine, Charles Town, South Carolina, and New York made mention of several vessels from New York operated by captains named Lawrence, as well as English merchants from the Walton family in New York who commonly traded in Spanish Florida throughout the eighteenth century (Harman 1969). Harman's study, *Trade and Privateering in Spanish Florida 1732-1763,* focused primarily on the trade network that developed between St. Augustine and the English colonies in the period leading up to the loss of the *Industry*. Data obtained about trade with St. Augustine from Harman's research into cargo manifests which mention the vessels and their master's names, formed one starting point for further research in this study (Harman 1969, Appendices I-IV: 83-91). Harman used information published in the *South Carolina Gazette* as one of her primary sources.

Additional historical research focused on coastal trade between American colonies in the years 1758 to 1764. A variety of sources provided information about the *Industry*, the vessel's port of origin, the transports hired to supply St. Augustine, the Lawrence family of mariners, and coastal trade and supply to St. Augustine in the period prior to the Seven Years' War. Genealogical research clarified the connections that linked the Lawrence family to trade and supply in St. Augustine.

Documents archived at the St. Augustine Historical Society Research Library have been examined, as well as collections of books and records maintained by historical societies in Queens, New York, Charles Town, South Carolina and Savannah, Georgia. Port records from mid-eighteenth century newspapers printed in Boston, New York, South Carolina and Georgia have been reviewed on microfiche and microfilm.

Eighteenth-century newspapers provide a valuable source of information about the type and variety of ships that navigated the waters of St. Augustine. Primary documents were researched to establish the ports where the *Industry* laded. Columns titled *Marine List, Marine Intelligence,* or *Custom-House*

reports, usually appear weekly. These maritime reports usually detail the name of the ship, its rig, captain, and either the port of embarkation or destination. It should be recognized that this information forms only a framework for analysis, since it only reports legitimate destinations and cargoes, not unsanctioned ones. There was no St. Augustine paper in print during the period of study. Since trade between the British colonies and the Spanish port town was legal except in times of war, St. Augustine is frequently mentioned in the columns of *Weyman's New-York Gazette* and the *South Carolina Gazette*. Other contemporaneous newspapers examined included the *New York Mercury,* the *Boston Gazette and Country Journal,* and the *Georgia Gazette*.   During the period of study, news that is considered common knowledge sometimes does not appear in the local newspaper, but may be mentioned in a maritime intelligence column or a letter published elsewhere in colonial America. All newspapers mentioned were read thoroughly. Hard copies of the microfilm were printed and transcriptions were made of any material that might be considered relevant. All mentions of St. Augustine, the *Industry*, and any captain or vessel that had been linked through prior research to St. Augustine, the Lawrence family, or the Walton family were transcribed for further analysis (see Appendix D.)

Primary source repositories also were researched for information to interpret the lost vessel, its operation, cargo, and the trade routes traveled. Other archival collections examined include the Public Record Office in London, and port records for Savannah, Georgia and Charles Town, South Carolina.

An indexed list of vessels registered to trade during the period of study in South Carolina is published in Nicholas Olsberg's "Ship Registers in the South Carolina Archives" published in *South Carolina Historical Magazine* (Vol.74, October 1973). Though this report only mentions vessels departing for legal ports with legitimate cargoes, it still provides information about Daniel Lawrence and the vessel he built and operated after the loss of the *Industry*. A link was discovered between the Lawrence family, New York merchants from the Walton

family, and the Walton's agent in St. Augustine: Jesse Fish (see Chapters VIII and IX). Research to identify the relationships between the Lawrence family members and trade in St. Augustine was clarified using standard genealogical research methods. Initial relationships were identified on the internet-based *Ancestry* family web program pages. Genealogy was verified by checking the archives of the Queens Astoria Historical Society. A volume by James Riker published in 1852 titled *The Annals of Newtown in Queens County, New York* contains the definitive genealogy of the Lawrence and Fish families.

The methods described utilize traditional archival research methodology. The papers of General Thomas Gage contain correspondence that described the vessels detailed to supply East and West Florida, as well as the cargoes they carried. The Gage Papers and one contemporary newspaper account mention the wreck of the *Industry* on the bar at St. Augustine. Eighteenth-century English newspaper maritime reports describe the legitimate embarkations and arrivals from ports along North America's east coast. The frequency of certain vessel and captain names visiting St. Augustine merited further research. English primary and secondary sources examined highlight the fact that legal Spanish sources for supply to St. Augustine were typically supplemented by English North American suppliers. These facts were corroborated by an examination of Spanish documents from the archives in Seville (Stetson Collection) that were microfilmed, catalogued and stored at the University of Florida and the St. Augustine Historical Society.

CHAPTER VII

ARTIFACTS RECOVERED FROM THE *INDUSTRY* SITE (1997-1999)

<u>INTRODUCTION</u>

During preliminary investigation of the *Industry* in 1997, and two subsequent field seasons in 1998 and 1999, a limited area was selected for excavation and removal of artifacts. A total of 65 artifacts were originally given SOAR artifact accession numbers in the field. In the lab, as composite artifacts were separated, and concretions cleaned and cast, new numbers were assigned, until the collection grew to a total of 785 individual objects. The artifacts will be presented and discussed here by composition and type. Descriptions will be followed by identification and any comparative analysis. Complete measurements, as well as recovery data and individual conservation records, will be appended to this report as an Artifact Catalogue in Appendix C. A final section in this chapter will summarize overall artifact analysis from the site.

These artifacts have all completed their conservation treatment and been returned to the Florida State Bureau of Historic Preservation, Bureau of Archaeological Research (BAR), where new artifact accession numbers were assigned.   The BAR accession numbers begin with the prefix 00A.022 or 02A.039 and will be included only in Appendix C, for cross-reference. All artifacts recovered by SOAR are currently on loan to the St. Augustine Lighthouse & Museum and form the basis for an exhibit on the *Industry*.

While they were never recovered, three anchors located at the *Industry* site were significant in helping to identify the date and nationality of the lost vessel, since they were distinctly British in appearance. The anchors were recorded *in situ, and* described below.

ANCHORS

Three anchors were found stacked, and thus presumed stowed, to the north of the line of 6-pound cannons (see Figures 5-6 and 5-11) on the wreck site. Though deeply buried, most of the anchor assemblage was uncovered and basic measurements recorded *in situ*. The overall length of each anchor is the same, 1.72m (5.6 feet). Two of the anchors have two flukes, while the third anchor is missing one fluke, suggesting it may have been intended for use as a mooring. Each anchors has a ring that is approximately 28 cm (11 inches) in diameter wrought through a crown that is squared (12cm x 12cm, or 4.72 x 4.72 inches). The crown is 40cm (15.75 inches) long. The flukes' palms are equilateral, straight, and angled sharply (not curvilinear). The shanks are elliptical in cross-section (Morris *et al,* 1998:36).

ARMAMENT

A six-pounder cast iron cannon (8SJ3478-01) was recovered from the *Industry* site in 1998, and a swivel gun (8SJ3478-39) was discovered and raised in 1999. The cannon was one of eight cast iron cannon located during the original site assessment in 1997. The 1997 site plan is shown in Figure 5-9. All of the cannon were of similar size, and stowed muzzle-to-bore, probably low in the hull and distributed along the vessel's centerline, when the ship wrecked. Traces of a mineralized wooden surface beneath the guns was originally identified as the vessel's hull (Morris *et al* 1998:36), but upon further examination was determined to be a pallet or specially constructed temporary deck for stowage (Franklin *et al* May 1999:21).

The southernmost cannon was chosen for recovery in 1998, selected because of its position separate from the other guns which were concreted together.   A small coral head, as well as two concretions of iron objects were still attached to the gun when it was recovered. Once the cannon was on land, complete removal of the surface concretion was undertaken using hammer, chisel, and a small-tipped vibrating air scribe. The smaller concretions were

removed, stored in an alkaline solution, and conserved at a later date. A small
chunk missing from the lower edge of the cascabel was the only damage
noticed after the gun was mechanically cleaned. The size of the cannon, along
with several markings that identified its British origin, eventually led to the
definitive identification of the vessel lost at the site as the *Industry*. Figure 7-1
shows the markings that were revealed on the cast iron cannon. Precise
measurements are listed in the Artifact Catalogue (pp. C-1 through C-2).
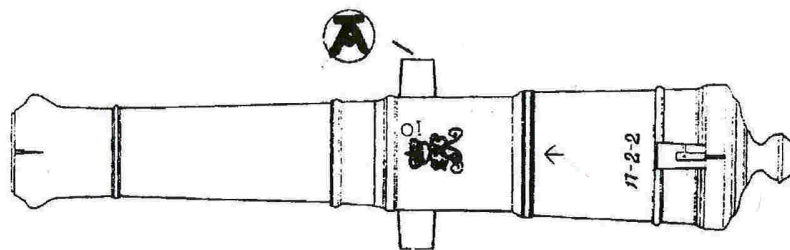
Figure 7-1. Drawing of Six-pound Cast Iron
Cannon 8SJ3478-01 by J. W. Morris III

The six-pounder recovered from site 8SJ3478 was clearly marked with the British Broad Arrow, the crest of King George II (1727-1760), and its weight in hundredweights:17-2-2. The standard hundredweight marking for this time period lists first the exact number of hundredweights, then the fraction, then any pounds leftover.   A hundredweight from the 18th century is equal to 112 standard pounds today. The weight formula when applied to cannon 8SJ3478-01 determined that the gun should, and is estimated to, weigh some 1,962 pounds (890kg). The number "10" was incised on the outer edge of the crest. This style of number is similar to many markings found on other cannons. It has been suggested that these markings serve as either inventory marks, or may be used when guns are placed on ships to ensure proper placement when mounting for optimum weight balance (I. Roderick Mather 2002, personal communication, Ruth R. Brown 2004, personal communication).

The most telling mark on the recovered cannon is the raised "A" with a bar crossing its top on the starboard-side trunnion. Using research in the British Board of Ordnance papers, Ruth Rhynas Brown has identified this mark as belonging to the Ashburnham furnace in Sussex, southern England (Brown 1989 and 2000, personal communication). Initially Brown surmised that this gun was cast either during the War of Austrian Succession (1744-48) or in the years leading up to and beginning the Seven Years' War. At that time, the Ashburnham furnace was "run by the Crowley family, at first by two brothers, Ambrose and John and after their death by their mother and sister, both called Theodosia" (Brown 2000, personal communication).   Brown states that the Crowley family "supplied the Board between 1745 and 1765 with iron ordnance as well as other ironwork" (1989:325).

The eight cannon at the St. Augustine wreck site were all close to 215 cm, or seven feet in length overall. The exact dimensions of gun 8SJ3478-01 are listed on the Florida Bureau of Archaeological Research Cannon Data Sheet (Franklin et al 1999:18) and appear here in the artifact catalogue. All measurements on the original form were made in feet and inches to reflect

British manufacture. Cannon are traditionally described using the gun's length measured from the muzzle to the base ring before the cascabel, or the inner tube's length. This is the term for length that the Board of Ordnance refers to, not the gun's overall length (Brown 2004, personal communication). This means the length of identification for the cannon recovered from the *Industry* site would be six feet (1.82m).

Ruth Brown reports that the first year in which the Crowleys provided six-pound cannon that were six feet, or six feet and six inches in length to the Board of Ordnance was 1742 (Brown 2004, personal communication). Brown stated that "short 6 pounders were a very recent development; until 1742 they were produced in lengths of 8 foot and above. Unfortunately there are no ordnance minute books for this period to give us a clue to why they were introduced. I would guess it was the Royal Navy's decision" (Brown 2000, personal communication).   Logically, smaller, more portable cannon would have been better suited to fighting at sea, especially during the sea battles between the Navy and the pirates and privateers so prevalent during the eighteenth century. Brown reports that the Crowleys "delivered guns of 6 foot in 1745-46, 1750 and 1762-63 (the last two years by Mrs. Theodosia Crowley and her daughter rather than Ambrose and John)" (Brown 2000, personal communication).

In March of 1764 Major Francis Ogilvie, British commander of the 9th Regiment stationed at the garrison in St. Augustine wrote to General Thomas Gage in New York requesting ordnance "absolutely wanted for the advanced posts of East Florida": Fort Matanzas - six or four pounders: 2, Fort Mose - six or four pounders: 4, and Piculata: 4 swivels (Gage Papers, 25 March 1764). Piccolata was the fort constructed to protect the eastern shore of the St. John's River landing some thirty miles inland northwest from coastal St. Augustine (Roberts 1763:15). See Figure 2-1 for the location of Matanzas Inlet, and Figure 3-4 for the location of Fort Mosé. The Gage documents show that four-pounders, six-pounders, and swivel guns were the types of guns requested and shipped to all forts in East and West Florida after the British took over in 1763.

Eight cannons were lost, and replacements sent, after the *Industry* wrecked on the bar at St. Augustine. Later reports detail the loss of additional artillery, and gun carriages, as other transport vessels either ran aground and needed to be lightened, or were lost (Gage Papers 1763-1765).

The single cannon (8SJ3478-01) recovered from the *Industry* site in 1998 was placed in a specially constructed tank on the grounds of the St. Augustine Lighthouse and Museum (see photograph in artifact catalogue). The cannon underwent electrolytic reduction treatment for nearly four years while on public display. Upon completion of the conservation treatment, the gun was put on exhibit at the museum through a loan from the state of Florida Division of Historic Resources, Bureau of Archaeological Research.

Associated objects that were recovered attached to the cannon 8SJ3478-01 in 1998 include artifacts that were later cleaned, conserved and identified as iron barstock (8SJ3478-02), a bundle of iron files (8SJ3478-03), four six-pound cast-iron cannon balls (8SJ3478-24,25,26 & 27), a small wrought-iron square shanked fastener, and twelve iron shovel blades (from concretions 8SJ3478-29 & 30).

In 1999 it was discovered that looters had stolen the two southernmost cannons left *in situ* on the sea floor. A crater one meter (3.2 ft.) deep surrounded the gun mass. A prop-wash deflector had apparently been used to clear the site. Figure 7-2 shows the final site plan drawing of the site made by John W. Morris III, in 1999 after the site was looted.
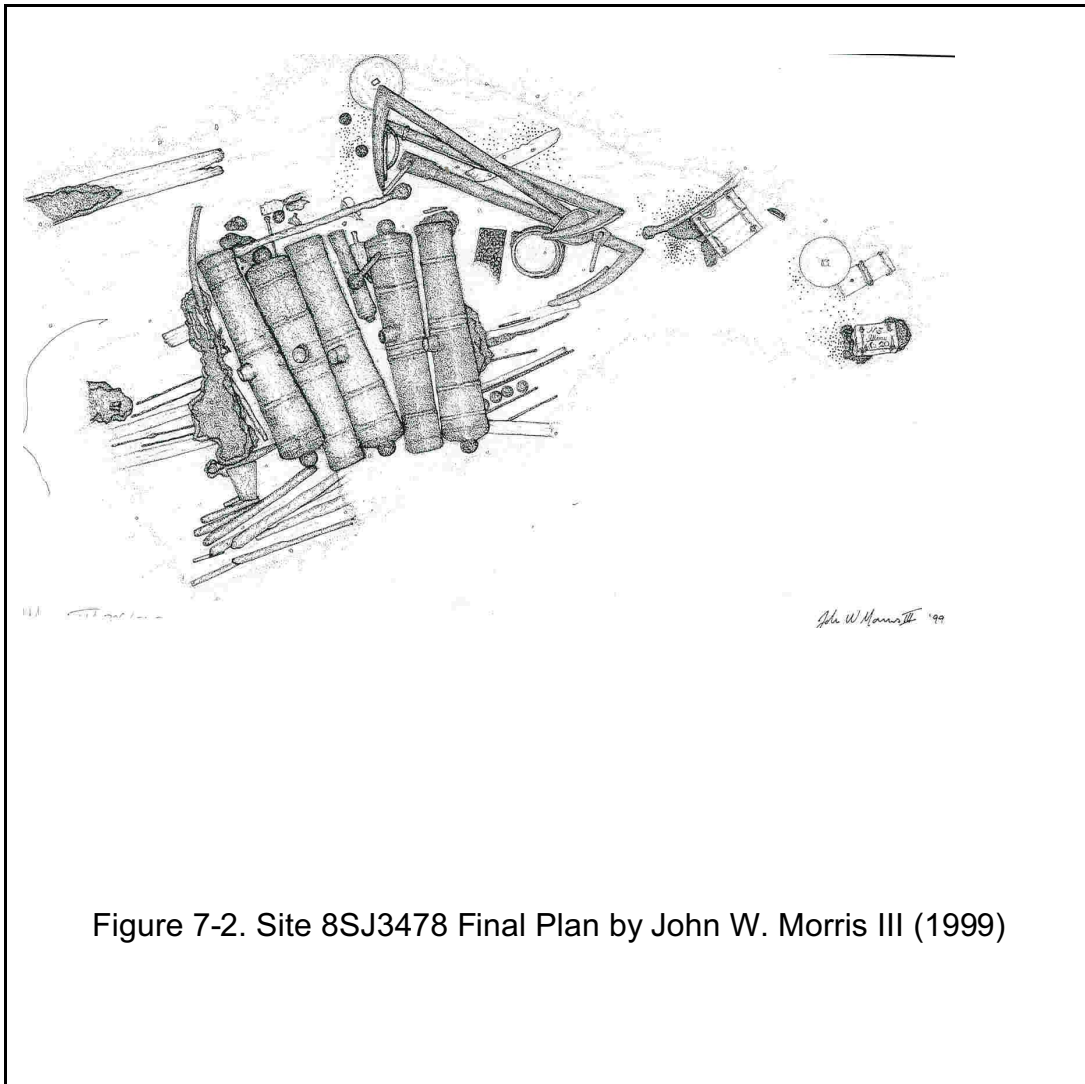
Figure 7-2. Site 8SJ3478 Final Plan by John W. Morris III (1999)

A small iron swivel gun was discovered concreted between two of the remaining cannon.   A number of additional related artifacts were also newly exposed, including a crate of iron shot, a cast-iron cauldron (8SJ3478-38), and more iron barstock. Unsure about the security of the exposed objects due to recent looting, all artifacts exposed were immediately mapped and recovered. The swivel gun (8SJ3478-39) was freed from concretion and brought to the surface on 11 August, 1999. The gun was stored in an alkaline solution at the Lighthouse museum, and transported to Texas A&M University's Conservation Research Laboratory (CRL) in College Station where it underwent an electrolytic reduction treatment between September 1999 and October 2000. No markings were found on the gun once it was mechanically cleaned. Figure 7-3 is a photograph of the gun after mechanical cleaning before completing conservation treatment. Detail photographs and the full conservation record appear in Appendix C.

The swivel gun measures 86 cm (33.5 inches) in overall length. An iron ring around the cascabel extends into a small twisted section of iron "monkey tail", broken before the gun concreted on the sea floor, that held a wooden grip assembly. The touch hole is visible, and there is no flattened area behind it to serve as a lighting platform.

Figure 7-3. Iron Swivel Gun 8SJ3478-39

Once cleaned, the yoke assembly was determined to be one piece of iron, worked to form the rings that held the gun around the trunnions, as well as a wedge to support the gun's barrel when raised for loading. The cleaned bore of the swivel gun measures 4.3 cm (1 and 11/16 inches.)

Swivel guns were common armament on board ship during this period. Ruth Brown states that a large number of poor quality half-pounders were quickly cast and sold to the British Board of Ordnance during the Seven Years War to arm troopships, packets and supply ships" (Brown 2000, personal communication). Historic documents suggest that swivel guns were also greatly favored by early colonial merchant ships, often mounted in the tops of a ship and used at close range to fire loads of musket balls down onto the decks and crews of an enemy vessel (Tucker 1989:98).

Swivel gun 8SJ3478-39 is similar in size and appearance to one that was recovered from *Philadelphia,* an American gunboat lost in Lake Champlain in 1776. The *Philadelphia* gun fired a three-quarter pound (.34 kg) ball and its bore measured 4.5cm, or 1 7/8 inches (Bratten 1997:185).

Tucker (1989:98) states that the typical swivel gun varied between 34 and 36 inches (86 to 91 cm) in length, 1.5 to 1.75 inches (3.8 to 4.0cm) in bore, and utilized shot that weighed either .50 or .75 pounds (.22 or .34 kg). Swivel gun 8SJ3478-39, recovered from the *Industry* falls directly within these parameters. Since the method of yoke construction was crude, and the tube's iron surface pitted and free of markings, the gun probably was one of many quickly cast during the eighteenth century to meet wartime demand.

AMMUNITION

Two types of ammunition were recovered from the *Industry* excavation between 1997 and 1999 (a third was recovered in 2000.) A quantity of nine cast-iron cannon shot were recovered (8SJ3478-24,25,26,27,31,43,44,45 & 46). The cannonballs were concreted and loose beneath the pile of six-pounder cannon (see Figure 7-2). All of the balls ranged between 8.75-9.0 cm (3.4-3.5

inches) in diameter, and weighed close to six pounds (2.72 kg). Casting lines where the two-part mold was joined were visible, as were the rough sprue marks that resulted from the process of pouring molten iron into the mold.

Recovered also from the site was a large quantity of lead, .69 caliber musket shot. Between 1997 and 1999, SOAR recovered 583 separate lead balls. At first, separate shot were recovered and numbered individually (8SJ3478-07-23, 32-35 & 40). As larger numbers of musket shot were encountered, lot numbers were given for multiple quantities (8SJ3478-41,49,55-04, & 57). Later, a few lead shot were recovered in the lab, encrusted to other artifacts (8SJ3478-60-21,61-01,62 &63). The details of shot measurements, conservation and recovery are listed in Appendix C.

At the end of the 1999 field season, a crate of three-quarter pound iron cannon balls was visible between the anchors and the remaining pile of six-pound cannon (see the site plan for 1999 in Figure 7-2). During 2000, the St. Augustine Lighthouse & Museum's program archaeologists (LAMP) recovered that box from the site. The cast iron shot measured 4.0 cm (1.57 inches) in diameter, and could have been fired from a swivel gun (Morris and Burns, June 2001:13). While excavating the box in the Lighthouse & Museum's laboratory in 2000, conservator Jason Burns observed that the balls appeared to have been wrapped in a loosely woven canvas fabric that had mineralized after deposition. Ordnance expert Robert Smith confirmed the viability of Burn's theory that the swivel gun shot may have been pre-packaged "bags of ammo" for the swivel guns (personal communication 2002).

LAMP archaeologists recovered an additional 262 lead musket shot (250 .69 caliber and twelve .63 caliber) during their 2000 field season. Burns noted that either caliber could have been fired in a .75 caliber Brown Bess musket, common to the British during this period (Morris and Burns, June 2001:13-15). LAMP archaeologists also recorded *in situ* a small collapsed wooden cask that held more .69 caliber shot, and observed that due to the looting of the site in 1999, a wide scatter of lead shot littered the entire site, and that "this shot was

recovered only when disturbed" (Morris and Burns, June 2001:11).

Lead Box (8SJ3478-36)

A solid lead container(8SJ3478-36) was recovered from the site in 1999. The object is square in cross-section, measuring 8.5cm(3.35 inches) by 8.5cm (3.35 inches) wide, and 13.5cm (5.31 inches) tall. Two integral holes on opposite walls of the upper edges suggest that a handle is missing. The object was recovered among the cannon mass, near the lead shot, anchors, and an iron cauldron (8SJ3478-38). Though originally symmetrical, the container was crushed, probably upon deposition. Figure 7-4 shows two views of the lead container.

