THE B STREET SCHOONER: ARCHAEOLOGICAL INVESTIGATION INTO SHIP
CONSTRUCTION AND DESIGN OF A NINETEENTH-CENTURY SHIPWRECK IN
PENSACOLA BAY, FLORIDA

by

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ABSTRACT

THE B STREET SCHOONER: ARCHAEOLOGICAL INVESTIGATION INTO SHIP CONSTRUCTION AND DESIGN OF A NINETEENTH-CENTURY SHIPWRECK IN PENSACOLA BAY, FLORIDA

Wesley Allyn Perrine

In 2009 and 2010, the University of West Florida included the B Street Schooner site into its maritime field school. The goal of the investigation was to build off prior investigations conducted in 1992 and 2005 by beginning test excavations in key areas of the wreck. The excavations uncovered evidence that the vessel is large, built for strength, and likely abandoned; however, the excavations did not yield definite conclusions relating to the vessel due to a lack of material culture and poor archaeological context. In order to enhance the archaeological evidence, this thesis compares the B Street Schooner to other vessels of known occupation from different time periods. The results show the B Street Schooner has construction characteristics similar to general freight vessels. The comparison also revealed that construction and design trends for general freight vessels changed over time. The examination of changes in a historic economic context revealed that design trends shifted in response to Pensacola’s economic status for a given time. By combining archaeological evidence with historic economic context, this study allows us to understand the B Street Schooner in terms of the history of the vessel and the human influences that accounted for how it was built.
CHAPTER I
INTRODUCTION

In 2009 and 2010, the University of West Florida (UWF) investigated the vessel known as the B Street Schooner (8ES1903), located in Pensacola Bay, Florida (Figure 1). The B Street Schooner is a large, 19th-century vessel, measuring 45.6 m (149.6 ft.) in length and 10.5 m (34 ft.) in beam. The remains of the vessel lie along Pensacola’s waterfront, an area that was once a busy port in the 19th century. The artifacts, as well as the vessel’s construction, correspond to the late 19th and 20th centuries. This study utilizes the findings of the 2009 and 2010 UWF excavations to understand the B Street Schooner in terms of its construction, design, reason behind its deposition, and use.

Although it is important to have a thorough knowledge of a vessel’s history, often, archaeologists only focus on transitions in form and construction techniques through time. However, any study of vessel construction and design should also include the human behaviors that influenced the changes and not just the historical sequence of vessel types (Murphy 1983:74). This study examines the B Street Schooner with an emphasis on site-specific detail, but it also attempts to place the vessel into a larger cultural context. By observing construction trends in an economic context, it is possible to understand the human influences that governed how and why certain vessel characteristics were selected.

Past investigations of the B Street Schooner consisted of limited surveys in both 1992 (Spirek et al. 1993) and 2005 (Bratten and Cook 2005). These early investigations focused on preliminary mapping and delineating the site’s extents. Although the preliminary surveys gathered data regarding certain aspects of the vessel, they offered only limited insight into the vessel’s possible use and its connection to Pensacola’s history. The results of these investigations
Figure 1: Location of the B Street Schooner (8ES1903) in Pensacola Bay.
state that the vessel is sturdy, large, intact, and possibly burnt. The studies suggest the vessel may have wrecked in one of the hurricanes that hit Pensacola in 1906 and 1916 and, due to its larger size, may be tied to Pensacola’s lumber industry (Spirek et al. 1993:75; Bratten and Cook 2005).

To interpret the site further, UWF conducted additional fieldwork on the B Street Schooner during the summers of 2009 and 2010. This fieldwork included limited excavations and two remote sensing surveys. The goals of the excavation were to delineate the boundaries of the site, recover diagnostic artifacts, and uncover portions of the vessel’s structural components. Divers conducted excavations on three primary areas of the B-Street Schooner: the bow, amidships, and stern.

Although the limited excavations proved difficult due to the loose bottom sediment, several new aspects of the site came into view. The 2009 and 2010 fieldwork resulted in the exposure of several structural elements. Divers mapped and examined frames, outer hull planking, ceiling planking, the keelson assembly, stem, and sternpost. In addition, divers collected wood samples from the structural components to determine the wood species used in the B Street Schooner’s construction.