Similarly sized and shaped containers have been recovered from other archaeological sites without their purpose being identified. Excavations at Port Royal, Jamaica by Texas A&M University produced two lead containers (deposition date:1692). One of the Port Royal boxes was almost exactly the same shape and size (PR84:715-5) as the *Industry* example. Comparative analysis of this lead box in the conservation laboratory led to the discovery of seven similar containers from six other archaeological sites (see Appendix C Artifact Catalogue for details on the comparative examples.) While the date ranges of the other sites spanned the years between 1684 and 1783, all deposition sites were identified as warships built or captured and used by the British Navy (Larn 1984:114).
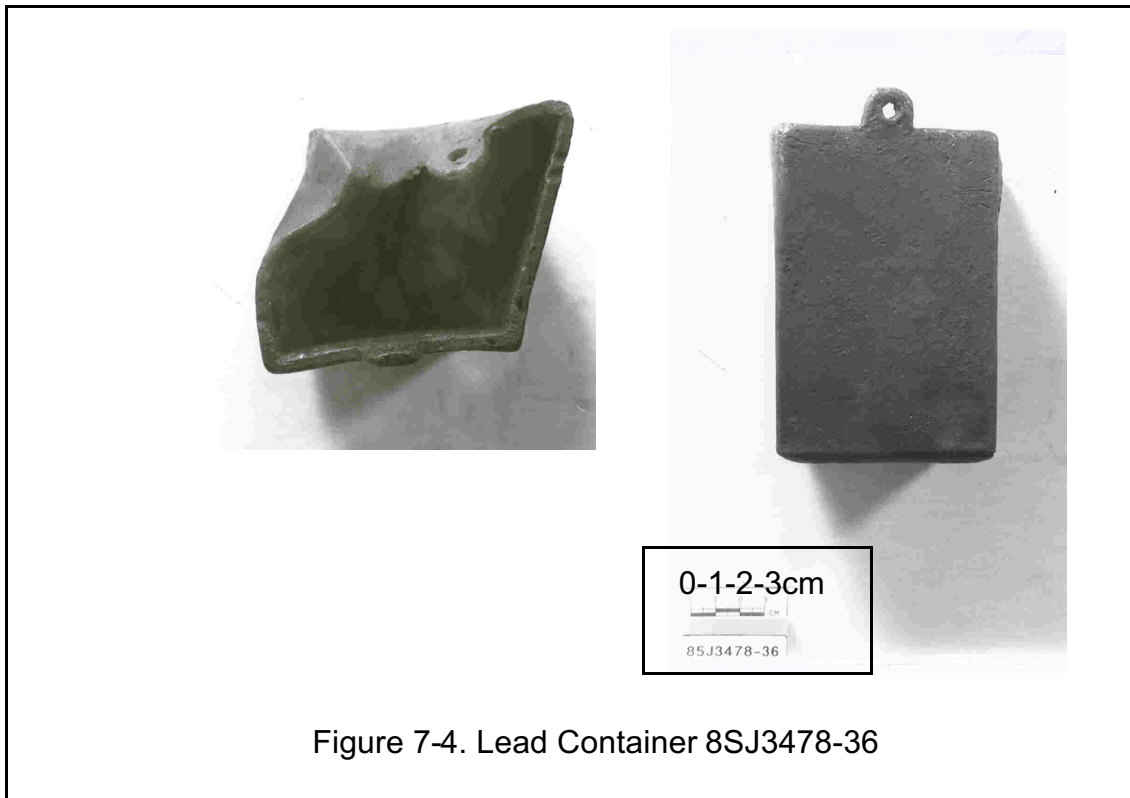
Figure 7-4. Lead Container 8SJ3478-36

The lead box recovered from the *Industry* site is likely a vessel intended to carry small quantities of gunpowder. It is presumed that the other unidentified lead containers from Port Royal and the 17th- and 18th-century English warships served the same purpose. The material of construction, lead, would protect the powder from sparks as it was carried from a central store to the guns for loading. Large amounts of volatile gunpowder would be kept away from the area of firing (and receiving) gun shot. Throughout history similar containers, or small wooden boxes lined with lead, have been used for this purpose. The two holes would have been used to fasten a rope handle to the container. Military treatises "for the education of young officers" published near the end of the eighteenth century list the quantities of corned powder (black powder components pre-mixed into larger granules) that would be necessary to fire a short six-pound gun as 24 ounces. This would be too large to fit into container 8SJ3478-36. The smaller charge required for a one-half pound swivel, or the three-quarter pound gun (8SJ3478-39) would be less than one-half pound of powder pre-loaded into a canvas bag to form a cartridge that would be the correct quantity for this container to hold (Matthew Champion 2003, personal communication).

TOOLS

A wide variety of wrought iron tools were recovered from the *Industry* site between 1997 and 2000 by SOAR. These tools ranged between large quantities of artificer's tools being shipped to maintain and renovate the forts of the new frontier, to single tools of specialized craftsmen. A number of these tools could not be identified until cast reproductions were made from concretion molds at Texas A&M's Conservation Research Laboratory. The following tools, whole, partial, and replica, were recovered from the wreck site. Described in this section are: 54 wrought-iron axe heads originally packaged in wooden crates (8SJ3478-59,60 & 61), as well as evidence for two types of shovel blades in fifteen examples, and two wooden tool handles (8SJ3478-54 & 55-01).

Specialized tools include: two possible drawknives (8SJ3478-55-03 & 64); a pointed "tuck" trowel for smoothing mortar (8SJ3478-61-03); a long handled gouge (8SJ3478-8SJ3478-53), and nine files and one file "blank" (8SJ3478-03) recovered wrapped in a fabric bundle.

Boxes of Axes (8SJ3478-59,60&61)

Three wooden crates that carried a total of 54 felling axe heads were recovered from the wreck of the *Industry* in August of 1999. The boxes were on the southeastern side of the mass of cannons and anchors (see Figure 7-2). Two boxes 8SJ3478-59 and 8SJ3478-60 were sealed and intact. Box 8SJ3478-61 had apparently broken on impact and consisted of two remaining wooden box sides, still holding a large concreted mass of iron. The boxes were rectangular, fastened with small iron nails, and bound with wooden withy, or flexible wooden battens. Though the fasteners are gone, impressions left in the wood show the withy was attached with wrought iron tacks that ranged between 0.25 cm (0.1 inch) and 0.40 cm (0.16 inch) square at the top of the shank. The holes where fasteners were used to seal the box measure 0.5 cm (0.2 inch) square.   The intact crates were identical in dimensions: 37cm (14.6 inches) long, 24.5cm (9.6 inches) wide, and 20 cm (7.9 inches) high. One box (8SJ3478-60) was clearly labeled on its top; three cursive lines written with black ink read: "No. 5, Ilinoise, Ax's 20". This writing survived cleaning and conservation. Box 8SJ3478-59 showed faint signs of a label that read "No. 2" and possibly "Illinoise" and "Ax's 20" when first recovered, but no discernible markings were visible after an initial series of fresh water rinses.   Box 8SJ3478-60 is shown in Figure 7-5.

Figure 7-5. Wooden Crate 8SJ3478-60

All three crates were wet-transported to Texas A&M. In 2000 they were completely documented and excavated in the laboratory. The intact boxes did indeed contain 20 axe heads apiece, originally packaged in brand new condition. The opened box held only 14 axe heads, but the concretion mass conglomerate held a number of disparate items, including 26 .69 caliber lead shot (8SJ3478-61-01), 16 brass straight pins (8SJ3478-61-02), and a trowel with a wooden handle and broken blade (8SJ3478-61-03). Crate 8SJ3478-60 also contained five lead .69 caliber shot (8SJ3478-60-21). These shot probably entered the box after deposition, through one on the holes on either end that would have held knotted-rope handles (see Figure 7-6).

Figure 7-6. End View of Crate 8SJ3478-61

The axe heads were all similar in size and shape, with slightly different final measurements recorded. The exact details and measurements of each axe appear in Appendix C. Most, but not all of the axe heads were stamped with a maker's mark, the name "R.Boyd" below a pair of crossed axes. Figure 7-7 shows a typical axe and the marking in detail.

Figure 7-7. Typical American Style Felling-Axe (8SJ3478-61-17) and Closeup Detail of the Maker's Marks Found on the Axes from the *Industry* Site (Photos by Amy Borgens Cramer)
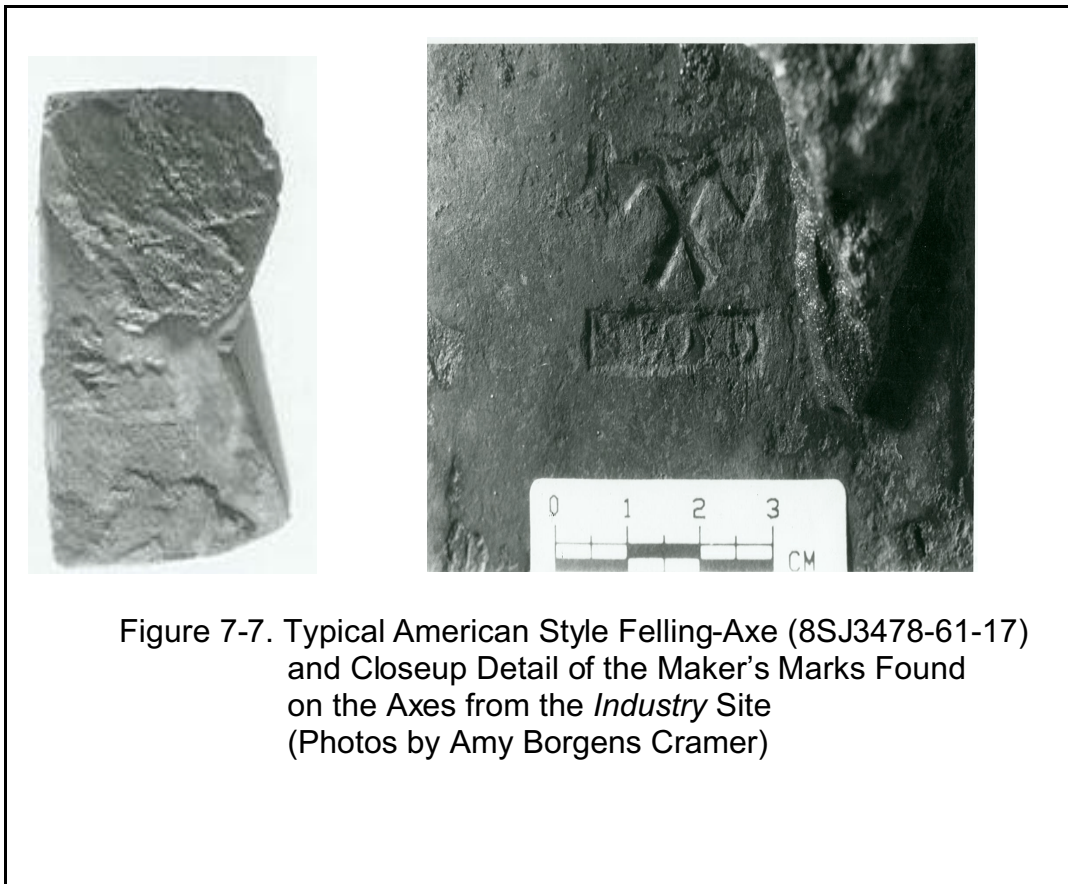
The maker's mark was apparently stamped into the blade with two separate dies: the letters and the axe pair. Some axes were only marked with the name BOYD or a portion of the letters that comprise it. The mark appeared on the port side of the axe head on 49 of the axes, and the starboard side on three axe heads (8SJ3478-60-02,03 and 61-08). On axe head 8SJ3478-61-08

the words stamped onto the axe head were flipped backwards.

The average axe head's measurements are 19.0cm (7.48 inches) long, 10cm (3.94 inches) wide at the blade, and 7.8cm (3.07 inches) wide at the base end, or poll. The average width of the axe heads recovered was between 3.0cm-3.4cm (1.18-1.34 inches). All of the axe heads weighed between 2.0 and 2.7kg (4.5-5.0 pounds) after they had completed their conservation treatment (including wax coating.)

The wear of the iron as the axe heads corroded allowed the method of construction to be determined, since corrosion products seemed to follow the grain where the axe head was worked during construction by the blacksmith. Figure 7-8 shows two methods commonly used to construct an axe head.

The axes recovered from the *Industry* site were made in the fashion shown on the left. A single piece of iron was worked into a pattern and folded flat around a stock handle. A steel wedge (to form the bit) was inserted before the blade was hammered flat to hold a sharpened edge longer. Earlier axe head versions were typically larger and heavier, using momentum to force a blunt blade to cut. As steel bits became common, axe head design grew smaller and more compact (Heavrin 1982:46; Franklin 1992:39).   A poll, the blunt end of the blade which grows progressively larger behind the eye through time, uses weight to balance the head and increase swing efficiency. Steel bits were seen in colonial American axes as early as the seventeenth century (Beverly Straub 1991, personal communication with the Jamestown, VA (ca. 1607-1699) curator in Franklin 1992:39).
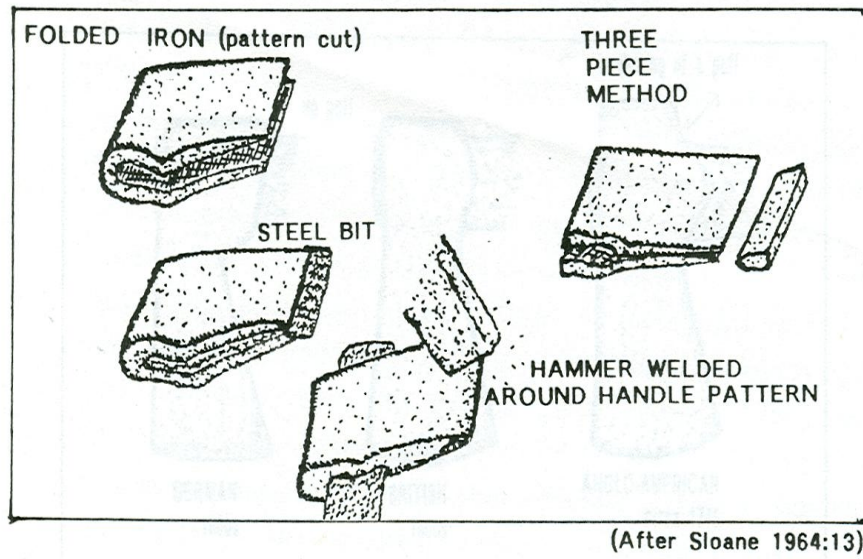
Figure 7-8. Two Methods of Axe Head Construction (Franklin 1992:40)

Unlike the axe on the left in the illustration previously shown, the poll on the *Industry* axes was hammered until sharp, right-angled edges were created. The steel wedge inserted during construction on the axes from the *Industry* site was only visible on five of the fifty-four axes (8SJ3478-60-07,15,16,18 and 61-08). All of the axes that had been packed in the crates seemed to be in brand new condition and had never been sharpened. The reason the steel bit was visible on the few examples cited above was either because corrosion had worn away the outer later of iron at the blade, or a portion of the bit was visible on the bottom of the head in the folded crease of the blade.

Axes were constructed in this fashion, singly, by an individual craftsman, until the nineteenth century when technological advances made mass production of cast steel axes heads possible (Kaufman 1954:18; Franklin 1992:39).

The axe heads recovered from site 8SJ3478 are identified as American style, because of the presence in the pattern of a slight poll, with pointed lugs or "ears" that are below the eye to help hold the head onto a wooden handle. Figure 7-9 shows two views of a typical axe head recovered from site 8SJ3478. Figure 7-10 shows the distinctive changing shape of the British-influence on the colonial American axe head.

Figure 7-9. Axe Head 8SJ3478-61-17 in Plan and Profile View

Figure 7-10. The Evolution of the Axe Shape (Franklin 1992:41)
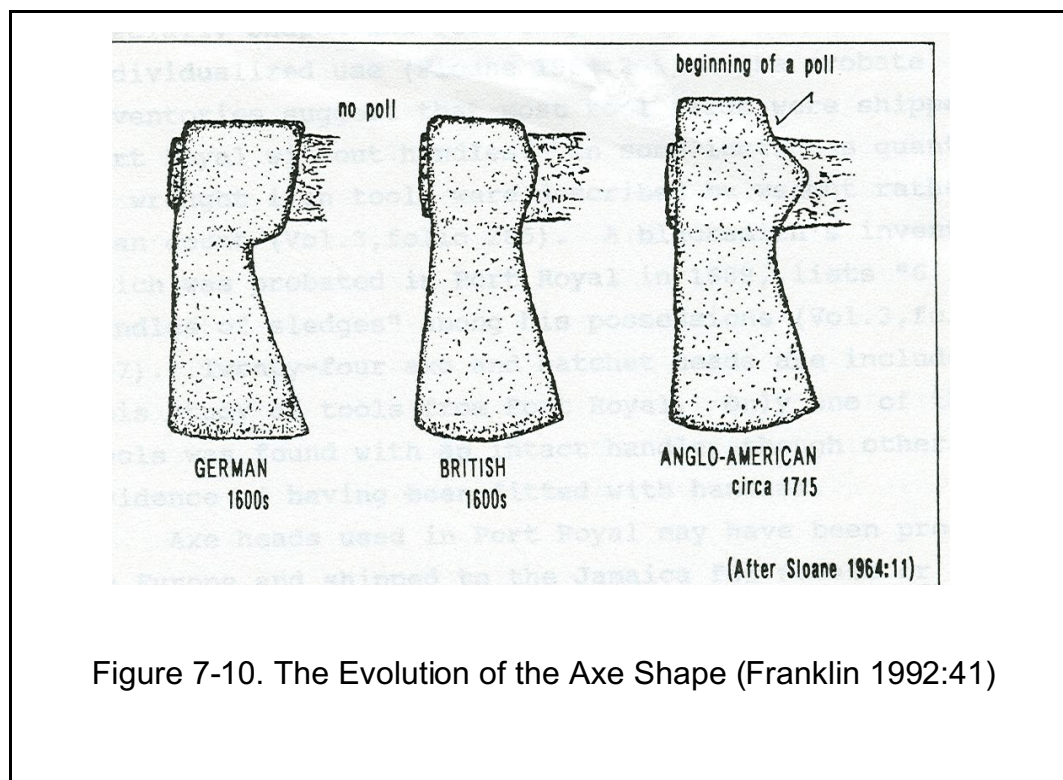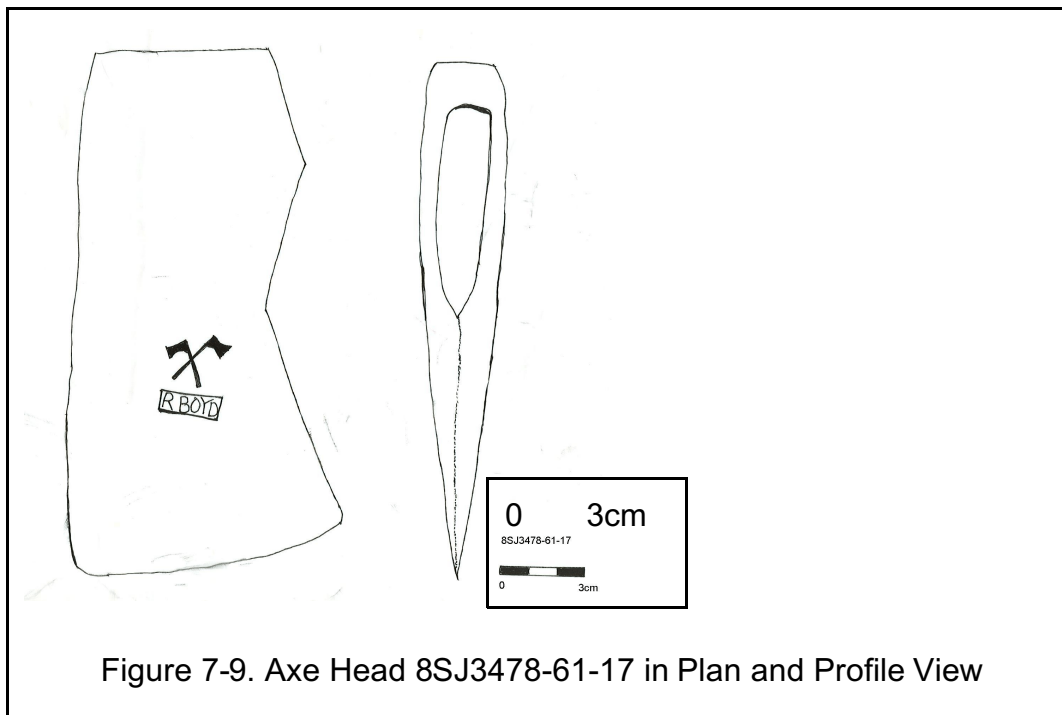
The axe blades packed in crates 8SJ3478-59, 60 and 61 are identified as felling axes, rather than broad axes, because of their distinctive shape. This means the axe heads were meant to be used more for pure cutting and trimming, than they would be for "hewing" or shaping. Felling axes are traditionally sharpened into a "knife" edge for use on both sides of the blade. Broad axes are sharpened on one side to a chisel-edge, and are usually twice the width of a felling axe (Mercer 1929:85; Sloane 1964:14-18; Franklin 1992:39).

The felling axe heads recovered were small and utilitarian, fitting in quite nicely with the mission of the *Industry* to deliver artificer's tools to the army sent to protect and inhabit England's new frontier. In 1764 the British Corps of Engineers (established in 1717) oversaw Artificer Companies consisting of contracted civilian artisans and laborers who undertook the work of construction upon occupation.

The marking of the axe's maker, R. Boyd, probably refers to a New York blacksmith identified as Robert Boyd in a will dated 1757 (*1896 Abstracts of Wills Vol V 1754-1760*:219). The blacksmith's cousin, Samuel Boyd, names Robert his executor. The Boyd family had settled up the Hudson River in the town of New Windsor (then Ulster, now Orange County), New York. Robert Boyd (1734-1804) was a blacksmith who moved into New York City after inheriting a bachelor Uncle's fortune (1781 Will of Robert Boyd, New York Historical Society 1905; Richard Boyd 2005, personal communication). One of Boyd's descendants, another Robert Boyd, later became the first president of the newly formed New York General Society of Mechanicks and Tradesmen in 1785 (Janet Wells 2005, personal communication). Boyd's family, always in ironwork, turned an operating forge in New Windsor into one of the earliest tool companies in the nineteenth century.

The markings on the numbered axe crates, "Illinoise, Axes 20" also need to be examined. Crates marked with ink were a standard method of shipping goods during this time period. A common item published in contemporary newspaper accounts often describes the initials, number, and markings on a box

that is missing or has been found, such as "Brought by mistake to a wrong place, a Box of merchandize, mark'd M (over a W I). No.15, with a Figurance" (NYG 12/03/1762,No. 212).

While the marking "Illinoise" was at first puzzling, again a contemporary newspaper published an account that shows that the newly acquired territory the British Army was sent to occupy, was being settled with goods and troops sent from New York. The route described by Lt. Colonel Robinson, Deputy Quartermaster-General, included coastal shipment to St. Augustine, Pensacola, Mobile and then New Orleans, before the 22nd Regiment was sent up the Mississippi in bateaus, to take possession of the "great fort on the forks of the Illinois, Missouri, and Mississippi (rivers), which entirely secures our back settlements" (NYG 04/09/1764, No. 279). Presumably, the troops were sent by sea to avoid the need to cross hostile Native American territory. It was reported that Robinson's troops were told the journey up the river would entail "a voyage of at least 3 months, the navigation being very tedious, owing to the rapid current of the Mississippi, though the distance is no more than 1500 miles" (NYG 04/09/1764, No. 279). The boxes of axes were probably destined, as simply as their inscription describes, to be sent up the river to Illinois, and were intended to help to shape the new frontier.

Official records demonstrate the import of the *Industry's* lost cargo to the soldiers and settlers en route to occupy East and West Florida, and points north. When the *Industry* sank in May of 1764, a second chartered sloop was loaded, presumably as soon as a new cargo of weapons and tools could be gathered for shipment. The sloop transport *Anne* left New York for St. Augustine in July of 1764 carrying a replacement cargo of artificer's tools. Unfortunately, after being listed as missing for a few months, the *Anne* was officially reported lost off of Cape Lookout (North Carolina) in September of 1764 (Gage Papers: Ogilvie to Gage 2 September, 1764).

Shovel Blades (8SJ3478-29,30,50 & 55-01)

In addition to the axe heads, the *Industry* excavation yielded another tool common to the artificer. The mass of metal concreted to the six-pounder cannon (8SJ3478-01) included fifteen shovel blades: two single blades (8SJ3478-50 & 55-01) and thirteen recovered from two concretions:8SJ3478-29 & 30. Most of the shovel heads were similar: socket heads protruding from rounded blades. These blades has been packed for shipping and were still stacked when recovered. One shovel blade example was shaped with sharp square edges (8SJ3478-55-01), and notably, was recovered with a portion of its wooden handle intact.

The shovel blades alone typically ranged between 25 and 30cm (9.8-11.8 inches) long and all were nearly 21 cm (8.26 inches) wide at the shoulders. The sockets for missing handles measure 4.0 cm (1.57 inches) in both outer diameter and length protruding from the blade. The thickness of the blades varied due to metal preservation, and ranged between 0.6cm and 1.5cm (0.23-0.6 inches), though the thickest measurement may have been due to expansion of the layers of iron corrosion. These shovel blades were shipped without handles. Like other tools crafted during the eighteenth century, the blades commonly received their handles after receipt or purchase.   Figure 7-11 shows a reconstructed drawing of a typical shovel blade recovered from concretion.
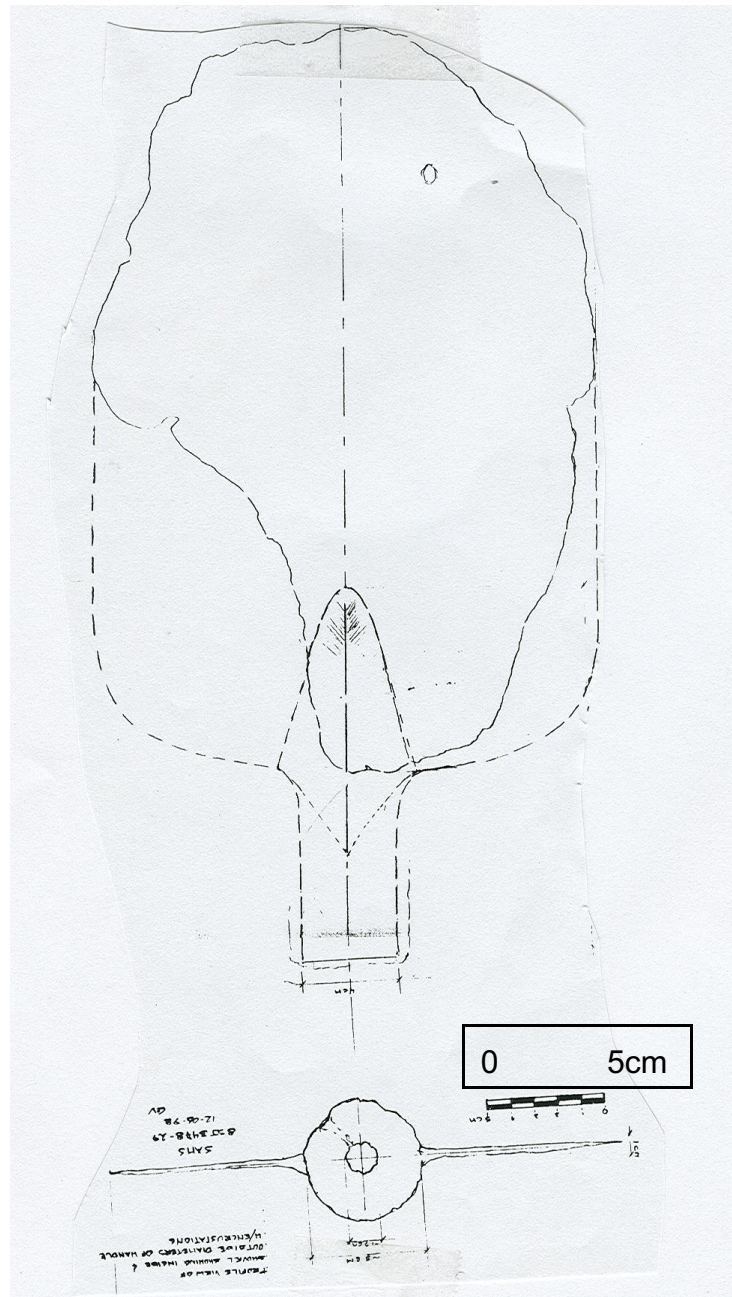
Figure 7-11. Typical Shovel Blade (8SJ3478-29-01) Recovered from the *Industry* Site (Drawing by G.N. Vigo)

Only shovel blade 8SJ3478-55-01 was hafted for use before deposition. The handle recovered from the *Industry* site on blade 8SJ3478-55-01 would not have fit into the socket of any of the other shovel blades recovered. The square shovel is similar to one recovered from the American gunboat *Philadelphia* (1776). The two shovel heads are shown in Figure 7-12.

The *Philadelphia* blade pictured was 38.1cm (15 inches) in overall length, with 8.9cm (3.5 inches) of socket handle protruding. The blade itself tapered slightly from 21.6cm (8.5 inches) wide at the shoulders to 20cm (7.75 inches) wide at the blade point (Bratten 1997:196). Blade 8SJ348-55-01 probably would have been similar in size to the *Philadelphia* blade and all of the others recovered from the *Industry*.

 Shovel blade shapes have not varied much throughout history; only the material and their method of construction changed to reflect the times. These shovels all would have been crafted individually by a blacksmith.   A blank of flat iron was hammered to form, with one edge bent around a handle form to create the socket, which in turn would strengthen the blade "by creating a supporting arch down the center" (Bratten 1997:196). When Bratten discusses the shovel blades recovered from the gunboat lost in Lake Champlain in 1776, he calls them "spades" , no doubt due to their flat shape. By definition a shovel is intended to dig, break up, and move dirt (a spade is sturdy with a flat blade for digging and cutting only).

8SJ3478-55-01   Shovel from the *Philadelphia*
                                        (Bratten 1997:307)

Figure 7-12. Square Shovel Remains 8SJ3478-55-01 with Blade
              Recovered from the American Gunboat *Philadelphia* (circa
              1776)

A survey of Lake Champlain waters undertaken in 1992 and 1993 located a number of Revolutionary War era artifact scatter sites. Two of these sites, Features 3 and 4 off of Mount Independence, contained 19 similar shovels and two spades, most hafted (McLaughlin 2000:100-102).   McLaughlin identifies those spades with short handles as entrenching tools. The slightly curved blade shapes recovered from the *Industry* site (8SJ3478-28,30 &50) are very similar to modern entrenching tools issued to the American military today. These blades could have been fitted with a short handle for easy personal transport, or a longer handle for moving large amounts of earth quickly and efficiently. No doubt the shovel blades recovered from site 8SJ3478 were destined for the British Army artificer's sent to the Florida's frontier.

Knives or Drawknives (8SJ3478-55-03&64)

Two examples of knife blades were recovered from site 8SJ3478, numbered 55-03 and 64. Since the tools were incomplete, it is not known whether originally they were two-handled drawknives, as suggested by their shape, or merely examples of a single knife blade. A drawknife is a tool used by the woodworker to remove excess wood. The tool was originally called the "draft shave" or "drawing knife" because two outside handles pulled a sharpened blade towards the craftsman (Sloane 1964:38-39). Variations of the tool are shown by Sloane in Figure 7-13. The drawknife was very common from ancient times throughout the nineteenth century. The shape of its blade described its specialty use.
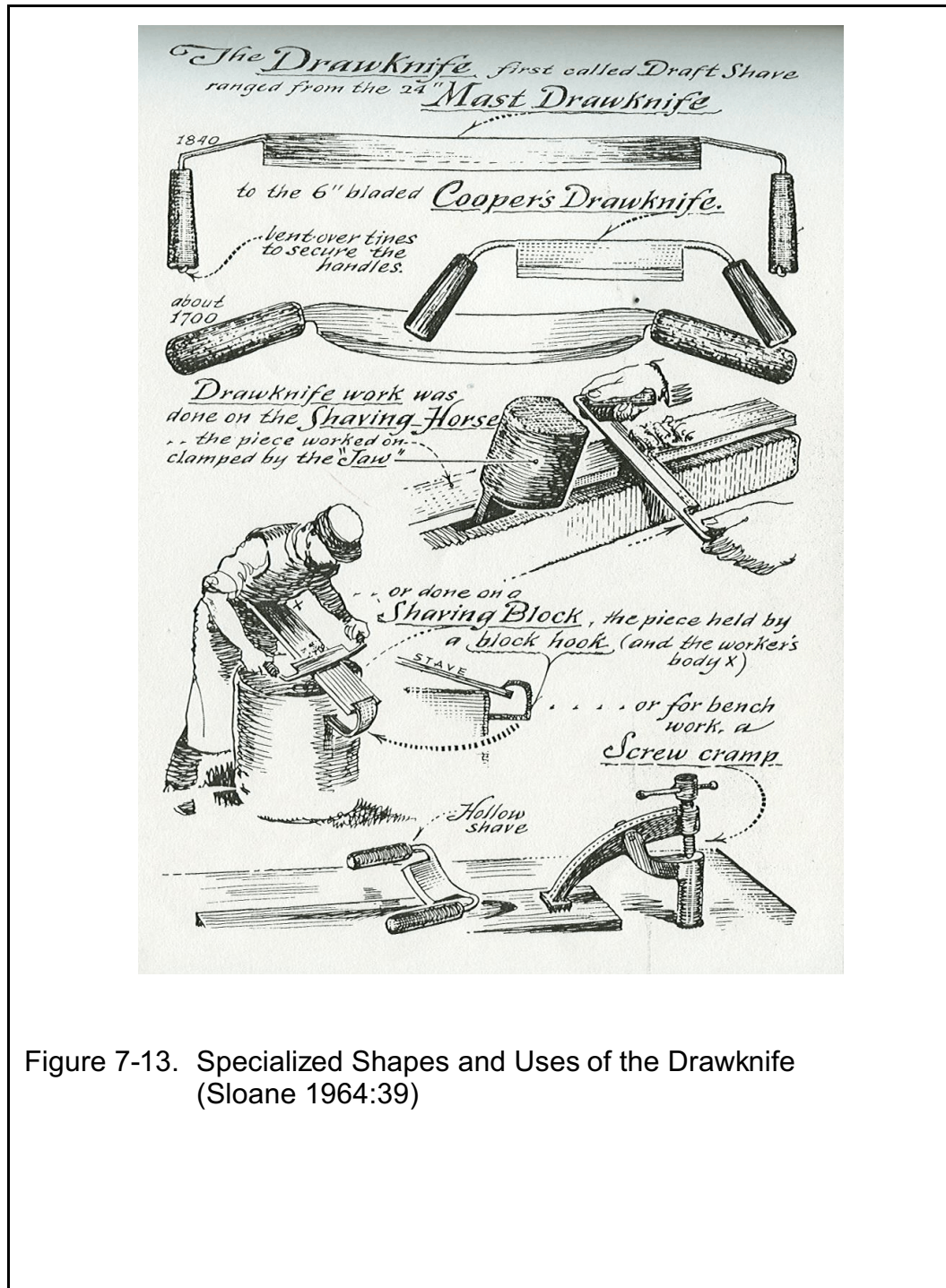
Figure 7-13. Specialized Shapes and Uses of the Drawknife
         (Sloane 1964:39)

The first blade recovered from the *Industry*, 8SJ3478-55-03, was part of a concretion that also held a square-shaped shovel, or spade (55-01) and a bovine *ulna* bone (55-02). The preserved blade measured 14.5cm (5.7 inches) long, by 3.8cm (1.5 inches) high, and 0.5 cm (0.2 inches) thick. A broken tang portion measured 3.3cm(1.3 inches) tapering from 0.4 cm to 0.2cm (0.16-0.07 inches). The angle of the tang before breaking was approximately 45 degrees. A wooden handle may have once been fitted onto the tang. The blade's shape and the angle of its handle was small, suggesting a specialized use (see Figure 7-14).

8SJ3478-55-01   8SJ3478-64

Figure 7-14. Blades Recovered from the *Industry*

The second blade recovered was adhered to the bottom of a cast-iron cooking cauldron (8SJ3478-38). Blade 8SJ3478-64-01 (Figure 7-14) has a preserved total length of 24 cm (9.45 inches). Approximately 4cm (1.57 inches) of the blade was covered with a woven rope-fiber handle. The blade's width at center was 2.6cm (1.02 inches), tapering to 1.8cm (0.7 inches) at either end. The blade thickness varied between 0.8cm (0.31 inches) at center, to 0.6cm (0.19 inches) at either end. A section of woven fiber (now mineralized) was discovered wrapped around one end of the blade, but the blade's taper suggests that there may have been a missing handle from the other end. This indicates that the blade may have been used as two-handled drawknife. These blades may have been used for scraping hides, or associated with butchery, since both were found in proximity to bones.

Trowel (8SJ3478-61-03)

Another specialized tool was recovered from the iron conglomerate adhering to the broken axe crate numbered 8SJ3478-61. After careful cleaning, a wooden handle with an iron trowel blade and tang still inserted *in situ* was identified (8SJ3478-61-03). The tool was documented, removed from its concretion, and recorded in the lab at Texas A&M. The iron remains were feared to be slightly unstable, so an epoxy cast replica of the tool itself was made before separation and conservation treatment. The tool's blade, which was small and rounded, was bent from an iron pointed tang that was inserted into the center of the wooden handle. The tool's handle was worn with use and shaped softly to fit the curve of a hand. Figure 7-15 illustrates the tool and the cast replica for detail. A sketch made pre-treatment appears in the lower right-hand corner to show the curve and shape of the blade.
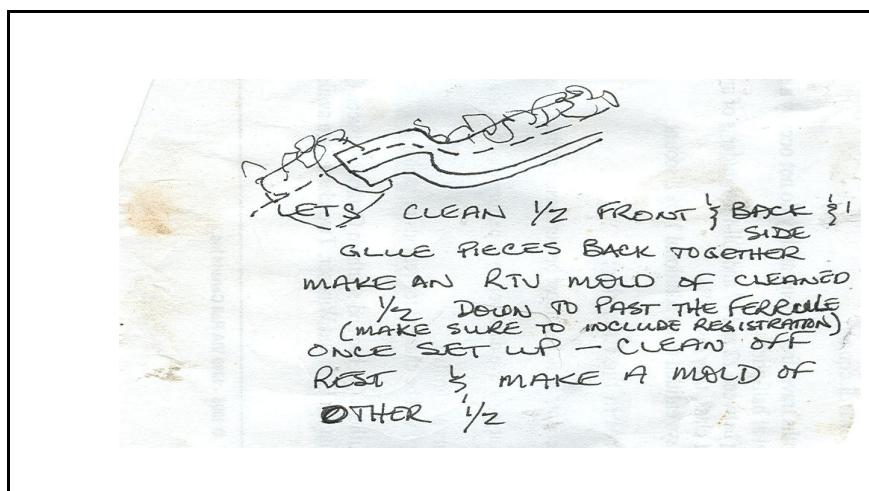
Figure 7-15. Trowel 8SJ3478-61-03 Being Re-Assembled; Cast Replica Blade is also Shown. A Sketch Made Pre-Casting Illustrates the Shape and Curve of the Blade (casting & sketch by Dr. Helen DeWolf, Texas A&M, CRL).

One identification for the tool was suggested by the small shape of the blade, a "tuck pointing trowel" used for smoothing mortar between bricks. Trowels of similar size and construction are shown as early as 1703 in Moxon's *Mechanick Exercise's* (1969:237). The same tool, designed in the same method, appears in current tool catalogues. The insertion of the tool's tang into the carved wooden handle, then ringing the handle with an iron band or ferrule, was and is the common method for hafting a trowel.

Gouge (8SJ3478-53)

A single encrusted gouge, found near the swivel gun, was probably used for removing wood turned in a lathe (8SJ3478-53). The tool was called either a lathing gouge or a turning gouge. The overall length of the gouge tool is 45.72cm or 18 inches (see Figure 7-16). One half of this length is a square shanked solid iron handle (with beveled edges) that is 22.9cm (9 inches) long, the other half is a gouge blade. The blade's width is a half-circle in cross-section, 2.54cm (I inch) wide and 0.25cm (0.09 or 1/16th of an inch) thick. Gouge blades are still commonly sized and described in exact increments of inches (1 inch, 1 ½ inches, 2 inches).

The gouge recovered from the *Industry* site was crafted from a single piece of worked iron. The portion of the blade that had been hammered flat around a form to create the semi-circular gouge shape, eroded more quickly when submerged, hence the need for casting. The end of the blade, preserved only in concretion, seemed to have a rounded head at the end of the handle shank. This may have been to help drive the blade with a mallet if the gouge was also used as a carving tool for removing wood.

Figure 7-16. Turning or Lathing Gouge 8SJ3478-53

Salaman (1997:144) identifies this tool as a gouge for "turning softwoods, and for ordinary work in hardwoods", and states that gouge blade tips commonly range in cross-section width between one-quarter to two inches (0.64 to 5.08cm).   A gouge blade is used to quickly remove wood, or smooth hollows. The excessive length of this tool is explained by Moxon, who in a 1677 version of his treatise explains that wood-turning chisels and gouges can be differentiated from the regular carpenter's tools "by being in general longer in both blade and tang". Moxon states that the wood-turners tools are fitted with "an uncharacteristically long handle" so they may be clamped under the armpit of the craftsman, in order to steady the tool as it is used (in Salaman 1997:144-145).

Files (8SJ3478-03)

A bundle of iron files was recovered concreted to the bottom of the cannon (8SJ3478-01), just forward of the trunnions. The files were wrapped in an organic fiber tentatively identified as flax (*cf. Linum usitatissimum*) (Lee Newsom 2003, personal communication). After mechanical cleaning and initial

electrolytic reduction nine triangular rat-tail files (8SJ3478-02-08), and one file blank (8SJ3478-01) were identified. A file blank is a piece of steel cut into a file shape, but with no etchings yet made by the file-cutter. Figure 7-17 shows the two distinct types of files, and an estimation of the original size and shape of the triangular files.

The complete triangular file would have originally measured 24cm (9.45 inches) in length, and 1.9cm (0.75 or 3/4 inches) wide on each of its three sides. The sharpened portion of the file's face extended from a tail that was 2.54cm (1 inch) long and 0.4cm (0.16 inches) wide. The preserved lengths of the triangular files in the bundles ranged between 16cm and 24.5cm (6.3-9.6 inches).

The preserved file blank was 14.3cm (5.63 inches) in length. This blank is probably missing more than one-third of its original length, so the original file blank would have been close to the same size as the other files (24cm, or 9.45 inches). The file blank was rectangular in cross-section, measuring 1.9cm by 0.63cm (3/4 inches by 1/4 inch).

The triangular files were double-cut, with two sets of grooves cut at right angles. The file blank was stamped with the mark "SAMPSON" on one flat side. The "SAMPSON" marking disappeared during electrolysis, but three of the other files were found to have stamps on their handles that could be read only as a Large capital "T", with an "S H" above an "S P E" to the right.
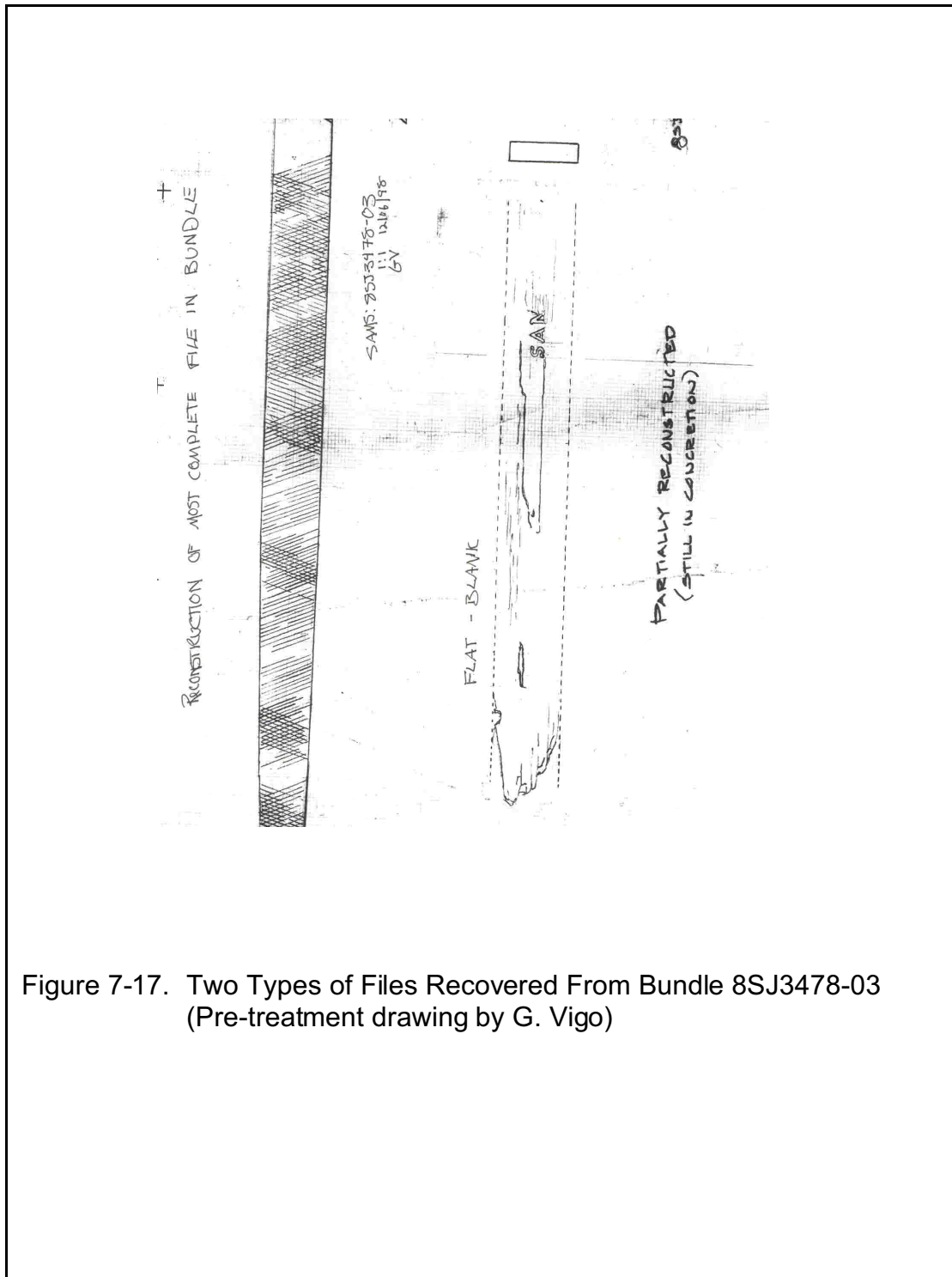
Figure 7-17. Two Types of Files Recovered From Bundle 8SJ3478-03
(Pre-treatment drawing by G. Vigo)

Files that are double cut, and files that are triangular in shape, are typically used to sharpen metal. Similar files today are often identified as saw files. The triangular files recovered from the *Industry* bundle (8SJ3478-03) were probably intended to sharpen metal edges, perhaps the blades of other tools. Rasps, shaped like files but with individual raised points placed widely apart, are traditionally used on wood only.