In the excavation units, divers recovered a handful of artifacts, including ceramic sherds, glass bottles, glass fragments, fasteners, cut lumber, brick, and coal; however, the overall artifact assemblage was small and came from a single stratum of loose sand. In Maritime Archaeology, Keith Muckelroy (1978:177) found that the lack of a non-mobile stratum, such as ballast stone, allowed debris and intrusive artifacts to sink through the sandy overburden. This was the case for the B Street Schooner and, as a result, a majority of artifacts could not be definitively associated with the site. Although a handful of artifacts were collected lying directly on the vessel’s ceiling
planking providing some context, there was not an adequate number of diagnostic artifacts recovered to provide a meaningful analysis. The addition of artifacts from 2005 allowed for a more complete chronological analysis of the entire assemblage. Even though excavation provided some answers, more methods were needed to enhance the archaeological interpretations.

A comparison of the B Street Schooner to other vessels offered a way to utilize the data collected during the 2009 and 2010 fieldwork. By comparing vessels from other marine occupations that utilized Pensacola’s waterfront and are near the remains of the B Street Schooner, it is possible to determine similar construction and design preferences for each. Robin Moore (2002) examined this trend by looking at the connection between a ship’s design and its use in Pensacola. He created three categories based on use: coasting (open-ocean), fishing, and regional vessels (inland water). His results show a correlation between length, breadth, and depth of hold within each category. He found that the vessels with the largest dimensions were coasting vessels, followed by smaller fishing vessels, and finally regional transports, demonstrating a connection between design and occupation. Comparing the B Street Schooner to ships from various occupations and time periods aided in determining the vessel’s date and function.

The multitude of shipwrecks in Pensacola Bay provides a starting point for construction and design information used in this comparison. The University of West Florida has investigated a number of vessels, including Catherine (1869) (Burns 2000, 2003), George T. Lock (1917) (Holland 2006; Sjordal 2007), Rhoda (1864) (Rawls 2004), Palafox (1919), Dinty Moore (1921), and Guanacaste (1917) (Sjordal 2007). UWF also investigated fishing vessels such as Hamilton’s Wreck (1900-1920) (Moore 2002) and the Snapper Wreck (1890-1920) (Raupp
In addition to these six local shipwrecks, the comparison includes the *Governor Stone* from Mississippi (1877) (Sikes 2004).

The results of the comparison between the B Street Schooner and the other wrecks show changes in vessel construction through time. As Moore (2002) found, the correlation between a vessel’s overall shape and the techniques used in its construction were affected by multiple factors, such as technical knowledge, intended routes, anticipated cargo, and economics. Historically, the most prominent factor influencing a vessel’s design was economics, meaning the drive to make a profit was imperative (Steffy 1994:10). As a result, it is important to examine construction and design techniques within an economic context. At certain points in time, due to the different economic influences, speed, maneuverability, cargo capacity, and seaworthiness combined to produce maximum profit for many industries (Lenihan 1983:53). The vessel design that offered the best mix of these characteristics would be chosen more regularly over others due to the importance placed on accumulating capital.

Throughout the history of Pensacola, several different economic periods influenced construction and design trends. For example, during the 1870s Pensacola entered an economic peak due to the growth of the lumber industry, which supplied a new market in Western Europe with southern yellow pine (Gober 1956). These new markets resulted in increased production and export of lumber, and by 1875, Pensacola became the state’s primary lumber producer (Drobney 1997:26). The increase in production and new markets began to influence which vessels produced profit. As a result, vessels that offered strength and cargo-capacity were beneficial, even though crew size and rig created large overhead operating costs.

In contrast, at the turn of the century, Pensacola’s key export suffered because of the lumber industry’s over-exploitation and wasteful practices (Massey 1960). Due to the decline of
a key industry, Pensacola was in a poor economic situation. As a result, older sailing vessels were abandoned or converted into schooner-barges, which were wind-powered vessels towed by steam-powered tugs. The barges offered a large cargo capacity without the added cost of constructing a new vessel and, when towed with steam engines, provided enough speed to make using this type of vessel profitable (Holland 2006; Sjordal 2007).