The files recovered from the *Industry* site originally were identified as iron. Research shows, however, that most files crafted during the eighteenth century were made from steel. By the seventeenth century, waterpower was harnessed to fuel both the blast furnace, and the mechanized hammers that were used to refine and shape mined iron ore into strong bars of iron (Clay 1984:52). Iron bars then were worked by the smith at his forge to craft individual tools (Franklin 1992:178-179).   A number of small steel works sprang up in England during the middle of the seventeenth century to capitalize on natural deposits high in carbon (Clay 1984:56). At the beginning of the eighteenth century, tool steel was merely iron mined with a carbon content that was greater than 2 percent (Blandford 1980:22-23). Later, in the nineteenth-century, techniques for forging true steel, as well as for mass-producing file blanks and then files, would be perfected. Until this period (approximately 1840-1860), most files in the Americas were crafted and shipped from Sheffield, England, which was the European file-making center (Arbor 1981:38). The files recovered from the *Industry* site were probably steel, crafted in England, and shipped to the colonies in America. The letters stamped on three of the triangular metal file handles may have contained the makers name, and the SHE may have originally spelled Sheffield. The high content of carbon may be one reason that the individual files deteriorated significantly underwater. No protective concretion formed around the file bundle *in situ*, instead, the worked metal merely disintegrated.

Wooden Tool Handle (8SJ3478-54)

After x-ray, a concretion recovered in 1999, proved to be a wooden tool handle, without the remains of any discernible blade remaining where the concretion bleed should have held the tool. The handle was mechanically cleaned and recorded. The remains of a channel that had held a square iron tool tang ran through the handle's entire length (12.5 cm or 4.9 inches). The iron tang appears to have been clenched where it once protruded at the bottom of the wooden handle. The handle is the right size and fits the hand's grip nicely for use as a small cleaver. The x-ray is shown in the tool catalogue in Appendix C. The tool may have been made of mild steel, which would explain the lack of any preserved tool concretion.

A second tool handle, similar in style and design, though slightly smaller in dimension (12.11cm or 4.77 inches), was recovered by LAMP archaeologists in 2000. That handle also had a channel through its entire length, and showed evidence of use (Morris and Burns, June 2001:24). Handle 8SJ3478-074 was recovered near axe crate 8SJ3478-60 (see Figure 7-2) and *in situ* millstone MS-C (Morris and Burns, June 2001:9).

Carpenter's Handsaws Recovered in 2000 by LAMP (8SJ3478-082-01,2 & 3)

Three carpenter's handsaws (8SJ3478-082) were recovered during the Lighthouse & Museum's 2000 field season. The saw blades, with wooden handles riveted in place, were concreted together, suggesting they too were stowed as part of the artificer's tools. The overall concretion measured 86.58cm (34.08 inches) in length. The handles were curved to fit the clasped hand of the user, and measured 4cm by 12 cm (1.6-4.7 inches). Each saw blade measured 16.5cm (6.49 inches) high, and tapered in width from .024 to .018cm (1/8 to 1/16 of an inch) from top to bottom, to hold an edge. The cuts faced rear, the saw designed for pulling, and contained four per inch, the standard measurement for a rip-saw (Morris and Burns, June 2001:25). The saw blades appeared unused, and were probably crafted from steel (Morris and Burns, June 2001:25).

IRON BARSTOCK (8SJ3478-02)

Pieces of iron barstock were scattered around the *Industry* site. Only one example was recovered, mechanically cleaned, and recorded (see 8SJ3478-02 in the Artifact Catalogue). The rest of the iron barstock was recorded and left *in situ* on the sea floor (see Figures 5-9 and 7-2). The barstock example recovered measured 91.9cm (36.2 inches) in length, had a maximum width of 5.08cm (2.0 inches), and a thickness of 1.27cm (0.5 inches).

As discussed above, during the eighteenth century, iron with impurities was mined and then pounded with water hammers to remove excess slag. The resulting iron bars were then heated and forged by the blacksmith to shape both tools and fasteners. Wrought iron was ideal for the toolmaker since the material was strong, malleable, and could be welded to iron or to steel to create edged tools. Cast iron, created by pouring molten metal into a form, was very brittle and therefore difficult to work (Franklin 1992:178). The iron barstock found all around site 8SJ3478 was probably serving a dual purpose: the metal could be cut and shaped into necessities by artisans on the Florida frontier, but the metal may also have served as ballast.

FASTENERS (8SJ3489-56,28 & 61-07)

The remains of three iron fasteners were recovered from the wreck site. A concretion recovered near the anchors, when cleaned, was identified as a wrought iron through-pin. The shank was bent and corroded in the middle. The fastener was 29.0cm (11.4 inches) long and tapered from 1.8cm (0.7 inches) to 1.2cm (0.47 inches) in diameter.   A concreted wooden fragment still attached around the pin's head measured 12cm(4.7 inches) long by 14 cm (5.5 inches) wide. The pin's head was hammered or "peened" flat, and measured 2.8cm (1.1 inches) in diameter.

A broken wrought iron fastener (8SJ3478-28) with a square shank and a six-sided rose head was recovered from the concreted mass of iron adhering to the six-pound cannon (8SJ3478-01). The fastener measured 7.8cm (3.07

inches) in length. The head's width was 1.8cm (0.7 inches) by 2.2cm (0.86 inches). The shank tapered from 1.2cm (0.47inches) to 1.0cm (0.39 inches). The tip of the shank was broken before deposition.

One other fastener was recovered from the wreck site. The partial remains of a concreted iron fastener mold (8SJ3478-61-07) was discovered in the mass of concretion in axe crate 8SJ3478-61. Though it could be determined that the concretion was made by a portion of a wrought iron fastener shank, not enough detail remained to make a cast or even take exact measurements. All of the fasteners observed on the *Industry* site were made by cutting and shaping lengths of wrought iron.

WHETSTONE (8SJ3478-58)

Half of a whetstone (8SJ3478-58) was recovered in 1999, near an *in situ* millstone (see Figure 7-2) and the crate of axes numbered 8SJ3478-60. The preserved length of the whetstone (see Appendix C for photo) measures 5.7cm (2.24 inches) in length, is 2.8cm (1.1 inches) wide, and 1.2cm (0.47 inches) thick. The stone is a standard shape and size used for portable sharpening of knife blades or tool edges. No specific identification of the stone's material has been made to date. No diagnostic details were recovered from the artifact, other than the observation that the recovered whetstone half showed no significant signs of wear.

MILLSTONES (8SJ3478-04) & EXAMPLES LEFT *IN SITU*

One millstone was recovered, documented, and returned to the *Industry* site in 1997. The stone was located near the cluster of six-pound cannons *in situ* (See Figure 5-9). That stone was later recovered in 1998. After mechanical cleaning and a series of fresh water rinses, the stone was placed in a touch-tank as part of an exhibit on the grounds of the St. Augustine Lighthouse & Museum. The stone was 49.8cm (20 inches) in diameter, and 7.7cm (3 inches) thick. A square hole in the center of the stone measures 6.0cm (2.5 inches) on each

side. After mechanical cleaning removed a layer of marine growth, a series of cross-hatched markings were revealed on one side of the stone's face, showing that it had been "dressed" or cut to be used for milling. Also visible were the numbers (with dashes between) 0-3-0 above the central hole, and the letter "O" below it. The stoned weighed 38kg (84 lbs), which converts to three-fourths of a hundredweight, as the 0-3-0 mark may be interpreted (three-fourths of 112 pounds).

Two other millstones were observed and recorded *in situ* between 1997 and 1999 (see Figure 7-2). LAMP archaeologists recorded and plotted the locations of three additional millstones during the 2000 field season (Morris and Burns, June 2001:5). An illustration by LAMP archaeologist John W. Morris III shows the plan view details of all six *Industry* millstones, appearing as Figure 7-18.

As shown, the millstone's outer diameter measurements range between the smallest, MS-C (48.0cm or 18.9 inches), and the largest, MS-E (57.2cm or 22.5 inches) . All stones have a centered square mounting hole that is 8.0 by 8.0cm (3.15 by 3.15 inches).

Two of the other millstone from the *Industry* site have markings on their surfaces. The letters "H" and "W" were recorded, as well as the numbers "1-1-3" and "_-2-6". The numbers are probably the stone's recorded weights in hundredweight (Morris and Burns, June 2001:37). The purpose of the letters is not known, though they may have been intended for aligning the stones properly once they reached their destination. Of the *in situ* stones, observations of their single sides showed no record that these stones were etched with "land and grooves", nor did they show any indication of their being marked with letters or numbers (Morris and Burns, June 2001:36-37).   The thickness of the stones left *in situ* was not reported.
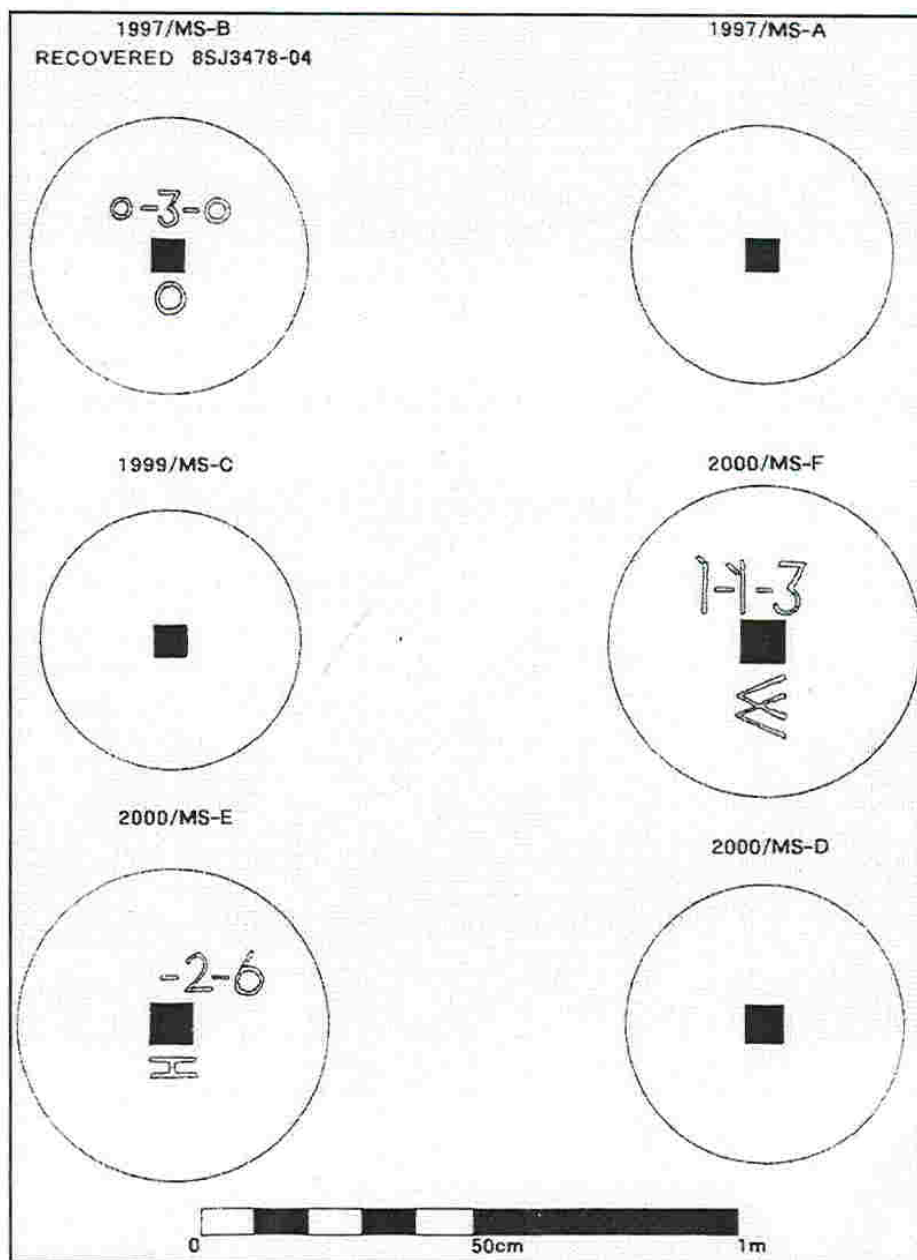
Figure 7-18. Six Millstones Recovered from Site 8SJ3478
(Drawing by J.W. Morris III, Morris and Burns,
June 2001:10)

Since the *Industry* millstones are small (standard water-driven millstones are typically 3.0 meters or 9.8 feet in diameter), they may have been intended for use in a small, portable, human or animal driven mill. (Phillips 2004, personal communication). The stones might have been intended to mill grain, or gunpowder. Philips notes that though water power technology was available in St. Augustine during this time period, portable mills may have been intended to be set up and used until water-powered grist mills could be constructed. There is also another possibility that the stones, no longer were used for milling, had been loaded onto the *Industry* as part of its ballast.

COOKWARE, FOOD PREPARATION, STORAGE AND CONSUMPTION

Several of the objects recovered from the site of the *Industry'*s loss at St. Augustine are related to its foodways, or the methods of acquiring, storing, cooking, and eating the provisions consumed by the vessel's crew. Almost all of these related objects were recovered within four-meters (13.1 feet) of one another, in a small area within the test trench where the cannons and anchors lay. Since this area of heaviest cargo was theorized to be at the vessels's midline, it is possible that the following goods may have been associated with an onboard hearth on the deck above, or stowed for future use. The fragments of bone, ceramic and glass could merely have been discarded into the vessel's bilges. Two of the objects described in the previous tool section as possible drawknives or knives (8SJ3478-55-03 & 64), may in fact have been used for food production, or butchery.

Cast Iron Pot (8SJ3478-38)

A large cast iron pot (8SJ3478-38) was observed in 1999, nestled among the pile of anchors where looters had used high-energy blowers to clear the site of overburden (see Figure 7-2). The pot was recovered with a variety of concreted materials on its inside and outside surfaces. The object was transported wet to Texas A&M's Conservation Research Laboratory. In Texas,

after a brief period of attachment to an electrolytic reduction setup to loosen the concretion, the outer surface area was cleaned and the pot underwent further electrolysis, with periodic cleaning, until it could be emptied. Concreted to the outside of the pot was a knife blade and handle (8SJ3478-64).

The *Early American Antique Country Furnishings* explains the difference between a kettle and a pot during the eighteenth century. A pot is described as "bulbous, and narrowed near the top, before flaring out" (Neuman 1984:176). This pot was a traditional cast iron shape (see Figure 7-19), wider at its middle than the top, with three reinforce rings around its middle, one just below its flanged lip. Two areas for "ears" protrude where an arched wrought iron handle, or bail, would have been attached. The pot originally had three legs on which to sit raised among the coals, but only two were still attached at the time of recovery. After cleaning, a stamped capital letter "B" was observed on the bottom of one foot. The pot was evidently cast in a seven-piece mold, since raised vertical and horizontal seams were visible on the pot's surface.

The pot stands 33.0cm (13 inches) tall, measures 30 cm (11.8 inches) at its upper inner diameter, and is 1.5cm (0.8 inches) thick. The remaining legs each measure 6.0cm (2.4 inches) in maximum length, and taper from 3.0cm to 2.0cm (1.2 inches to 0.8 inches) wide. The "ears" for the handles are right-angled, 8.5cm (3.3 inches) tall, protruding 2.0cm(0.8) inches from the upper pot flange.
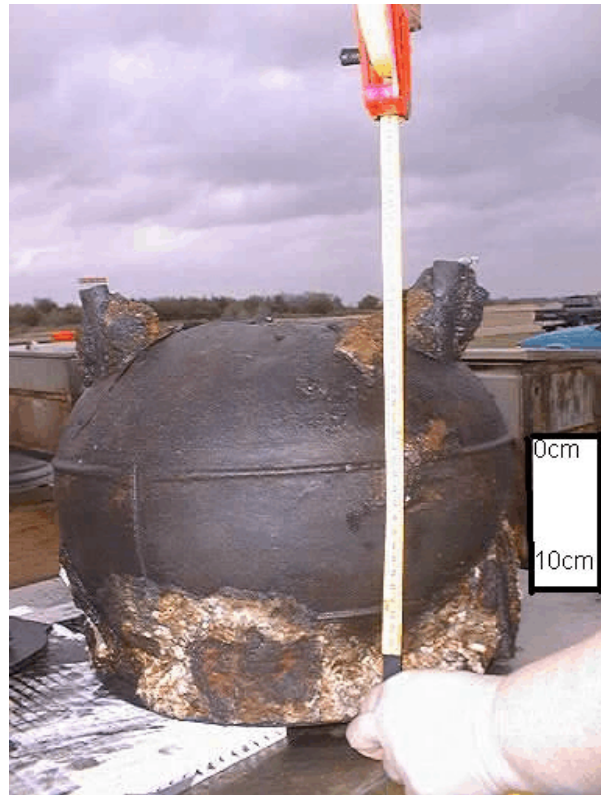
Figure 7-19. Cast Iron Cooking Pot 8SJ3478-38

The shape of this pot, flared above round, and just slightly ovoid, fits into Neuman's typology for pots at the date range of1740-1780. Called "the workhorse" of this period, the pot was evolving toward shorter legs since it was often hung from an iron hook or crane above the flames. The characteristic pointed "ears" later become rounded in the 1800s (Neuman 1984:176).

A pot of almost exactly the same dimensions and design was recovered from the lost 1776 gunboat *Philadelphia.*   Bratten describes the pot as an iron cooking kettle. The pot from the *Philadelphia* was recovered in situ sitting in the vessel's fireplace (Bratten 1997:200, 317). Figure 7-20 shows a recreation of the hearth onboard the gunboat which was created by the Smithsonian Institution (Bratten 1997:316). The *Philadelphia* was only 54 feet (16.45m) in overall length (Bratten 1997:1), and thus is a good comparative example to portray the size and type of hearth that might have been on board the *Industry*. Only one small brick fragment (8SJ3478-70) measuring 1.65cm by 1.75 cm (0.65 by 0.69 inches) square, was recovered by LAMP in 2000. The brick was slightly charred and may have been from the *Industry's* firebox (Morris and Burns, June 2001:20).

Figure 7-20. Recreation of the Hearth with Iron Cook Pot on
Board 1776 American Vessel *Philadelphia*
(Courtesy of the Smithsonian Institution from Bratten
1997:316)

Copper Tea Kettle (8SJ3478-47 & 52)

Three portions of a copper tea kettle were recovered in 1999. The pot's thin and flexible body was torn in half, but still had its pour spout and handle attached (8SJ3478-47). Some 0.9m (2.95 feet) away, the tea pot's base, and the bent ring from around its lid opening were discovered (8SJ3478-52). In 2000, LAMP archaeologists recovered the teapot lid (8SJ3478-82), concreted to three saw blades (Morris and Burns, June 2001:27). Figure 7-21 shows the tea kettle remains.

0   3cm

Figure 7-21. Copper Tea Kettle 8SJ3478-47 & 8SJ3478-52

Before being crushed, the original teapot probably measured 28 cm (11 inches) in overall height, and 26cm (10.2 inches) in width. The preserved dimensions are listed in Appendix C. The lid (8SJ3478-82) recovered in 2000 measures 11.38cm (4.48 inches) in diameter, and is 2.47cm (0.97 inches) thick (Morris and Burns, June 2001:27). The body of the pot is thin and fragile, with sharp, torn edges. The ring, spout, handle and base are all made from a thicker, heavier metal. The handle has three dots punched in a row on its underside. Each dot is impressed slightly deeper than the one before. This probably is an as yet unidentified maker's mark left by the kettle's crafter. Residue on the inside of the lid shows that the pot had been tinned inside (Jason Burns 2003, personal communication). Tinning of the inner surfaces is a standard practice when using copperware for cooking. Tea pots of this size and shape were in common use during the eighteenth century.

Pewter Plate Fragment (8SJ3478-42)

A pewter plate rim and base fragment (8SJ3478-42) was recovered from site 8SJ3478 in 1999. The original inner diameter of the plate's base would have measured 32.0cm (12.6 inches), with a rim measurement that is not precise, but averages 2.7cm (1 inch) wide. This suggests an original complete plate diameter between 37.0 to 38.0 cm (14.5-15.0 inches). This large size would actually allow this plate to be described as a charger, the term for a large pewter plate used as a base for serving. Pewter is a composite metal made from tin and copper with varying traces of lead. The preserved portion of this charger shows some bubbling on the surface, which is often the type of corrosion present on pewter that has been under water. The pewter rim fragment is pictured in Appendix C, the Artifact Catalogue.

Pewter tableware in the eighteenth century is often erroneously viewed as being used more by the society's upper echelon, than by the common men at sea; however, similar items often are recovered from maritime archaeological

sites. Evidence for six pewter spoons was recovered from the remains of the 1776 gunboat *Philadelphia (*Bratten 1997:201*).* Archaeologists excavating Blackbeard's flagship the *Queen Anne's Revenge*, lost off of Beaufort, North Carolina in 1718, have recovered four large pewter chargers 52cm (20.5 inches) in diameter, and two plates 24cm (9.5 inches) in diameter (North Carolina Division of Cultural Resources, 2005).

Ceramics (8SJ3478-37 & 1997 Surface Examples)

Only one ceramic sherd, 8SJ3478-37, a coarse earthenware body fragment with gray and orange paste was recovered during the controlled excavation of the *Industry* site. During the preliminary examination of the site in 1997 three sherds were recovered from the sea bottom beneath the gun tubes. These ceramics were identified as a coarse earthenware shoulder fragment, probably from a Spanish storage container or olive jar; a sand-tempered, gray-bodied Aboriginal sherd, and a fragment of *Colono* ware (Morris *et al* 1998:39). *Colono* ware is a term used to describe unglazed low-fired earthenware made in the Americas by Native Americans and/or African slaves during the seventeenth through nineteenth centuries.   It is not uncommon for ceramic collections recovered from shipwreck sites to contain items from more than one culture, due to the relatively long periods of ceramics' usage, combined with a sailing vessel's transient nature. The ceramics are pictured in the Appendix C artifact catalogue.

Glass (8SJ3478-48)

One sherd of dark green glass bottle base (8SJ3478-48) was recovered from the site in 1999. The fragment, so dark it may be characterized as "black glass", is part of a base with one side wall. The beginning of the pontil or kip where the bottle was blown is visible on the base. The sherd measured 7.0cm (2.5 inches) long, by 3.6cm (1.42 inches) wide, and its thickness ranged from 0.7cm (0.25 inches) in the center, to 1.0cm (0.4 inches) at the bottle's outer wall.

A photograph is shown in Appendix C. The shape of the base suggests a possible date range for the bottle. Using Hume's typology for English wine bottles, the shallow depth of the base pontil fits only one shape for the eighteenth century, one that is six-sided rather than round, and dates to 1740 (Hume 1985:66). This identification is not definite, and given the knowledge that the *Industry* is a colonial American vessel which departed from New York, another possibility exists. Hume points out that as early as 1739 immigrant glass maker's had set up a bottle factory in New Jersey (Hume 1985:60).

A second complete dark green bottle base was recovered by LAMP in 2000 (8SJ3478-76). This fragment was dated by Hume's typology to 1751 (Morris and Burns, June 2001:16-17).

Faunal Material (8SJ3478-51 & 55-02)

Two bones were recovered from the *Industry* site in 1999. One bone, 8SJ3478-51, has been identified as cf. *galliformes*, and is either chicken, quail or pheasant (Lee Ann Presley 2000, personal communication). This bone was found loose beneath the crossed anchors (see Figure 7-2), close to the iron cook pot (8SJ3478-38). The bone does show evidence of having been broken or chewed on at the hollow for marrow. The recorded dimensions and a photograph of 8SJ3478-51 are shown in Appendix C.

A second bone (8SJ3478-55-02) was recovered from the concretion that held the remains of a square iron shovel blade with a wooden handle (8SJ3478-55) and the other broken blade (8SJ3478-55-03). This bone has been identified as a bovine or cow *ulna* or knee (Lee Ann Presley 2000, personal communication). This bone (details and photograph appear in Appendix C), also shows signs of having been butchered before deposition.

Only three other bone fragments that may represent foodways at the site were recovered by LAMP in 2000, these have been tentatively identified as 8SJ3478-69: "possible fowl or fish", 8SJ3478-77 "small fish vertebrae", and 8SJ3478-79 an "unidentified bone". No further identification or mention of

whether the bones show signs of consumption was reported (Morris and Burns, June 2001:17-18).

Lead Fishing Weight (8SJ3478-06)

A single tapered-triangular lead fishing "plummet" or net weight (8SJ3478-06) was recovered from the western end of the test trench in 1998. Measuring 7.8cm (3.4 inches) in length, the weight is shown in Figure 7-22. The hole in the top measures 0.2cm (0.08 inches) in diameter. It appears as though an earlier hole, higher on the weight, wore through where the lead was thin, and a new hole was then made.
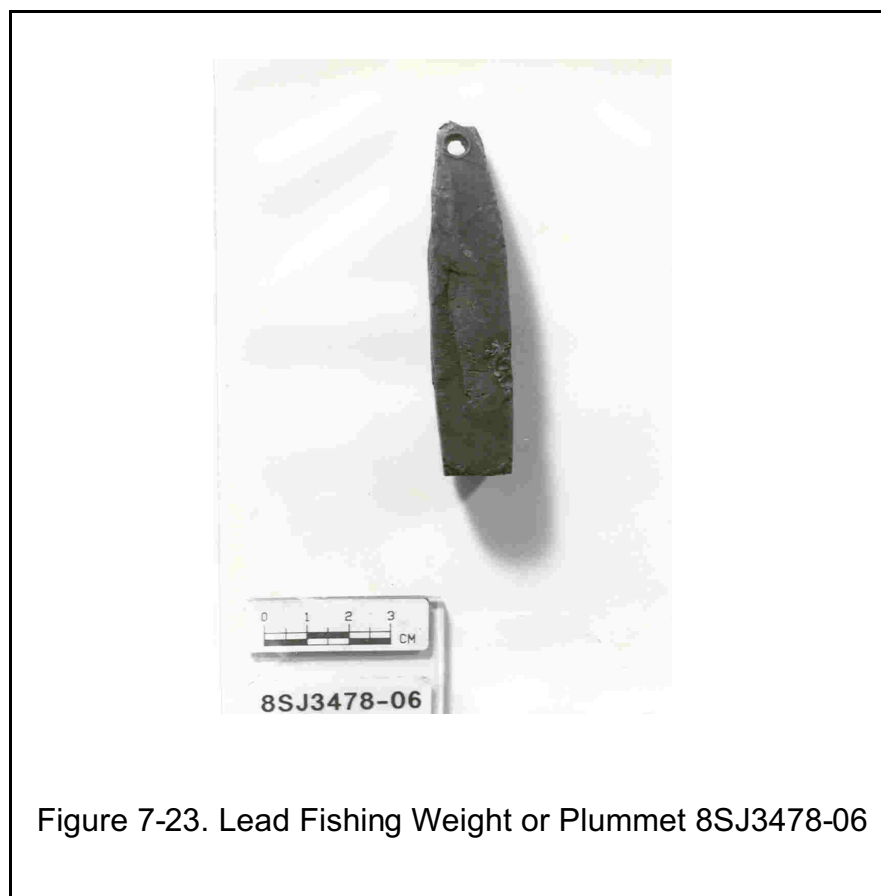
Figure 7-23. Lead Fishing Weight or Plummet 8SJ3478-06

<u>PERSONAL ITEMS</u>

A few items that may have belonged to the *Industry* crew have been recovered from the site. The broken open wooden axe crate, 8SJ3478-61, held the remains of 16 brass wire straight pins (8SJ3478-61-02), as well as one silver button (8SJ3478-61-09). A pewter button (8SJ3478-30-07) was also recovered from the mass of concreted iron that was affixed to the recovered George II six-pounder cannon (8SJ3478-01).

Brass Straight Pins (8SJ3478-61-02)

Sixteen straight pins were recovered from the concreted sediment matrix, which was between the axes in the broken crate 8SJ3478-61. An example is pictured in Figure 7-23. All of the pins were constructed in the same manner. A single brass wire was cut straight, with a second piece of the same type of wire wrapped at least twice around one end, to form a head. The bottom edge of each pin appeared to have been sharpened. The pins were 3.1cm or just over an inch long. Two other brass pins were originally located on the outside of axe crate 8SJ3478-59, but did not survive conservation. These straight pins may have been loose in the bilges and then washed into the crates while they settled onto the sea floor, or possibly lost while the crates were being packed.

Figure 7-23. Brass Straight Pin (8SJ3478-61-02)
Recovered Among the Axes in Crate 8SJ3478-61

Hume notes that brass pins were usually tin-plated, and that quantities of pins are often found at historic archaeological sites. He also states that the wire-wrapped pinhead became common early in the seventeenth century. Typically the body pin was wrapped with a second wire piece, usually three times around, before the second wire was then "anchored by means of a treadle-operated stamp machine that spread the top of the shank". In 1824, a newly patented method to stamp out pins in one stroke took precedence over the wire-wrapping method (Hume 1985:254). Archaeologists working on Blackbeard's ship *Queen Anne's Revenge* recovered similarly constructed straight pins from their early

eighteenth-century site.   They point out that straight pins are a common find on shipwreck sites, and should not be seen to represent a female presence on board the ship in question (North Carolina Division of Cultural Research 2005). The pins from the *Industry* site may have been tin-plated, due to the unusual corrosion process observed on the examples that survived conservation. This combination of two metals of differing nobility, when subjected to seawater immersion, would make the object unstable.

Buttons: Silver Button (8SJ3478-61-09) & Pewter Button (8SJ3478-30-07)

A silver button (8SJ3478-61-09) also was recovered from the broken axe crate 8SJ3478-61, on top of axe 8SJ3478-61-08. Pictured in Figure 7-24, the button's outer diameter measures 2.08cm (0.82 inches). The button back has two holes, where expanding gases collected during casting could escape, and a wire eye loop either brazed or soldered in place.   A second smaller button (8SJ3478-30-07), similarly designed but cast in pewter, was discovered crushed between two of the shovel blades encrusted together (8SJ3478-30) on the bottom of the recovered six-pound cannon (8SJ3478-01). This button is drawn and its dimensions are noted in Appendix C. Though the surface is slightly pitted (due to its pewter construction), its face is plain.

Figure 7-24. Silver Button 8SJ3478-61-09
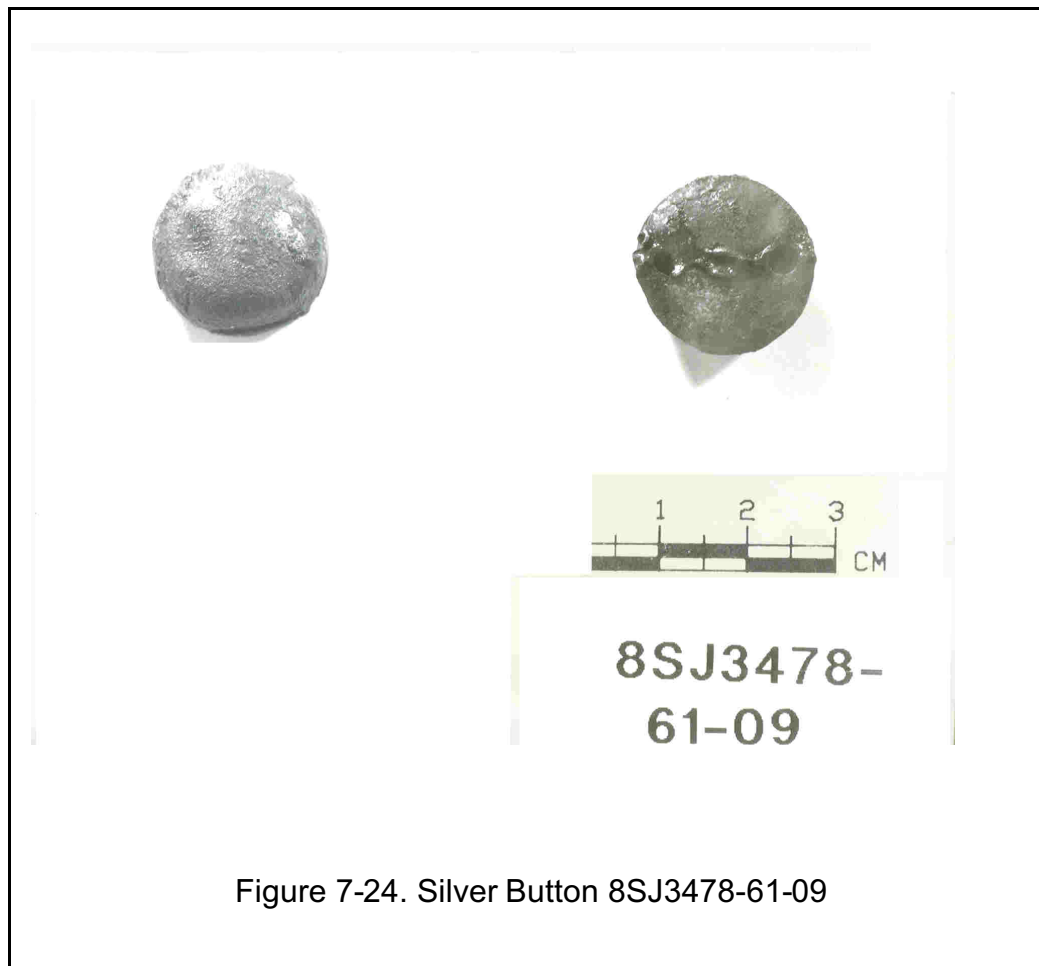
These examples follow Hume's statement about the button's evolution that "Hollow-cast examples, usually in white metal or brass, were the rule in the first half of the eighteenth century", noting that later examples were flat, often copper, and either engraved, gilded or plated for decoration (Hume 1985:89-90). Hume uses Stanley South's button typology from eighteenth- and nineteenth-century historic sites. The buttons from site 8SJ3478 would fall into the most basic early type (dating between 1726-1776: Type 2), with their soldered loops and holes for gas expansion on the reverse, and polished seams where the button's front and back meet (Hume 1985:90-91). Hume cites eighteenth-century historic advertisements that show tradesmen had set up businesses in

New York to market their colonial-made buttons. Hume goes on to state that colonial metal workers were probably casting "solid white-metal buttons (that) had been cast in sand or in two- or three-piece molds" through "most of the eighteenth century" (Hume 1985:93).

One other button (8SJ3478-90), identified as either silver or "tinned", was recovered by LAMP archaeologists in 2000, concreted to both a brass shoe buckle and a fastener concretion. This button was 1.65cm (0.65 inches) in diameter and 0.65cm (0.26 inches) thick (Morris and Burns, June 2001:19 and Appendix B). This button is also characterized by South's table in Hume as Type 2, dating to 1726-1776 (Hume 1985:91).

The plain-faced buttons recovered from the *Industry* were likely lost by members of the crew, or by local men packing and lading the ships for transport, rather than by members of the British Army being transported. By 1760 it was increasingly common for buttons worn by British Army officers to have been marked with their regiment.

MISCELLANEOUS OBJECTS

Two final objects that don't fall into any of the previous categories were recovered from the *Industry* site in 1998, a marble apothecary tray and a brass furniture hinge.

Marble Apothecary Tray (8SJ3478-05)

A small square marble base, with four equidistant circles carved from a larger central circle was found early in the initial inspection of the site, near the lead plummet (8SJ3478-06) and .69 caliber lead shot (8SJ3478-07-40). Measuring 12.0cm (4.75 inches) square, and 3.1cm (1.25 inches) thick, the base has a beveled edge carved around its upper face that is 0.1cm (0.04 inches) wide. The outer circles are all 3cm (1.18 inches) wide and 0.8cm (0.3 inches) deep. The larger central circle measures 5cm, or nearly two inches in diameter, and is twice as deep (1.6cm or 0.6 inches). The object remained unidentified as

it underwent public fresh water rinses for conservation in a "touch tank" on the grounds of the Lighthouse museum.   The marble tray was subsequently identified as belonging to an apothecary. It is similar to one recovered from a British 24-gun frigate *Pandora* (lost in 1791) in Australia.   Like the base from the *Industry,* the tray from the *Pandora* (MA-6351-0) is a marble slab, though it bears nine impressions of differing sizes, some round, some ovoid (Queensland Museum 2003). The impressions in the marble were used to mix and stir pharmaceutical herbs and powders.   The trays from the *Pandora* and the *Industry* may both be viewed in Appendix C

Brass Hinge (8SJ3478-11)

A copper alloy hinge with a single flange was recovered from site 8SJ3478 in July of 1998. The main plate of the brass hinge is roughly square, and measures 3.3cm (1.3 inches) wide by 3.6cm (1.4 inches) tall. The hinge plate is 0.1cm (0.04 inches) thick on its flat surface, with a rolled scroll that is 0.6cm (0.24 inches) in diameter. Three holes for fastening the main plate measure 0.7cm (0.27 inches) in diameter. The second part of the hinge is missing, with only two flat tab spaces in the flange remaining. The hinge is shown drawn and photographed in Appendix C. The brass hinge is unremarkable for distinctive identification purposes. It should be noted that it has been used, since faint impressions show where fasteners did once affix the hinge to a solid surface.

SUMMARY AND ANALYSIS OF THE COLLECTION

The collection of artifacts recovered from site 8SJ3478 by Southern Oceans Archaeological Research present an interesting range of objects being shipped as cargo, as well as items used by the vessel's captain and crew. It must be re-iterated that the artifacts recovered and presented in this report represent only a limited portion of the wreck site.   Neither SOAR's nor LAMP's work on site 8SJ3478 was a complete excavation. Only a limited test area was

completely excavated and documented. Several large objects, though mapped *in situ*, were left on the sea floor. The collection represents only a limited study of the objects that were on board the *Industry* when Daniel Lawrence wrecked his ship at the entrance to St. Augustine's harbour in May of 1764.

With these qualifications noted, what was recovered from the test excavations at the site may be examined as a whole. Initially, artifacts that were recovered were entered into a Geographic Information System, then sorted by several variables. When plotted by artifact composition, one fact became immediately apparent (see Figure 5-12).   Between 1997 and 2000, SOAR archaeologists were working in an area that was predominantly comprised of metal objects, and most of the objects recovered were iron. Since the site was originally located by its magnetic signature, this is not surprising.

The weight of the iron cannons and three stowed anchors, and the large quantity of iron they initially represented, may have settled quickly into the sand on the sea bed, and created a deep pocket that trapped and held the other artifacts that were recovered associated with the guns. The primary influence for the initial artifact deposition (and recovery) on this project was definitely the artifact's placement or stowage, within the lost ship.   Other elements that influenced artifact recovery percentages by type should also be considered. It should be noted that the sheer weight of the metal objects allowed them to settle quickly into a protective covering of sand overburden. The recovered artifacts' elemental composition are the second factor that influenced their survival. The smaller iron objects were protected by layers of marine encrustation that formed around them, inhibiting corrosion to some degree. In addition, molds were formed by marine encrustation on several of the smaller iron objects that had completely corroded, which allowed epoxy replicas to be cast to recover details of the lost artifacts.   Several lighter metal objects that were not iron, such as the copper tea pot, brass straight pins, or white metal buttons, were situated close enough to objects that would corrode more readily underwater, such as the ferrous iron cannons and anchors, or the crated axes. This allowed the smaller,

more delicate, and more noble, artifact surfaces to remain relatively stable after more than 230 years underwater. The only wooden objects that were recovered from the site, one tool handle and the axe crates, were so impregnated with iron corrosion products, that even though sampled, they could not be thin-sectioned for wood identification (Lee Newsom 2003, personal communication).

The *Industry's* hull was never located, through four field seasons of work on the site. This may mean that what was recovered represents a small portion of cargo that spilled when the vessel broke up on the sandbar. In his report on the vessel's loss to General Gage, St. Augustine's resident commander (and governor) Major Francis Ogilvie reported that the vessel's cargo had spread all along the coast (Ogilvie to Gage, 13 May 1764,Reel 1,Vol.18,6).

What is also certain is that the same conditions that influenced the vessel's loss, and the artifacts' deposition, has created such a strongly dynamic environment for work underwater that neither SOAR nor LAMP archaeologists could ever dig deeply enough to reach the bottom limits of the site using a controlled methodology. Only when looters found the site and stole two cannon between the 1998 and 1999 field seasons were several new portions of the artifact assemblage uncovered since the salvors used a mailbox to deflect their propeller wash. This then caused haphazard distribution of the lighter objects that were uncovered. Burns reports in LAMP's 2000 field season summary, that both .69 and .63 caliber lead shot were noted in their test trench, but only their extent was recorded, since "a broad random scatter, the result of looting of the site in 1999" was encountered (Morris and Burns, June 2001:11).

The following quantitative analysis includes only those artifacts recovered by SOAR. The artifacts were divided by category and quantity to view a percentage analysis of the collection as a whole. The following categories were used in the breakdown: Tool Types: 10; Armament Types: 2; Ammunition Types: 3; Fastener Types: 2; Types of Food and Foodways: 8; Personal Types: 4. Table 7-1 lists the quantity, type and description of the recovered artifacts. The percentage breakdown of the artifact types is shown in Figure 7-25.

TABLE 7-1

ARTIFACT TYPES RECOVERED FROM THE *INDUSTRY* BY SOAR

Qty.	Material	Type	Description
54	Wrought Fe	Tool	American Style Felling Axe Blades
1	Fe	Tool	Knife or Drawknife Blade Fragment
1	Fe, Cast Fe & Wood	Tool	Tuck Trowel & Wooden Handle
1	Fe & Fiber	Tool	Drawknife Blade & Handle
1	Fe & Cast	Tool	Gouge
1	Fe (cast) & wood	Tool	Tang & Handle of Cleaver
10	Fe	Tool	Files: 9 rat tail triangular & 1 blank in one fiber bundle
1	Wood & Fe Mold	Tool	Shovel Handle for Square Shovel
14	Fe	Tool	Shovel Blade (Spade) Fragments
1	Stone	Tool	Whetstone
1	Fe	Fastener	Through Pin (probably from hull)
1	Fe	Fastener	Rose Head Nail
1	Fe	Armament	British 6-pounder cannon
1	Fe	Armament	Swivel Gun, no markings, British Pattern
583	Pb	Ammunition	.69 Caliber Lead Musket Shot (In 30 lots)
9	Fe	Ammunition	6-pound cast cannon balls
1	Pb	Ammunition	Container for transporting gunpowder
1	Fe	Foodways	Cast Iron Pot
1(3)	Cu	Foodways	Copper Tea Pot (Body, Base & Base Ring)
1	Pb	Foodways	Fishing Sinker or Net Weight
1	Glass	Foodways	Bottle Sherd
4	Ceramic	Foodways	Earthenware, OJ, *Colono* ware Sherd, Aboriginal
1	Stone	Foodways	Millstone (*5 left in situ*)
1	Pewter	Foodways	Plate Fragment (Base & Rim)
2	Bones	Food	1 cow *ulna*, 1 chicken, pheasant or quail family
2	Silver & Pewter	Personal	Buttons
1	Pewter	Personal	Button
1	Brass	Personal	Brass Pins
1	Marble	Personal	Apothecary Tray
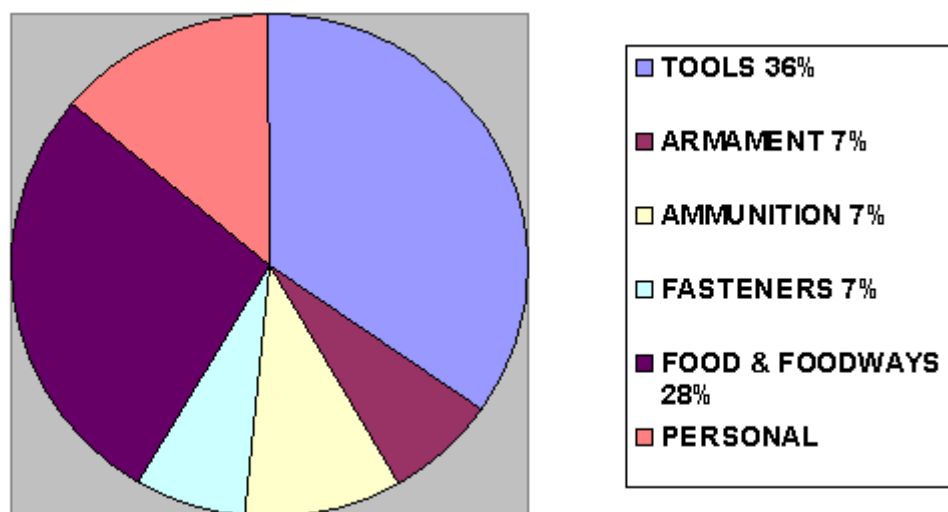
Figure 7-25. Chart of Percentages of Artifacts Recovered from the *Industry*
Site 1997-1999 by Quantity and Type

This chart provides a basic framework for analysis. The highest
percentage of recovered artifacts when examined by quantity and type are the
tools. If examined by quantity alone, arms and ammunition would predominate
the collection. This reflects the importance of both weaponry and wrought-iron
hand tools to the eighteenth-century settler and soldier. Not surprisingly, the
second-highest percentage of items recovered in Figure 7-25 is comprised by
food and foodways. The mixture goods recovered from the *Industry* that were
both English and colonial North-American made (tools), as well as ceramics that
were aboriginal, colonial, and probably Spanish, reflect the diversity of St.
Augustine, colonial North America and the Caribbean. As with any shipwreck

site, the ceramics may also indicate prior voyages of the *Industry* before the vessel sank. The final summary and conclusions chapter of this report will address these issues.