The rich maritime heritage of Pensacola offers a base for vessel comparison and, when examined within an economic context, creates the opportunity to investigate the B Street Schooner in terms of socioeconomic adaptations. The combination of archaeological data and comparisons to known vessels provides a better means to understand a site that lacks historic documentation and limited associated material culture. These methods also provide a way to expand our knowledge beyond the site. The B Street Schooner exemplifies the impact of economics on how a vessel was built, as its large construction elements and the reason behind its deposition correspond to two different economic situations in Pensacola. In addition, the comparison data shows that shifts in vessel construction correlate to changes in Pensacola’s economic situation. The evidence suggests that economics, particularly the ability of a vessel to produce profit, were the driving factors in ship construction. The study shows the importance that a single vessel can have on our understanding of the past.
CHAPTER II

HISTORICAL CONTEXT

The history of Pensacola’s waterfront near the B Street Schooner site has been diverse with the Spanish, French, British, and United States occupying the city at different points in time. Each occupation affected the city differently in terms of economics, city development, and creation of infrastructure. The different economic periods of the city are best exemplified through the various changes seen along the waterfront.

The Spanish were the first to take advantage of the benefits offered by Pensacola Bay in 1559. The waterfront appealed to Europeans because it offered a protected anchorage and naturally deep harbor. The expedition led by Tristán de Luna y Arellano was ultimately unsuccessful. A hurricane struck the fleet of ten ships, resulting in the loss of seven vessels (Smith et al. 1998; Coker 1999). After the failed colonization attempt in 1559, the Spanish did not return to Pensacola until 1698 when they set up a permanent occupation, Presidio Santa Maria de Galve, in an area west of modern downtown Pensacola and the B Street Schooner site (Coker 1999:8-9). The Spanish returned to Pensacola because both England and France became interested in the area. War between France and Spain resulted in the French burning the presidio in 1719. At the end of the war, the Spanish returned to Pensacola in 1722 and moved the presidio’s location to Santa Rosa Island, a barrier island at the mouth of Pensacola Bay. However, several hurricanes struck the area, destroying the presidio. After several iterations of the presidio on Santa Rosa Island, the Spanish relocated to the mainland of Pensacola in 1756, setting up in the heart of what is now modern downtown Pensacola (Kennedy 2010:33). The Spanish began developing maritime infrastructure because the new location offered a protected area for maritime activity, a naturally deep harbor, and access to raw materials such as clay and
timber (Coker 1999; Kennedy 2010). The earliest use of the waterfront was tied to its economic potential as a suitable place to engage in maritime commerce. A 1764 map shows the plan of the new presidio along the waterfront (Figure 2) (Gauld and Lindsay 1764). Although no wharves are visible, the map does show a piece of land extending seaward perhaps symbolizing a wharf structure. This represents the start of development and growth on the waterfront. The addition of a wharf allowed for sailing vessels to begin accessing the area and exchanging goods.

In 1763, the British received Pensacola from Spain as a result of a treaty at the conclusion of the Seven Years’ War. This was a time of transition in the Gulf of Mexico, as ports in Pensacola, New Orleans, and Mobile experienced constant shifts in ownership of French to British, British to Spanish, and Spanish to the United States. Even though it was an unstable time, Pensacola’s port continued to be an important piece of the maritime economy (Garrison et al. 1989). Although a prominent port in the Gulf, the British (1763-1781) did not take full advantage of the situation offered in Pensacola. Their trade was restricted to Britain or its colonies, limiting the amount of commerce with other ports in the Gulf of Mexico, such as Spanish New Orleans. A 1767 map shows a single wharf near the now British fort (Figure 3) (Library of Congress 1767). However, in comparison to the map from three years previous, there is considerable development landward but no additional maritime infrastructure to the waterfront. This trend in development indicates that the British, like the previous Spanish occupation, focused on using the vast expanses of yellow pine in Pensacola to provide economic support for the city (Rucker 2005:1). The addition of several structures depicted in the 1767 map shows the British used the lumber for local needs such as building forts, houses, and ancillary structures (Phillips 1998). As a result, the British operated a steady yet limited local endeavor.
Figure 2: Detail from 1764 map of Pensacola

Figure 3: Detail from 1767 map of Pensacola
Even with restricted trade, Pensacola still grew economically by providing shipments of timber to the West Indies (Fable 1988: 64). The single wharf in the 1767 map may be an indication of limited vessel traffic along the waterfront at this time. By 1778, considerable development had occurred along the waterfront, and a map from this year details eight wharves now along the waterfront (Figure 4) (Purcell1778). As a result of a series of hurricanes and lack of trade between 1778 and 1781, the British occupation allowed the wharves to fall into disrepair (Kennedy 2010).