CHAPTER VIII

BRITISH TRADE AND SUPPLY TO ST. AUGUSTINE, FLORIDA

Spain's trade laws maintained exclusive control of commerce to and between Spanish colonies. Only Spanish goods could be shipped on only Spanish vessels; however, as would be expected, numerous ways were found to get around the laws. The export of Spanish gold or silver to foreign countries or their colonies was prohibited (Harman 1969:4). St. Augustine, because of its isolation, and the difficulties the presidio endured in obtaining adequate supply, was afforded special dispensation from the crown for trade outside of the standard legal restrictions, except in times of war, from the earliest times (Walton Memorial 1757; TePaske 1964; Harman 1969; Boniface 1971; Pickman 1980, Deagan 1983:35-37 and 2002:109).   When delivering goods to St. Augustine, supply vessels were often required, funded and scheduled separately, so they sailed independently of convoys. Accounts regularly bemoan the lack of supplies at the garrison due to the loss of supply ships that were attacked en route by both privateers and pirates (Deagan 2002:109).

English trade laws and the Navigation Acts of 1651 and 1672 specifically forbade direct trade between its New World possessions and other colonies and nations (Steffy 1988:116). It was a common practice, (especially in times of peace), for English vessels to conduct unsanctioned trade with the Spanish in their own ports at Florida, Cuba, and in the Caribbean (Harman 1969). Jamaica, English after 1655, provided a veritable free-trade marketplace for sailors and vessels from any nation with cash to spend, in spite of the official trade policy. Before the city was destroyed by earthquake and seiche wave in 1692, Port Royal merchants carried on an active trade that provided many of the manufactured goods supplied to New World Spanish colonies throughout the latter half of the seventeenth century (D.L.Hamilton 2005, personal communication; Franklin 1992).

The Treaty of 1667, and the 1670 Treaty of Madrid, created a loophole in

trade laws that allowed English ships to begin to visit Spanish harbours (Pares 1963:29-30). The 1670 'American Treaty' between England and Spain called for "the kind reception of English ships into Spanish-American" ports which allowed distressed vessels to seek shelter for either provisions or repairs (Davenport 1967:187-196). This opened the door for illicit trade between Anglo-American Caribbean and North American colonies with Spanish Florida.

Amy Turner Bushnell reports that by 1683, due to a shortage of supplies, the Spanish crown approved St. Augustine Governor Cabrera's "emergency" purchase of goods from a Captain Frederico, master of the *Mayflower,* out of New York (AGI 10-8-1683 *Santo Domingo* 226/111 in Bushnell 1981:89). The *Mayflower,* a Dutch sloop*,* allegedly put in to St. Augustine to take on water and firewood en route to Jamaica (Boniface 1971:206).   After the Dutch sloop was welcomed into port at St. Augustine, it was common practice for the vessels of other New York merchants to follow (Bushnell 1981:89).

The 1713 Treaty of Utrecht and the *asiento* contract (see Chapter III) created additional legitimate excuses for contact, which increased opportunities for illicit commerce between Spanish and English nationals in the colonies of North America and the Caribbean (Harman 1969:6).

 Illicit trade among Spanish, French, and English colonials was commonplace in the Caribbean throughout the eighteenth century. When home countries were at war, clandestine trade was brisk at neutral ports in the Caribbean (Pares 1963:388; SCG1759).   These transgressions were overlooked by English authorities, and trade with the Spanish colonies was often encouraged, to bring gold and silver into English circulation (Lanning 1936:126; Harman 1969:5; Pares 1963:416-417). An English newspaper account reports that when warships were ultimately brought in to clear out the harbour at Monte Christi on Hispaniola in order to shut down intra-colonial trade in 1759, "105 sail of merchantmen" were counted (NYG, 19 March 1759). An English pamphlet in 1760 (when England was at war with France, before Spain officially joined the conflict in 1762), argued that trade with the Spanish Main was justified since it

brought specie into the treasury; but trade with the French in the West Indies was to be discouraged since the trade payed out precious gold and silver into enemy hands, and discouraged legitimate business dealings with English plantations (Pares 1963:416).

Throughout the first two centuries of Spanish inhabitancy, St. Augustine regularly relied on the majority of its supply to be shipped in from outside the colony. Though isolated St. Augustine was already sometimes excluded from trade restrictions, the legitimacy loopholes no doubt encouraged more frequent visits from English merchants and foreign vessels seeking to exchange trade goods. Though quest for a share of the Spanish gold, silver and specie was no doubt the primary motivating factor. St. Augustine also developed brief periods of limited surplus goods available for export trade (Harman 1969:iv,5).

EXPORTS FROM ST. AUGUSTINE IN THE EIGHTEENTH CENTURY

Cattle ranching was prevalent in the Florida interior by the late seventeenth century (Boniface 1971:138-153: Amade 1959:9). Hides, tallow and naval stores were trade commodities officially exported to Cuba by 1700 (Boniface 1971:200- 209). Though most cattle ranches in the interior were eliminated after Moore's 1702 and 1704 attacks, records show that the Spanish continued to round up cows that still roamed wild. Trade and consumption of cattle-related products continued throughout the eighteenth century (Deagan 1983:38, 154).   Export of these goods, as well as a small trade in Florida citrus fruit, is documented early in the eighteenth-century. Fruit was shipped from St. Augustine to South Carolina and New York (St. Augustine Shipping Returns for South Carolina:1716-1763 and Cargo Manifests for New York:1732-1755 in Harman 1969:83-90). The first record of oranges exported from St. Augustine to Charles Town is in 1717 (SC Shipping Returns in Harman 1969:84). In the 1730s, the Florida orange trade was at its prime. From 1731 through 1739, when most trade was disrupted by the War of Jenkins' Ear (Harman 1969:23),

oranges were the single cargo item recorded for ships leaving St Augustine for Charles Town (SC Shipping Returns in Harman 1969:85-87). Florida's monopoly on exported citrus ended in the 1740s when the British in South Carolina began to cultivate and trade their own fruit (Pickman 1980:80).

The other exports from St. Augustine mentioned in the New York and Charles Town shipping records for this period are rum, Spanish sugar, cocoa, and sweetmeats (Harman 1969:83-90). All of these goods would have been originally acquired through legitimate or illicit trade in the West Indies, and then re-sold by merchants in Spanish Florida. A Florida industry that would process naval stores (pitch, tar, and spar timbers) for export was proposed in 1735 and reportedly implemented in 1756 (TePaske 1964:106; Pickman 1980:80). English shipping returns studied by Harman, however, do not support this information. The only goods known to have been exported from St. Augustine to New York and Charles Town between 1753 and 1760 are 10,000 feet of plank (1753 for New York) and a cargo of "17 sea tortoises" (1754 for New York) (Harman 1969:90). The success of the naval stores industry reported in Spanish documents could be the result of Spanish administrators' desire to rectify their continued reliance on outside support for supply. English shipping returns and cargo manifests for this period continue to show that many vessels leaving St. Augustine were empty, with a listing that reads "ballast only" (Harman 1969:83-90). Admittedly, this could be in order for English vessel captains and their owners to fail to mention that they were carrying forbidden or taxed foreign goods into their harbours. By this period, increasingly strict British trade laws heavily taxed the import of goods such as sugar, tobacco, indigo, ginger, and dyewood to encourage direct trade with English producers rather than purchase from cheaper foreign sources (Matson 1998:48049). This made these cargoes the ideal commodities for smuggling. Matson states that vessels trading from New York to Curaçao and Surinam in the 1720s shipped out listing cargoes of "Flower, pork, peas, and other provisions", but "the vessels that carry them to those places *pretend* always to return in ballast" (Matson 1998:207).

GOODS IMPORTED TO EIGHTEENTH-CENTURY ST. AUGUSTINE

In England colonial trade restrictions were originally addressed by Navigation Acts in 1650 and 1651. By the eighteenth century the English Board of Trade was regulating increasingly stricter tax regulations to discourage trade or the purchase of manufactured goods outside of England's control. New trade laws required that certain commodities be "enumerated." "'Enumerated' commodities were designated to be traded only with England, or to be re-exported through English ports, where merchants paid import duties and gained drawbacks of duties. Enumeration not only guided goods to market and secured state revenues; it also privileged particular shipping services and special-interest groups in England and addressed complaints against colonial smuggling with foreign enemies" (Matson 1998:44).

As contact between colonial outposts became more frequent, opportunities for inter-colonial trade among foreign nationals in the New World became more readily available. This prompted the Board of Trade to state in 1726 that "all of the products of the colonies for which the trade of Britain has a constant demand" be enumerated "to assist Great Britain in the balance of trade with other countries" (statement of Martin Baden to the Board of Trade, 1726, quoted in C.M. Andrews 1938 *The Colonial Period of American History: England's Commercial and Colonial Policy*, Volume 4:106 in Matson 1998:250 and 414). While some trans-Atlantic merchants valued these restrictions to maintain a trade monopoly, countless New York middle- and upper-level merchants began to focus trade on non-enumerated goods, and more loosely monitored coastal and Caribbean trade voyages, with legal and illicit cargoes (Matson 1998:250-264).

English shipping records show that between 1716 and 1753 St. Augustine received from Charles Town cargoes of imported goods that included basic items necessary for sustenance, such as pork, beef, flower, cheese, herring and peas (Harman 1969:83-88). European goods "per certificate", as

well as brandy, rum, wine, and spirits were also imported to St. Augustine between 1716 -1718 (Harman 1969:83-84). After 1735, exports to St. Augustine from Charles Town included liquor, dry goods, nails, pine boards, tallow, butter and "sundry Britts goods'. The manifests often actually listed the words "legally imported" (Harman 1969:86-88), which implies there was also the alternate method for trade, smuggling, taking place.   By 1753, before the British entered into the Seven Years' War, one New York manifest for a cargo destined for St. Augustine reads "60 tons provisions for landing only there conformable to Act of Assembly" , the cargo included "British plantation produce" and "European goods" (October 6, 1755, the *Lark* of New York, Masters Name: William Hyer (Harman 1969:90).

In addition to the Spanish need to trade with foreign nationals to obtain basic food supplies, many Spanish colonials believed that during the eighteenth century, English and Dutch manufactured goods were of better quality and less expensive than those from Spain (Harman 1969:5; Boniface 1971:206; Deagan 1983:35-36).

Before undertaking additional study of the specific nature of English supply from New York to Spanish St. Augustine, a brief description of the *situado*, the official Spanish colonial supply system for its colonies is in order.

SPANISH COLONIAL SUPPLY: *THE SITUADO*

Florida's *situado,* its government support consisting of supplies and money, was instituted even before the crown took over the colony after Menéndez's death in 1574 (Sluiter 1985:1; Bushnell 1994:43). Since St. Augustine was unable to support itself exclusively through agriculture or the export of precious metals, government subsidy for the ongoing maintenance of a military garrison (*presidio*), was standard Spanish procedure (TePaske 1964:6-7; Deagan 1983:34).

Before 1702 the subsidy was funded by a variety of New World sources

including the Royal Treasuries stocked by the Spanish convoy fleets from both Mexico City and Vera Cruz (Sluiter 1985:1-3). The Florida governor appointed an agent whose duty it was to collect the subsidy annually, as well as purchase necessary supplies for the garrison (Deagan 1983:35). The Viceroys in Mexico often delayed payment, and merchants in Havana, Mexico City, and Vera Cruz were known to inflate prices for goods destined for St. Augustine (TePaske 1964:78-79). These difficulties, delays in shipping, and the loss of vessels due to capture or shipwreck, all contrived to keep St. Augustine barely supplied. After 1702, in an attempt to remedy the corruption of the system, the source of the *situado* was switched to a sales tax fund collected in a small Mexican town called *Puebla de los Angeles*. Administration of the *situado* was removed from the control of the Viceroy, to be handled by a cleric of the church. Though the new *situado* initially worked more efficiently, with time the same problems reappeared (Deagan 1983:35).

The *situado* amount was based upon the number of places or *plazas* the soldiers at the garrison, as well as their dependants, mustered. Goods were purchased, shipped, and stored at the *Castillo de San Marcos* (Deagan 1983:35). The remainder of the subsidy was needed to pay for transport of the goods and specie, as well as to pay the salaries of the garrison soldiers (TePaske 1964:78-79).

Soldiers purchased necessary items from the Royal Treasury (Deagan 1983:35). *Situado* supplies stored in the Royal Storehouse at St. Augustine in 1718 and 1721 included the following meager rations: "flour, corn, biscuits, powder, bullets, clothing for indians, rum, wine, thread, hides, wool stockings, oil, candles, wheat seed", and "agricultural tools" (AGI Contaduría 961 Document 5 (1718), Document 1 (1721) in Deagan 1983:36). Many times the garrison soldiers were paid in goods rather than cash, since specie was often scarce (Deagan 1983:35).

Delivery of the *situado* was irregular. Supplies purchased for the garrison

in Mexico often went undelivered for lack of vessels for transport. Goods that were already considered inferior, purchased at inflated prices, soon spoiled after sitting on the humid wharves of Vera Cruz for months on end (TePaske 1964:79). In 1712 a *situado* ship bound for St. Augustine that was taken by the English was reported to make "cats, dogs, and horses real delicacies at St. Augustine supper tables" (AGI *Santo Domingo* 848 December 20, 1715 in TePaske 1964:83). Soldiers at the Presidio commonly went into debt, waiting for delayed, and in some years undelivered, payroll, since the *situado* ship had failed to appear (Deagan 1983:37).

Many variations in delivery were experimented with during the eighteenth century. The logistical details of supply and transport, in combination with costs necessary for purchase, administration, and conveyance of goods to remote St. Augustine, made the *situado* an ineffective and unreliable system for Spanish supply (TePaske 1964:83; Deagan 1983:35). Most experts agree that even had the system been fair and consistent in arrival, the amount supplied could never adequately provide for the garrison (Pickman 1980:111-112) Throughout the eighteenth-century, Spanish governors in St. Augustine were often forced to look outside of the standard Spanish supply network. The Spanish Crown sometimes gave their blessing, and at other times simply turned a blind eye, to these breaches in trade policy (TePaske 1964:77-107; Harman 1969:2; Pickman 1980:96; Deagan 1983:35-37).

As early as 1722, inventories of goods stored in the Royal Storehouse at the Castillo include "English stockings" (AGI Contaduria 961 Document 2, 1722-1724 in Deagan 1983:36). Between 1735 and 1736, Florida's Governor Francisco del Moral Sánchez encouraged trade from English merchants. In 1736 at least six English vessels at one time were observed at anchor in the harbour at St. Augustine (AGI *Santo Domingo 862,* 26 October, 1736 in TePaske 1964:88). One resident reported " that English merchants walked the streets of Florida's capital as if they were in London" (AGI *Santo Domingo* 862, 28 August, 1736 in TePaske 1964:88).

After 1740, St. Augustine was the main base of operations for Spaniards equipped with letters of marque that licensed them to prey on foreign shipping (TePaske 1964:145). Between 1739 and 1753, during the period of increasing conflict over the settlement of Georgia, the Wars of Jenkin's Ear (1739-43) and Austrian Succession (1743-48), and increasing unease over control of the Atlantic and Caribbean sea lanes, South Carolina and New York shipping records confirm that there was no official trade between the British colonies and St. Augustine (Harman 1969:87-90). Instead, St. Augustine was stocked with goods brought in by Spanish privateers who had seized cargoes from the English, French, and the Dutch (Deagan 2002:110). Confiscated English cargoes brought into the harbour by the Spaniards included: rice, flour, corn, pork, pitch, pine, and tar (AGI *Santo Domingo* 2584 and 833 in TePaske 1964:145). Goods were also exchanged when vessels from warring nations visited to exchange prisoners under flags of truce (Deagan 1983:153).

A listing of *situado* supplies stored at the Castillo shows a substantial increase in the variety and amount of goods available after 1743 (Deagan 1983:36). Goods listed between 1743 and 1751, include objects as diverse and varied as anchors and sail needles, copper pots and pans, tallow and oil lamps, grinding stones, tools (including axes, drills, hammers, handsaws, Carpenter's planes, Jack planes, sledges, shovels, chisels, and a blacksmith's bellows), and fine china (AGI Contaduria 922A, Document 7 in Deagan 1983:36). Deagan suggests that several stores in St. Augustine proper were operated by English merchants (Deagan 2002:110). In addition to documentary evidence, the archaeological record shows that St. Augustine was increasingly well-supplied with English goods as the eighteenth century progressed (Deagan 2002:108-112).

THE ROYAL HAVANA COMPANY

The Havana Company was created by a Spanish royal charter in December of 1740 (TePaske 1964:97). A private venture, it was hoped that the company could help to remedy the problems associated with supplying St. Augustine through the *situado*. Maintaining sole control of the flow of trade goods into the New World through the government-operated convoy fleets had became nearly impossible by the eighteenth century. The expansion of other colonial powers into Caribbean and American colonies, coupled with the prevalence of piracy and government sanctioned privateering, made the convoy fleet system increasingly erratic. In search of a viable alternative, the Spanish government began to implement new policies that promoted private control of trade.

The Caracas Company, created in Venezuela in 1728, successfully resulted in a stock that paid dividends, an increase in the amount of cacao supplied to Spain, and the elimination of the necessity for a subsidy payment to the region (Lieuwen 1969:25; TePaske 1964:97). The Havana Company was a private enterprise based on the same principles as the Caracas Company. King Philip V was one of the primary stock holders of the Havana Company. The charter's goal was to increase Cuban trade with Spain, and promote a government tobacco monopoly on the island (TePaske 1964:97). In return for special trade privileges and tax exemptions, the company agreed to "maintain a coast guard around Cuba", "repress smuggling", "carry military goods free of charge to military and naval bases in the Caribbean", "build its own ships at its own costs", and " furnish Florida its annual quota of money and supplies" (Tepaske 1964:97-98).

In 1741 the Council of the Indies outlined the details of the Havana Company's requirement to supply Florida. The subsidy funds from Puebla were to be sent to Havana as "hard money", where provisions would be purchased, then shipped to St. Augustine. An agent in Havana was supposed to consult

with the Florida governor and his advisors, to determine the type, amount, and prices to be paid for necessary goods (AGI *Santo Domingo* 838 27 May, 1741 in TePaske 1964:98). From the onset, disputes arose over quality, prices, and the amount of supplies needed in St. Augustine. These problems were compounded by the familiar delays in delivery (TePaske 1964:100-105). In spite of continual complaints and negotiations between the Florida governor, the Spanish government, and officials of the Havana Company, Florida remained poorly supplied by official Spanish sources during the 1740s (TePaske 1964:103).

The officials of the Royal Havana Company received permission from the Spanish government to purchase supplies for Florida from outside sources if goods were not readily available in Cuba (Harman 1969:53). By July of 1752, and again in August of 1756, letters written from Florida's Governor to Spanish King Ferdinand VI mention that ships from New York and Charles Town were in the harbour of St. Augustine to deliver supplies contracted for by the Havana Company (AGI *Santo Domingo* 2542 in TePaske 1958:51; Harman 1969:54). Review of the original correspondence of the eighteenth-century Florida governors indicates that after 1748, complaints about delivery of the subsidy were not as frequent.

TePaske theorizes that this may, in fact, have been due to the increase of better quality and less expensive goods purchased from colonial English merchants (1958:51-52). Documents show that William Walton was one of the New York merchants contracted to ship goods to St. Augustine by the Royal Havana Company after 1740 (Harman 1969:56-57).

WILLIAM WALTON & COMPANY OF NEW YORK

English merchant William Walton, Senior (1674-1747) was the founder of a profitable shipbuilding industry based in New York. An accomplished mariner, and the frequent master of his own vessel, Walton managed a merchant fleet

that traded throughout the eastern seaboard, as well as the West Indies and the Spanish Main. Two sons, Jacob (1703-1749) and William, Junior (1706-1768), followed their father into the family business. Originally the Jacob and William Walton Co., the company was renamed for sole owner William Walton, Junior after Jacob's 1749 death (Townsend 1945, on file at SAHS). The Walton family were considered "upper level" merchants (Matson 1998). Documents show that during the eighteenth century they steadily grew as traders of Caribbean goods. They distilled rum from West Indian sugar, and traded logwood acquired from the Spanish Main (Matson 1998:421). The senior William Walton is described as having "engaged consistently in a large, diverse, exchange of goods at Caribbean islands" and as one of "the importers of more slaves in the early century than all other West Indian merchants, combined." Matson states that Walton and other Caribbean merchants "instructed captains to take slaves only on occasion in lieu of specie and bills of exchange" (Matson 1998:202 and 397 [based on correspondence at the New York Historical Society]). Walton was a capitalist and a practical man. St. Augustine was the perfect port for New York vessels to call before "jumping off" the American mainland coast and heading into Caribbean waters.

The Walton family began supplying the Spanish presidio in Florida, with the permission of both the British and Spanish crowns in 1726 (Walton Memorial 1757). Between 1736 and 1739, copies of two Spanish *obligaciones* show that the Walton Company supplied beef, flour, and pork, from New York to St. Augustine (1736 and 1739 Walton Family Papers). A letter from Governor Montiano (St. Augustine) to Governor Guemes (Cuba) documents that the Waltons had been contracted to supply St. Augustine prior to the creation of the Royal Havana Company in 1740 (7 July 1739).

In 1747 merchants Jacob and William Walton (Junior) were listed as owners of the sloop *Mary Magdalene.* The vessel's stated use was to serve as a "Flag of Truce for carrying Spanish prisoners to St. Augustine" (26 May 1747, New York Secretary of State, English MS Vol. LXXVI:583). This would have

been near the end of the War of Austrian Succession, before the Peace of Aix-la-Chapelle in 1748 made trade between England and Spanish colonies again permissible. During times of war the exchange of prisoners was a common ruse used for vessels of warring nations to gain entry to ports where trade goods could be exchanged (Harman 1969:41).

An English embargo on shipping to foreign colonies was issued at the onset of the Seven Years' War. In order to continue to supply St. Augustine, William Walton (Junior) supplied testimony to the English Board of Trade. Walton pleaded a special relationship that met a hardship need (in the Walton Memorial written in 1757). Walton's bid to continue to supply St. Augustine in spite of the official embargo was approved, with restrictions on the amounts that could be exported to St. Augustine. Provisions were made to forbid the re-transport of goods, so the supplies from New York to St Augustine could not be used to supply the French (Harman 1969:57). Walton described the obvious advantage to the English crown being the return to New York of silver from St. Augustine as a means to support "the Credit of our Paper Emissions" (Walton Memorial 1757). Walton and other British vessels and merchants continued to trade legally with St. Augustine during the Seven Years' War, until 1762 , when Spain officially joined the conflict (SCG 1757-1762; Deagan 1983:38, Harman 1969:57-63).

A sample of the types and amounts of provisions supplied to the garrison at St. Augustine by the William Walton Company in 1756 appears in Schedule Number 2 of the 1757 Walton Memorial. A transcribed list follows:

> "2783, barrels of Flour
> 428, Ditto of Beef
> 451, Ditto of Pork
> 216, Firkins of Butter
> 361, Ditto of Hogslard
> 23, Tierces of Bacon
> 76, Ditto of Ship-Bread

> *190, Quarter Casks of Ditto*
> *14, Barrels of Codfish*
> *15, Ditto of Salt*
> *110, Boxes of Tallow Candles*
> *32, Ditto of Sperma-Ceti*
> *32, Casks of, & 263 loose Cheeses*
> *5,345 Bushels of Indian Corn"*

The schedule goes on to request slight increases in these items, substituting ham for bacon, and including white bread in addition to ship-bread (Walton Memorial 1757:2).

The Walton Memorial outlines the duration and extent of the Walton Company's family commitment to supply St. Augustine from the outset of the relationship. The logistical intricacies of operating as a colonial merchant during the eighteenth century were extremely complex. As foreign policy that relied upon mercantilism took prevalence during the seventeenth and eighteenth centuries, English merchants purchased, purveyed, shipped and re-sold goods around the globe. A merchant had to maintain control of stock, inventory, shipping, and insurance, while also balancing an intricate book-keeping system that tracked financial notes and obligations. These serial merchandise transactions were spread over vast distances throughout extended time periods (Matson 1998:186-188). To manage trade more effectively, many middle or upper-level merchants hired a factor to serve as their representative in a designated colonial area where trade was brisk (Matson 1998:219). A factor's job was to generate business, acquire merchandise, maintain stock, and keep records, serving as both a confidential adviser and a financial agent for his merchant employer (Schlesinger 1957:35).

The 1757 Walton document includes a series of notarized support statements that detail the Walton Company's employment of a factor in St. Augustine beginning in the 1730s. Charles Hicks of Queens County, New York, stated that he went to St. Augustine in 1733, and served as a factor for William

Walton for a period close to ten years. Hicks testified that the residents of the garrison relied entirely upon Walton to supply provisions, "it not being customary for the Inhabitants to cultivate their lands, for any other produce, than their Gardens would supply." In 1743 Hicks was replaced as St. Augustine's Walton Company factor by Cornelius Sanford. Later, William Walton, Junior, stated that he resided in St. Augustine and served as the resident agent for his family's enterprise for fifteen months during the years 1754, 1755, and 1756. (By this time the company is listed as: William Walton, Esquire.) The notarized statement of New York mariner William Hyer also appears in the 1757 Walton Memorial. Hyer reports that he had been employed by the William Walton Company to sail from New York to St. Augustine between 1749 and 1757. Hyer states that he has "been frequently informed there, and verily believes, that all Persons whomsoever, were prohibited from exporting any Provisions from thence, to any other Port or Place." Documents and contracts show that Jesse Fish served as an employee and then an agent for the Walton Company in Florida, managing trade to supply the requirements of the Spanish garrison, throughout the period of study (Walton Memorial 1757). Jesse Fish, a young Englishman from New York, played an increasingly important role in St. Augustine's trade and supply from his arrival in 1736, throughout the period of Spanish turnover of Florida to the British (1763-1783), until his death in 1790. Fish provided the connection between the Lawrence family, the transport ships, and St. Augustine.

SUMMARY

Since its occupation in the sixteenth century, St. Augustine was poorly supplied by its Spanish compatriots.   Experiments with and variations of the *situado* and the *Royal Havana Company* were short-lived and ineffective. St. Augustine and the Spanish bureaucrats who regulated supply were separated by a large body of water that was difficult to navigate, which often made for an extended wait for official advisement or instruction.

In addition to communications, many times the goods trans-shipped from other Spanish colonies were slow to arrive. At times ships carried cargoes that arrived in poor condition. Quite frequently supply ships did not arrive at all. Due to the garrison's isolated location, remote from readily available Spanish supply sources, special dispensations were made which allowed the colony to be supplied by English sources. Despite traditional trade law restrictions, an increasingly developed network of supply was established between English New York merchants and Spanish St. Augustine residents during the eighteenth century.

CHAPTER IX

BLOOD TIES: TRADE FROM NEW YORK TO ST. AUGUSTINE

The Walton, Lawrence, Fish and Kip families were related to each other, and to St. Augustine, by strongly woven lines of blood and money, through navigation and commerce that crossed over 900 nautical miles (1500 km) of the colonial American coastline, throughout the eighteenth century.

JESSE FISH

Jesse Fish reportedly moved to St. Augustine in the employ of the Walton Company at the age of ten or twelve (Gold 1973:2). Fish was raised in the home of a prominent St. Augustine family, the Herreras, and spoke Spanish like a native (Gold 1973:2).

Jesse Fish's father was Captain Thomas Fish who married Elizabeth Kip, of Newtown, New York, in 1717 (Riker 1852:366). Elizabeth Kip may have been Jesse's mother or step-mother, since conflicting records indicate that Thomas Fish was married to another woman (Jemima Morgan) who may have been Jesse's mother at the time of his birth in 1724 or 1726 (Gold 1973:1). Elizabeth Kip was the sister of Abraham Kip, and their father's name was also Jesse. Abraham Kip was married to Sarah Fish, Thomas's sister. Abraham Kip made at least twenty passages between New York and St. Augustine between 1732 and 1739 (New York Cargo Manifests in Harman 1969:89-90). Abraham Kip's first voyage was listed in 1732 on the *Mary* of New York, for Jacob Kip (Abraham's grandfather). The remainder of Abraham Kip's voyages were on vessels named the *Jacob* or the *Don Carlos*, both presumed owned by William Walton (Harman 1969:89-90). A young Jesse Fish probably arrived in St. Augustine with his Uncle Abraham at the helm of a Walton Company ship.

In 1738, before the start of the War of Jenkins' Ear, a Spanish Bishop noted that all Englishmen "had been expelled, except for a teen-aged Fish,

whose presence was deemed necessary for the procurement of flour and meat from New York (Bishop of Tricale in Manucy 1947:79-80). A 1747 petition for returning Spanish prisoners lists Jesse Fish as the master (to be commissioned captain) of the sloop *Mary Magdalene*, a flag of truce vessel owned by the Walton brothers (26 May 1747, New York Secretary of State, English MS Vol. LXXVI:583). Fish continued to act as a merchant and broker to keep St. Augustine supplied throughout the 1740s, 1750s and 1760s.

When St. Augustine was turned over to the British by the Treaty of Paris in 1763, Fish became notorious for buying almost all of the land in and around the city from departing Spaniards. Records show that by 1765, Fish controlled most of the city property in St. Augustine. Acting as an agent for the departing Spaniards, records show Jesse Fish purchased over 200 buildings and 100 city lots surrounding the central plaza. Originally, Jesse Fish also declared himself the owner of at least two of St. Augustine's churches, until the British re-claimed the buildings as government property subject to the transfer of ownership through the official cessation (Gold 1973:4-7). Substantial property in St. Augustine was also purchased in the names of Jacob Kip (Jesse Fish's uncle, a New York merchant) and the Walton brothers (Gold 1973:5-6). Jesse Fish also owned over 42 acres outside of the city proper, as well as claiming ownership to Anastasia Island. On Anastasia Island Jesse Fish built a large plantation called *El Vergel*, where he grew and exported oranges until his death in 1790 (Gold 1973:6). Fish was able to find buyers for almost half of his properties when the English arrived. Most of the property he owned and sold was allegedly, somewhat illegally, placed in his trust, to re-sell to the British. Fish was supposed to have forwarded the profits from the land sales to the original Spanish owners (now in Havana). When criticized for keeping the cash, Fish claimed that most of the land funds were owed him, to secure the debts left by the evacuated Spaniards. Fish married his second wife in 1768, and retreated in isolation to *El Vergel*. When the Spanish re-claimed St. Augustine in 1783, Fish was forced to return property or pay remuneration to the relatives of those

whose land he had represented. Of the returning Spanish, Fish somewhat bitterly lamented that "among them were very few of my old acquaintances and almost none of my debtors" (Gold 1973:7-13). One theory for the reason of Fishes' apparent loss of previous wealth is that upon his retirement he had deeded his property to his agent (and relative), Jacob Kip, who was supposed to use those commissions to pay the Fish's debts to the Walton Company. Presumably, Fish had borrowed funds from the Waltons in order to finance his land purchases. In 1789, Fish explained that Jacob Kip had died "suddenly and intestate." With no will, no financial records to support Fish's claims, and apparently no payments made to the Waltons by Kip on Fish's behalf, Fish was ruined (Gold 1973:15). Fish died almost penniless. The property he was able to will to his family in 1790 included only his Anastasia Island plantation lands, ever after known as Fish Island (1790, Last Will and Testament of Jesse Fish; Gold 1973:17).

Records from the Presbyterian Church in Newtown, Long Island, New York, show that Jesse's Uncle Ambrose married Elisabeth Lawrence (her exact relation to the captains remains unknown), and settled at Islip on the far eastern end of Long Island, New York in 1728 (Riker 1852:366). Captain Thomas Lawrence (captain of the privateer *Tartar)* married Jesse's cousin, Elisabeth Fish in 1760. Jonathan Lawrence (captain of the sloop *Live Oak*) married her sister Judith Fish in 1766 (Riker 1852:367-368). Another relative, Phebe Fish, married James Devereaux, captain of the St. Augustine transport *Peggy* on Manhattan Island in 1747 (Records of Trinity County Parish Marriages, August 9, 1747). This connects three out of four of the transport captains with the Fish family and provides one link between the New York mariners and St. Augustine.

Daniel Lawrence, the twenty-four year old captain who lost the *Industry* trying to enter St. Augustine harbour in 1764, was Thomas and Jonathan's youngest brother. Their grandfather, John Lawrence, was the brother of Rebecca Mary Lawrence, who married Thomas Walton. Rebecca Mary Lawrence and Thomas Walton were the parents of the senior William Walton

(born about 1674), and the grandparents of William Junior and Jacob. The Lawrence captains and the Walton merchants were first cousins, once removed. Figure 9-1 contains the basic genealogical connections of the Fish, Lawrence, Walton and Kip families, focusing on their connections through marriage.

The will of William Walton Junior outlines the distribution of his properties in New York, including his primary residence in Trinity Parish at 326 Pearl Street, and a coach house and stable at 325 Pearl "on the opposite side of the street", next to the house "of John Lawrence to the east." Directly behind the lots on Pearl Street Walton also owned lots on Water Street. Records at the New York Historical Society indicate that the home of the senior William Walton was located on what is today 128 Pearl Street. William Walton, Senior also owned houses number at numbers 130 and 132 Pearl Street. John Lawrence was Daniel's second eldest brother, a wealthy merchant and the alderman of the area in which they all resided, the Dock Ward. He died childless at the age of 43 in 1764 (Riker 1852:285; NYG 10/06/1763 No.251). The Walton, Fish, Kip, and Lawrence families were mariners and merchants, close in physical distance and genealogical ties. Figure 9-2 shows the proximity of New York mariners and merchants, circa 1766 (after Matson:1998:240), as well as the location of the Lawrence and Walton family homes.

Walton Family Tree

Rebecca Mary Lawrence, b. about 1648 in Newtown, Queens County, NY
(married Thomas Walton, sister of Capt. John Lawrence-grandfather of Daniel)
|
William Walton (Senior) -1698 married Mary Santford (d. 1768)
(b. about 1674-d. 1747)
|
Thomas Walton b. 1699
Maria Walton b. 1701
Jacob Walton b. July 1703-d. 1749) - married Mary Beekman (d.1782)
William Walton, Junior b. October 20,1705, baptized Oct. 1706-d. 1768
-married Cornelia Beekman (d.1780)
|
Mary Walton - married NY
merchant Lewis Morris in 1749

Jacobus Walton b. 1708/09
James Walton   b. 1711
Abraham Walton b. 1713/14

Figure 9-1.   Pertinent Connections of the Lawrence,
Walton, and Fish Family (Barret 1836; Riker 1852;
Bob Singleton 2002, Personal Communication;
SAHS Vertical Files)

Lawrence Family Tree

Major Thomas Lawrence
     |
       Captain John Lawrence b. 1657 (sister Rebecca Mary married Thomas Walton)
          |
          John Lawrence b. Newtown 1695 d. May 7,1765 –1. Patience Sackett b.1701
                                       (Newtown)
                |

	John Lawrence b. 1721-d. August 5,1764 (NY merchant & alderman of Dock Ward)
Joseph Lawrence	b. Newtown 1723
Richard Lawrence	b. Newtown 1725
Nathaniel Lawrence	b. 1727-d. 1761 (lived, traded & died unmarried in St. Eustatia)
William Lawrence	b. Newtown 1729
Anne Lawrence	b. Newtown 1731
Thomas Lawrence	b. 1733-d. 1817 (Captain of *Tartar*, married Elizabeth Fish 1760)
Samuel Lawrence	b. Newtown 1735
Jonathan Lawrence	b. Newtown October 4, 1737-d. 1767 (1.married Judith Fish 1766 2.married Ruth Riker 1768 in Presbyterian Church, Newtown)
	|
	Jonathan Junior
Daniel Lawrence	b. Newtown 1739 -married Eve Van Horne
	|
	John Lawrence 1769
	Catherine Lawrence 1771

Also: Augustine Lawrence, son of Samuel, born before 1717 (Daniel's cousin);
          Nathaniel, brother of John b. 1695 (Daniel's Uncle)

Figure 9-1 Continued

Fish Family Tree

Nathaniel Fish b. 18 December 1650-d. 1734
       |
     Jonathan b.1680
     Nathan b. 1686
     Mary b. 1687
     Samuel b.1689
     John b. 1691
     Thomas b. 1693 – married 1. Jemima Morgan
                      2. Elizabeth Kip b. 1698 m. March 1717
                      (daughter of Jesse Kip,
                       sister of Jacobus Kip b. 1701
                     sister of Abraham Kip b. 1703)
                          |
                    Susannah b. 1695
                    Twins Ambrose and Benjamin b. 1697
                    (Ambrose married Elizabeth Lawrence in 1728)
                    Sarah b. 1699-married Abraham Kip
                          December 19, 1761
                    Nathaniel b. 1700 d.1769-Jane Barrien 1738
                            |
                       Elizabeth b. 1741
                         (married Captain Thomas Lawrence)
                       Mary b. 1743 d.1757
                       Sarah b. 1745-d. 1765
                       John b.1747
                       Judith b. 1747
                         (married Major Jonathan Lawrence)
                       Peter b.1751
                       Susannah b. 1754
                       Jane and Anna b. 1755?
                       Jesse b. 1724 or 1726

Also: Phebe Fish (relation unknown) married Captain James Devereaux
           in Trinity Parish, NY 1747

Figure 9-1 Continued
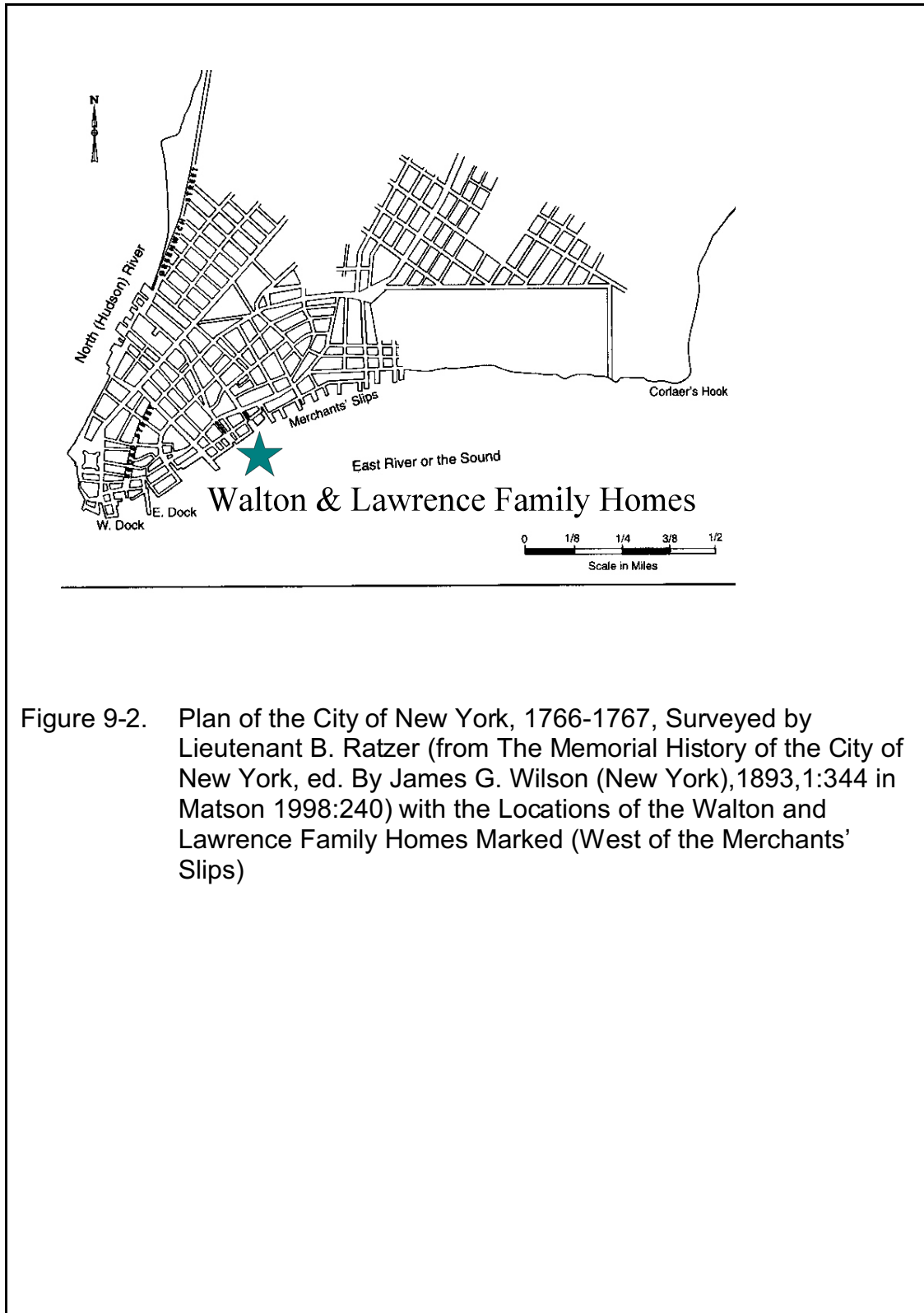
Figure 9-2.   Plan of the City of New York, 1766-1767, Surveyed by Lieutenant B. Ratzer (from The Memorial History of the City of New York, ed. By James G. Wilson (New York),1893,1:344 in Matson 1998:240) with the Locations of the Walton and Lawrence Family Homes Marked (West of the Merchants' Slips)

THE LAWRENCE CAPTAINS FROM NEW YORK

On May 6 in 1764, the youngest brother in a family of New York mariners failed to safely read the shifting sands and strong currents that guard the entrance to St. Augustine's harbour. Daniel Lawrence reportedly "wrecked on the Bar of St. Augustine." Daniel Lawrence was sailing the sloop *Industry* to supply St. Augustine with "subsistence money for the troops in Florida, with the Artificers & tools & ea for the several Forts." The *Industry* was "cast away off the bar of St. Augustine", with "very little saved" (Gage Papers, Reel 1,Vol.18 & 19, May and June 1764, Ogilvie to Gage and Gage to Capt. Harries or Officer Commanding at Appalachi).

Daniel Lawrence and the *Industry* were one of four captain and vessel pairs hired from New York to serve as part of the British Army transport fleet. Florida was cleanly stripped of nearly every portable object by the Spanish before their evacuation; therefore a tremendous amount of men, stores, arms and ammunition were needed to re-supply the forts and garrisons at the beginning of the English occupation. The ships hired as army transports (between 4 April and 22 June, 1764) were the "sloop *Industry*, Captain Daniel Lawrence, sloop *Peggy*, Captain James Devereaux, sloop *Anne*, Captain Jonathan Porter" and "sloop *Live Oak*, Captain Jonathan Lawrence" (Gage Papers, Microfilm, Reel No.2 140G).

Shipping records show that the 6 May, 1764 attempt to enter the harbour was Daniel Lawrence's first solo voyage into St. Augustine. Prior to 1764, only two mentions of Daniel Lawrence appears in English shipping records. A twenty-two year old Daniel was listed as captain of the *Cornelia* in 1762, bound from New York for Martinique (*NY Mercury May 3, 1762* in Watts 1928:45). Appendix D shows the basic data related to navigation for all pertinent vessels trading between New York, South Carolina and St. Augustine in the eighteenth-century until 1765. To form a more complete chronological picture, data obtained from secondary sources has also been included in the appendix table.

Port records show that Daniel Lawrence, in the company of his brother Jonathan (each individually listed on two un-named vessels), was cleared to depart New York for St. Augustine on 11 November, 1763 (NYG, No.257). At the end of the Seven Year' War, the Spaniards who evacuated Florida were all transported from St. Augustine to Havana. One of the vessels hired for the evacuation was listed as the "English Sloop *Industries*" (sic). The *Industry* departed St. Augustine, carrying 58 passengers for Havana, on 23 December, 1763 (AGI 86-6-6/43 in Gold 1969:72). The *South Carolina Gazette* reports that Daniel Lawrence, in command of the sloop *Industry*, returned from Havana to Charles Town on 12 February, 1764 (SCG, No.1544).

The New York Custom House records show that Daniel Lawrence, captain of the *Industry*, returned from South Carolina on 12 March 1764 (NYG No. 274). For the next two weeks an advertisement was posted in the New York paper: "Just imported in the sloop *Industry*, from South Carolina, by William Ricketts Cortland, A Parcel of New Rice, which he will sell cheap for cash. Enquire at the house of John Lawrence, Esquire (NYG No. 275, 276). The last newspaper mention of *Industry* before its loss lists Daniel Lawrence cleared for departure to South Carolina on 9 April 1764 (NYG No. 279). The *Industry* sank on 6 May 1764. The only published account of the vessel's loss discovered states that "A sloop from New-York, in the service of the government with several officers and soldiers, a sum of money, and a large quantity of artificers tools on board, bound for St. Augustine, is cast away on that bar, the people and money saved." *(Georgia Gazette* , 31 May 1764).

Historic documents list captains from Daniel Lawrence's immediate family navigating the Atlantic seaboard between New York and Carolina, to St. Augustine and the Caribbean, during the 1750s and 1760s. The earliest port record mention in Harman shows that Jonathan Lawrence sailed the *Lena* from New York to St. Augustine with a cargo of deerskins and logwood in November of 1754 (NY Cargo Manifests in Harman 1969:90). Other port records mention

Daniels' brothers John Lawrence and Jonathan Lawrence, Senior, and his son (Daniel's nephew) Jonathan Lawrence, Junior, making numerous trips between New York and the Caribbean, often via Charles Town or St. Augustine during the beginning of the Seven Years' War (NYG & SCG). England declared war on Spain in January of 1762. St. Augustine then disappears from mention in British port records since official trade between the Spanish and British inhabitants of the New World was then forbidden.