Spain captured Pensacola from the British after the Siege of Pensacola in 1781 (Kennedy 2010:68). Spain’s second occupation of Pensacola (1781-1821) continued their commercial trade with ports in the Gulf and traded timber, naval stores, and deerskins with ports such as New Orleans (Moore 2002:13). Even though the city experienced an increased amount of trade with other ports, the Spanish did not greatly alter the waterfront and let the majority of previously built wharves fall into disrepair (Kennedy 2010:69).

In 1821, Spain granted Florida to the United States and, by the 1830s, Pensacola saw increased development along waterfronts and bays, indicating a larger interest in industry (Rucker 2005:15). The addition of a navy yard, production of naval stores such as turpentine and rosin, and several new forts in the local area increased the need for Pensacola lumber and brick. In addition, during the 1830s, the market for lumber and brick expanded beyond local needs. As Pensacola’s lumber industry grew, it provided lumber to new markets in Texas and New Orleans (Drobney 1997). On average, Arcadia Mill, a local water-powered lumber mill, shipped approximately 900,000 board-feet of lumber to ports in Havana, New Orleans, Key West, and Nassau (Rucker 2005:14). Pensacola’s brick industry also experienced growth. Pensacola provided brick to outside markets such as the Dry Tortugas for the creation of masonry
Figure 4: Detail from 1778 Purcell map of Pensacola
forts (Ellsworth 1974). During this time, Pensacola experienced a growth in its economic base, resulting in increased use of sailing vessels to reach new distant markets (Bratten and Cook 2005:20).

As a result of the increase in Pensacola’s economy in the mid-19th century, the city needed more waterfront space to support the growing brick and lumber industries as well as increased sailing vessel traffic (Kennedy 2010:103). An 1859 nautical chart shows newly created land on the waterfront and depicts two solid wharf structures (Figure 5) (United States Coastal Survey [USCS] 1859). Previously, wharf construction consisted of pilings, not filled land. This new style of wharf construction became the preferred method for pier construction, particularly as the waterfront continued to expand (Kennedy 2010:98). The new style of construction would allow warehouses to be built directly on the wharf, providing easy access to vessels and the products they carried. The change in wharf construction indicates that the citizens of Pensacola realized the economic potential of the waterfront and how to start accommodating a large amount of vessel traffic.

Pensacola continued to expand inland into the frontier and further away from the waterfront. As a result, the city needed a connection to the interior to provide the waterfront with valuable raw materials (Moore 2002:14). The first railroad to be built in the Pensacola area was the Alabama and Florida Railroad in 1857 (Kennedy 2010:101). Through new development of infrastructure such as wharves and railroads, the city was able to achieve and maintain a lucrative maritime role until the Civil War.

During the Civil War, the evacuation of the Confederate army from Pensacola severely damaged the city’s infrastructure. The Confederate troops were called out of Pensacola to reinforce troops in Tennessee and focus on other key defense efforts (Rucker 2002:3). The
Figure 5: Detail of Pensacola’s waterfront from a 1859 United States Costal Survey nautical chart

scorched-earth policy employed during the retreat meant the destruction of any material or facility that could be of use to the enemy. On March 10, 1862, under the orders of General Samuel Jones, Lieutenant Colonel William Beard set out to destroy sawmills, stockpiles of lumber, and boats (Rucker 2002:4). The scorched-earth policy destroyed the majority of the city’s industrial base, including the newly finished Alabama and Florida Railroad.