In 1762, records show that Jonathan Lawrence, Senior, in command of the *Live Oak*, and James Devereaux, master of the *Peggy*, were both sub-contracted to transport British troops as part of the fleet convoy from New York. They transported goods and soldiers to the West Indies (NYG No.188, No.189,No.194 & No.228), presumably to prepare for the invasion of Havana. Both vessels traveled to Jamaica, and then Havana between July of 1762 and April of 1763. During the summer of 1763, after peace had been declared and Florida ceded to the British, reports of ship traffic to St. Augustine resumed as British soldiers were carried in to man the forts (NYG No. 244, 15 August 1763).

Daniel Lawrence is not mentioned again in the port records reviewed through 1767 which list arrivals and departures to St. Augustine. In 1767 a single mention of Daniel Lawrence appears in Olsberg's list of vessels registered to trade in South Carolina. Twenty-four year old Daniel is listed as the commander of a rather small (10- ton) sloop, the *Polly*, home-ported in New York after being built there in 1766, his "former register lost" (Olsberg 1973:256).

Genealogical research and the examination of historic documents reveal that there is a clear familial connection, forged by marriage, and strengthened by blood ties, between a family of mariners named Lawrence, a family of merchants from New York named Walton, and a family of merchant mariners named Fish and Kip, transplanted from New York to St. Augustine. In spite of colonial trade policies written by England and Spain that limited and prohibited trade between their New World possessions for the better part of the eighteenth century, a steady stream of vessels made their way along the eastern seaboard

from New York to St. Augustine. Daniel Lawrence, Captain of the *Industry,* was sub-contracted by the British Army to supply St. Augustine due to his family's well known experience and expertise in navigating the waters into and around Spanish Florida. The exact cause of the *Industry's* loss is unknown. Perhaps it was due to strong winds brought on by a sudden squall, and the treachery of the churning seas. Certainly the vessel wrecked on the bar just offshore from the city due to a hard grounding on the constantly shifting sand bottom that surrounds St. Augustine's channel entrance.   When it came to the notoriously hazardous inlet at St. Augustine, being part of a family of mariners with strong ties to the area was not enough to guarantee Daniel Lawrence's vessel a safe passage.

CHAPTER X

SUMMARY AND CONCLUSIONS

The Spanish in the New World coveted and protected the northeast Florida coast because it afforded access and protection to an important trade route through North American and Caribbean waters. From its inception in 1565, the settlement at St. Augustine was nearly always under siege, by either pirates, privateers, or rival colonial nations. At St. Augustine, shifting sands created a dangerous channel entrance, and limited the size of vessels that could navigate inside the Spanish harbour. The construction of a small coquina fortress, completed in 1695, combined with the hazards of the tortuous harbour entrance, kept the settlement small, protected, and Spanish. Yet the same conditions also kept the residents, dependant upon outside shipments for supply in a constant state of struggle to acquire basic goods for survival.

A remote sensing survey based upon data from an archival records search was undertaken in the waters of St. Augustine by Southern Oceans Archaeological Research (SOAR) in 1995. This led to SOAR's discovery of ship loss site 8SJ3478 in 1997, which was ultimately identified to be the remains of the *Industry*, lost in 1764. Three years of difficult excavation in the same dynamic shallow water swath zone that caused the *Industry's* loss, provided only a cursory examination of a relatively small portion of the site. Yet even that limited site excavation provided a wealth of information. No indication of the vessels's hull was ever uncovered.   A site that consisted of eight six-pound cast-iron cannons, three large stowed iron anchors, an assorted variety of ammunition, tools, and a few personal items, was recorded by SOAR between 1997 and 2000.   The cannons, anchors, and most of the artifacts recovered, were identified as belonging to the British empire during the reign of George II (1727-1760).

These clues, when studied in conjunction with the rest of the cargo

carried, the location of the wreck site, and eighteenth-century vessel loss reports, provided an identification for site 8SJ3478 as the *Industry*.

The *Industry* was a colonial North-American vessel, hired by the British Army to transport troops and supplies (ordnance and artificer's tools) to a newly acquired territorial possession. Ownership of East and West Florida was ceded by Spain to England during negotiations at the end of the Seven Years' War. The *Industry* was captained by Daniel Lawrence, then twenty-four years old, when he made his first documented solo visit into St. Augustine, without his brother or his father in an accompanying vessel. Lawrence lost his vessel on the bar. In the Gage documents, Major Francis Ogilvie, Commander of the British occupation forces as well as the temporary Governor of East Florida, describes the dynamics of the loss: "the Wreck was greatly scattered along the Coast" (Ogilvie to Gage, 13 May 1764,Reel 1,Vol.18,6).

While reporting to his commanding officer, General Thomas Gage, in New York, Ogilvie initially complains that the "Inhabitants of East Florida consist of a sett of People, who have absconded from other Colonies for Debts & other Crimes", and "that the Inhabitants have taken a great many of the King's Stores." Ogilvie proposes to make a "search in order to see if I can detect any" of the thieves who have absconded with the missing goods, and inquires "whether or not my power extends so far, as to make an example of some of them, which would be absolutely necessary for the good of this Colony" (Ogilvie to Gage, 13 May 1764,Reel 1,Vol.18,6).

Ogilvie, Gage, and the various other commanders of the forts in Florida, go on to detail the lost cargo: small cannon and artificer's tools that were destined for St. Augustine and points west along Florida's gulf coast and beyond.

Work on the site can be reviewed in a number of forums, each increasingly larger in its scope of focus. As an archaeological site the deposition of artifacts reviewed by type alone may simply tell us that we seem to have

excavated a cluster of iron, represented by the heaviest variety of the material culture to survive. The cast iron cannon, surrounded by anchors, axes, shovels, and ammunition have formed a pocket on the sea floor. The absence of any evidence of the vessel's hull could either be because the vessel itself was so broken up (as described by Major Ogilvie), or because conditions did not ever allow a deep enough excavation to go below the platform on which the cannon rested.

The artifactual evidence reviewed in conjunction with historical documents describing vessel losses in the eighteenth century does provide new evidence. The loss of the *Industry*, with its cargo of ordnance and artificer's tools described in the Gage documents, indicates that the artifacts recovered are from the transport vessel chartered by the British to supply their forts at the end of the Seven Years' War. In this context, the artifacts recovered shed light on what the British deemed necessary when occupying a former enemy's colony. Not surprisingly, guns, ammunition, and tools were listed, and recovered, as the primary cargo.

During the eighteenth century, both Spain and England had sweeping regulations that essentially prohibited free trade between their colonial settlements, as well as any un-sanctioned interaction between their citizens, or their vessels at sea or in neutral ports. An examination of the *Industry's* cargo, by itself, can neither support nor negate the claim that North American colonists from both nations did indeed trade with one another. However, the trail that the shipwreck site left led into a series of contemporary eighteenth-century documents that began to show a strong link between a New York merchant, a community of New York mariners, and an isolated Spanish outpost in the New World. Port records show that trade and supply from British New York and Charleston continued to St. Augustine until 1762.

During times of war, when official records fail to show inter-coastal visits, some trips were documented to have been made by increasingly familiar names

to return prisoners under "flag of truce", which undoubtedly led to trade (26 May 1747, New York Secretary of State, English MS Vol. LXXV:583). The genealogical record provides a great deal of information about the reality of inter-colonial co-operation between St. Augustine's residents and their neighbors to the north, the British colonists from New York. The Walton, Fish, Kip and Lawrence families all had strong ties to St. Augustine. These ties were no doubt inspired and reinforced by a lucrative trade that was permitted by international agreements made as early as 1726. Once the trade was instituted, familial bonds began to strengthen. Documents show that the family members of the clans of merchants and mariners began to intermarry, and spend more and more time in St. Augustine as the century progressed. Yet at the same time that restrictions against trade were being relaxed, legitimate transactions were beginning to be taxed at steadily increasing, sometime exorbitant rates.

The story foretold by the voyage of the transport sloop *Industry* is a familiar one. Regulations made by governments in remote nations thousands of miles removed from their colonies were ignored, as struggling citizen's justified any method or means to acquire the goods they required, <u>and</u> desired, to satisfy their daily needs. American newspapers that reported the British acquisition of Florida in 1764 later began to print frequent reports about colonial dissatisfaction with increasing legislation and taxation governing trade (NYG No.364 and No.365,1766). The colonists were clearly beginning to view leaders back in England as far removed from their reality. It was easier to slip a sailing vessel along the eastern seaboard, then it was to wait longer, and probably pay more, to purchase goods when they arrived though legitimate sources. The coastal mariners knew each other, and the routes between their harbours well.

In 1764 the *Industry* ground its keel into the bottom, unable to complete its journey into safe anchorage at St. Augustine. The cargo the *Industry* carried tells an interesting tale. The larger cannon were probably all cast in England by local foundries for the British Board of Ordnance. The swivel gun was plain and crude, and could have belonged to any nation. The tools recovered from the

wreck site were mixed in their origin. Fifty-four felling axes were clearly American-styled and crafted by a New York blacksmith. The bundled parcel of files was English made, probably from superior Sheffield tool steel. The knives, or drawknifes, and fasteners observed were crude, and probably crafted by a blacksmith at a small forge in America from bar iron. The ceramic sherds recovered represented a cross-section of design and cultures, Native American, Spanish, and colonial American. The glass remains could be either English or American in origin. Faunal evidence suggests a diet that included fish, fowl and beef, prepared in an iron stew pot, and possibly served on a pewter charger. English tea was probably brewed in a copper pot. The cargo carried and goods on board to serve the crew of the *Industry* were clearly supplied by whichever nation, colony or culture could meet the need, by having the capability to supply, and being able to deliver, those goods necessary.

A colonial American boat, hired to transport the British Army, was lost and its voyage foreshadows the development of a strong and independent nation, more reliant on available resources and its immediate proximate reality and government, than any tradition.

Terrestrial archaeological excavations of St. Augustine show that even while the territory was still under Spanish occupation, goods like ceramics were being supplied in increasing percentages from British rather than Spanish sources as the eighteenth century progressed (Halbirt 2002; Hughes 2002). Proximity, profit, necessity and desire, again were shown to triumph over legality.

Commander Ogilvie complained to General Gage in his missive describing the loss of the *Industry*, that the vessel was lost but its wreck was not even reported while it could perhaps still be saved, since it was insured. Ogilvie went on to lament, "Now Sir, I must beg leave to observe to you that this Post must be ruined & undone, if there is not some step taken to put a Stop to the Villainous proceedings of Loseing Vessels on the Bar here, which are insured above their value." Co-incidentally, though no records have yet been found to

corroborate this connection, by 1764, as was the standard practice with many of the New York merchants, the vessels of the Walton Company were probably also insured by an affiliate insurance company, also owned by William Walton.

As a final footnote to this story and this report, it should be reiterated that after he lost the *Industry* at St. Augustine in 1764, the sole remaining record of Captain Daniel Lawrence in the marine reports indicates that his next vessel, the *Polly*, New York built and owned, was surveyed and reported to be very small and perhaps at only ten tons, easier to handle (Olsberg 1973:256).

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APPENDIX A

FLORIDA BUREAU OF ARCHAEOLOGICAL RESEARCH 1A-32 PERMIT

FLORIDA DEPARTMENT OF STATE
Sandra B. Mortham
Secretary of State
DIVISION OF HISTORICAL RESOURCES
R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

Director's Office
(904) 488-1480

Telecopier Number (FAX)
(904) 488-3353

February 18, 1997

Ms. Marianne Franklin
Southern Oceans Archaeological Research, Inc.
P.O. Box 13512
Pensacola, Florida 32591

Re: Application for 1A-32 Archaeological Research Permit
        Archaeological Site Assessment Survey to Ground Truth
        Anomalies Located During Phase I Investigations of the
        Inshore and Offshore Areas of St. Augustine
        St. Johns County, Florida

Dear Ms. Franklin:

The application, which you submitted on behalf of Southern Oceans Archaeological Research, Inc. for an archaeological research permit under Chapter 1A-32 of the Rules of the Department of State, was received by the Division of Historical Resources, Bureau of Archaeological Research (BAR) on February 12, 1997. We have reviewed the information contained in your application and on pages 70-77 of the Phase I report find it to be complete and sufficient.

You are hereby granted a permit to conduct the proposed archaeological field investigations from March 1, 1997 through March 1, 1998, subject to the following stipulations:

(1) As the principal investigators, you and J. W. Morris III shall be responsible for the direction of all archaeological investigations and for the preparation of the final written technical and popular reports on the results of the permitted research, although it is understood that you will be assisted in these activities.

(2) A copy of this permit shall be provided to the land managing agency and another copy shall be carried by field personnel during field work. A copy shall also be attached as an appendix to the report.

(3) The effective field investigation dates are also subject to receipt of permission from the land management agency and, in some instances, the State/Federal dredge-and-fill permitting program. Those agencies may also require work performance conditions relevant to their natural resource management and permitting responsibilities. A copy of the written permission of the land management agency and, when appropriate, the dredge and fill permitting agency/agencies to conduct the subject work shall be provided to the BAR.

(4) Unless approved in writing by this office, no work beyond that described in and attached to your application shall be performed.

APPENDIX B

EXCERPT TRANSCRIPTIONS OF GAGE DOCUMENTS

PERTAINING TO THE 1764 SUPPLY OF FLORIDA

(FROM MICROFILM REEL 1, VOLUME 18, AT THE P.K. YONGE

LIBRARY, UNIVERSITY OF FLORIDA, GAINESVILLE, FLORIDA)

(Reel 1,Vol.18,6)

13 May 1764, Ogilvie to Gage

Sir,

I have the Hon'r of Your Excellency's letter, I am extremely sorry to acquaint you that the Industry Transport, Commanded by Captain Lawrence was unfortunately cast away off the Bar of St. Augustine the 6th Inst. Sent all the boats in this Post out to her Assistance, ordered a Guard to take care of the Wreck, fortunately sav'd Six Boxes of Money, some Flower and Carpenter's tools. Shall send a Return of them to Col. Robertson in order to lay it before you. Now Sr. I must beg leave to observe to you that this Post must be ruined & undone, if there is not some step taken to put a Stop to the Villainous proceedings of Loseing Vessels on the Bar here, which are insured above their value: I am told that Capt. Lawrence's Vessel was insured, he never sent to acquaint me that he was off, by that means the Sloop was lost, not having Boats to bring him in. The Inhabitants of East Florida consist of a sett of People, who have absconded from other Colonies for Debts & other Crimes, as the Wreck was greatly scattered along the Coast, it was impossible for the Guard to extend itself so far, so that the Inhabitants have taken a great many of the King's Stores, propose making a search in order to see if I can detect any of them. If I do I shall be glad to know from your

Excellency, whether or not my power extends so far, as to make an example of some of them, which would be absolutely necessary for the good of this Colony, have sent express the sloop Anne to acquaint you of this disaster. A Mr. Stuart informs me that the Creek Indians are very Tardy in giving Satisfaction for the murder they have Committed in the back Settlement of a South Carolinian. In case an Indian War the small artillery are absolutely necessary for the defence of the advanced Posts, you may be assured. I'll do everything in my power for securing these Posts in the best manner possible. The Capt. of the Transport who I have sent to you with the Express

Would have sent her to Pensacola, as most of the Artificers tools are lost thought it more proper to acquaint you of our misfortune than to send him there without those tools. Wrote to you by Capt. De.. which I hope came to your hand in which I told you I had received a letter from Capt. Harries in which he told me in his passing to Appalachi he was obliged to throw a great part of his Provision and Artillery over Board that he would be obliged to abandon the Post if there is not a supply sent him,....”

Received May 30 by the sloop Anne, and answered by the Anne

_____

(Reel 1,Vol.19,2)

3 June 1764, New York, Gage to Capt. Harries or Officer Commanding at Appalachi

"Sir,

I am sorry to acquaint you of the loss of the <u>Industry</u> Transport, in which the subsistence money for the troops in Florida, with the Artificers & tools & ea for the several Forts were embarked. She was wrecked on the Bar of St. Augustine, and very little saved".

_____

(Reel 1, Vol.20,2)

20 June 1764, Gage to Harries at Appalachi

"Sir,

You will have been disappointed in the stores intended which were forwarded from here some time ago in the <u>Industry</u>, which vessel unfortunately ran upon the bar of St. Augustine, was wrecked. I hope you will receive everything you shall be in want of by this opportunity".

(saved 2 carriages for 6 pounders which were left at Pensacola & will send, should receive guns and carriages soon).

_____

APPENDIX C

SOAR SITE 8SJ3478 ARTIFACT CATALOGUE

Included under separate cover for the purpose of this publication is a complete artifact catalogue which contains the individual description and precise measurements of every artifact recovered from the *Industry* site by SOAR between 1995 and 2000. The artifacts are listed consecutively, by the field accession numbers originally assigned by SOAR. Florida State Bureau of Archaeological Research accession numbers are also listed with each item for easy cross-reference. A photograph or drawing of every artifact recovered appears in the catalogue. Data pertaining to the artifact's recovery (date, provenance, and location), as well as the specific details of each object's conservation, is included. Basic comparative analysis reference information is listed where pertinent. The artifact catalogue page numbers run from C.1 through C.125.   For more information about any individual artifact, please feel free to contact the author online at incsoar@aol.com. The artifacts have been returned to the state of Florida, but are currently on display at the St. Augustine Lighthouse & Museum in St. Augustine, Florida.

APPENDIX D

1754-1767 COASTAL NAVIGATION AND TRADE TO ST. AUGUSTINE:

VESSELS TRADING BETWEEN NEW YORK,

CHARLES TOWN, SOUTH CAROLINA AND ST. AUGUSTINE, FLORIDA

DATE(S)	VESSEL, Master	PORT(S)	MENTION	SOURCE
Sep 1754	*LENA* of NY Jonathan Lawrence	New York, St. Augustine	cargo manifests	Harman 1969:90
Oct 1755	*LARK* of NY William Hyer	New York, St. Augustine	cargo manifests	Harman 1969:90
1759: Mar 1760: Sep Oct	*TARTAR* ship & privateer Thomas Lawrence	New York	"Now Bound on a Cruize, Against His Majesty's (Enemies)"	NYG #5 #86

1759: Mar May Jun Jul	Vessel not listed Capt. Lawrence	New York, St. Augustine & Philadelphia	*Custom-House*	NYG #14 #15 #17 #20
1759: Jun Jul	Vessel not listed Capt. Heyer	New York & St. Augustine	*Custom-House*	NYG #17 #20
Nov 1759 Apr 1760	*CORNELIA* John Lawrence	Virginia, St. Augustine	cargo manifests	Harman 1969:91

1759: Feb Mar Aug Oct 1760: Jun Sep Oct 1761: Jan Apr Jun Jul	*CORNELIA* sloop Jonathan Lawrence 1st mention Jr. Jonathan Jr. Jonathan Jr. Jonathan Jr. Jonathan Jr.	Charleston, New York , New London & St. Augustine	*Marine List* cargo manifests*,* *Custom-* *House*	SCG #1386-87 #1411-12 #1420 Harman 1969:88 NYG #37,#70, #72,#82, #88, #103 #116 #127 #130

1759: Sep 1760 Mar Apr May Jun Aug Oct 1761: Jan Mar Apr Jun Jul Sep	*LARK* sloop Jonathan Lawrence (Sr.)	New York, Charleston & St. Augustine	*Custom-House*, cargo manifests, *Marine List*	NYG #33,#58 #67,#70 #78,#79 #87,#102 #113 #118 #128 #130 #140 Harman 969:88,91 SCG #1339-42 #1411-12 #1420
1762 Mar 06	*LARK* *no captain listed*	Charleston from the Mount (Monte Christi)	"carried in two ships" confiscated one with a "cargo of fuzees"	SCG #1442

1760: Mar Apr May Aug Oct 1761: Jan Jun Dec 1762 Jan Mar Apr	*WOLF* sloop Isaac Lawrence	St.Augustine Charleston & New York	*Custom* *House* cargo manifests, *Marine* *List*	NYG #60-61 #81,#89 #101 #154 #169 Harman 1969:88 SCG #1437-38 #1449
1762: Jul	*WOLF* sloop George Stewart	New York to West Indies	"to our fleet and armies in West Indies"	NYG #188
1762 Jan Aug	*POLLY* *sloop* *James* *Devereaux*	Charleston, New York, St. Augustine Jamaica	*Marine* *List* *& Custom* *House*	SCG #1436 NYG #189 #193

1762 May	*CORNELIA* *sloop* *Daniel Lawrence*	New York for Martinique	*Custom House*	*New York Mercury* in (Watts:45)
1762 Nov-1763 Jan	*CHARMING SALLY* sloop Lancelot Lawrence,*master before capture* (*SALLY*)	New York Charleston, St. Augustine	taken by St. A privateers en route to Havana from NY, then hired by Jesse Fish to return prisoners	SCG #1480 #1484 #1487 NYG #2

1762: Jul 1763: Mar Apr Jun Nov Dec 1764: Feb May 1765: Feb Mar May Nov	*LIVE OAK* sloop Jonathan Lawrence	New York, Charleston & St. Augustine, British Havana & Jamaica Pensacola (May 1765) Honduras (Nov 1765)	sailed "to our fleet and armies in West Indies" in 1762, then arrived in Charleston from Havana & Jamaica in April 1763-acting as transport in convoy w/ Wolf	NYG #188 #204 #228 #234 #269-270 SCG #1495 #1499- #1502 #1537 NYG #286 #324 #327 #369 #398
1763 Nov	*ANNE* sloop Jonathan Porter	Charleston & Georgia	*Marine* *List*	SCG #1532

1763 Nov	no vessels listed J. Lawrence & D. Lawrence	New York & St. Augustine	*Custom House*	NYG #257 NYG #260
1763: Dec	*POLLY* Robert McCormick	New York & St. Augustine	*Custom House*	
1764: Apr May Aug Sep 1765: May	*PEGGY* John Devereaux	New York, St. Augustine, Granados	*Custom House*	NYG #282 #283 #298 #301 #336
1763: Nov Dec 1764: Feb Apr	*INDUSTRY* sloop Daniel Lawrence	St. Augustine, Havana, Charleston & New York	arrived 1/18/64	Gold 1969:72 SCG #154 NYG #257 #274

May 6 1764	***INDUSTRY*** **sloop** **Daniel Lawrence**	St. Augustine	***"cast away off the Bar of St. Augustine the 6th"***	*Gage Papers Reel 1,Vol.18,6 13 May 1764, Ogilvie to Gage*
1766: Aug Sep Nov	*ANNE* sloop Capt. Robert Harris	New York, St. Augustine	*Custom House*	NYG #385 #389 #399
3 April 1767	*POLLY* 10 ton sloop, Daniel Lawrence (master & owner)	New York (homeport & built)	registered to trade in SC, "former register lost"	Olsberg 1973:256

VITA

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                     Archaeologist, President & Director

                     Founding member of a group of archaeologists dedicated to
                     undertaking significant underwater archaeological research
                     projects that will benefit the academic community, while at
                     the same time working to provide the general public with the
                     means to understand and interpret their maritime heritage.
                     Projects undertaken have included work in Florida,
                     Alabama, Georgia, North Carolina, Bermuda and Jamaica.