After the Civil War, Pensacola recovered quickly as a result its reliance on the lumber industry, unlike other ports in the Gulf of Mexico that had relied on cotton (Pearson et al. 2003). During the 1870s, Pensacola entered an economic high point due to the growth of the lumber industry, which supplied a new market in Western Europe with southern yellow pine (Gober 1956). These new markets resulted in increased production and export of lumber and, by 1875, Pensacola became the state’s primary lumber producer (Drobney 1997:26). The city maintained 16 major wharves between Bayou Chico and Bayou Texar (Board of Engineers for Rivers and Harbors 1922). The latter served as the main pier of Pensacola during this time and managed the multitude of vessels coming in to take on cargo. Even though some companies exported brick and cotton, lumber dominated the export business. By 1875, the annual value of the shipped lumber reached more than $50,000,000 (Drobney 1997:26).

Pensacola’s fishing industry also took advantage of the port’s deepwater harbor and network of railroads leading to the state’s interior. The city offered a cheap and effective means of ice making in 1871, allowing shipping and storing fish to become economically feasible (Raupp 2004). As a result, the Pensacola Ice Company began the first commercial fishing operation (Raupp 2004:10). Originating in the 1840s with small scale pleasure fishing, people took advantage of red snapper as a food source and the industry would rise to prominence in the city. By the 1880s, the red snapper industry was one of the more prominent industries in
Pensacola and several fish companies, Warren Fish Co. and the E.E. Saunders and Co., opened in Pensacola and operated their own wharves and fishing smacks along the central portions of the waterfront during this time. They remained prominent on the waterfront until the 1930s (Raupp 2004:7-8). The vessels harvested from fisheries that were concentrated along the coastal areas of the Gulf of Mexico.

The 1870s also saw the addition of new railroad lines. The Pensacola and Perdido Railroad was completed in the 1870s connecting the community of Millview, a lumber-mill community on Perdido Bay, to Pensacola’s waterfront (Kennedy 2010). The railroad terminated at a long y-shaped wharf in the bay to the west of the B Street Schooner site. In addition, the Pensacola and Mobile railroad was completed linking the town of Muscogee to downtown Pensacola where the line terminated at the Muscogee wharf on the eastern edge of the waterfront (Kennedy 2010:107).

During the last decade of the 19th century, railroad companies were the driving force behind improvements to the waterfront, allowing the port to accommodate the large number of vessels and amount of material being moved (Holland 2006:13). Railroad companies improved the waterfront by building warehouses and railroad wharves. At the start of the 20th century, several railroads companies such as the Louisville and Nashville Railroad (L&N) owned and operated several wharves including Muscogee, Commendencia, and Tarragona wharves, which were at the heart of the waterfront enterprise (Holland 2006:14). With the addition of more railroads to the waterfront and improved infrastructure, business was booming.

An 1885 Bird’s-Eye view map of Pensacola depicts the several wharves, making up Pensacola’s main pier and the multitude of vessels in Pensacola’s port (Figure 6). It portrays a large amount of development along the waterfront especially when compared to the 1859 USCS
Figure 6: 1885 Birds-Eye view of Pensacola
map. The development of the waterfront is not depicted well during the middle of the 19th century. The USCS charts did not depict the changes of the waterfront for several years, instead focusing on changes to the seafloor condition of Pensacola Bay. As a result, the growth of Pensacola is not seen until the 1892 USCS nautical chart. The chart from 1892 depicts similar maritime infrastructure as the 1885 birds eye view (Figure 7) (USCS 1892). The similarity of the two maps may be a sign of economic stability.

Historically, the area surrounding the B Street Schooner saw limited use along the waterfront prior to the 1900s. The 1892 nautical chart depicts the O. Bronnum sawmill in operation utilizing a single wharf, Perdido wharf, and a large rock pile (8ES3366). The maps do not depict any development of filled wharves in the area. The O. Bronnum mill, the only businesses using this area, was destroyed soon after in a 1896 hurricane (Kennedy 2010:144). The western portion of Pensacola’s waterfront, near the B Street Schooner, did not have established wharves or businesses until after the first decade of the 20th century.

At the turn of the century, the area surrounding the B Street Schooner was subject to multiple building episodes. In 1913, the western portion of Pensacola’s waterfront now contained several different business and wharves, which crowded the water’s edge. To the east of the site is an area that was home to several different railroad lines, such as the Gulf, Florida, and Alabama Railroad (G. F. & A. Railroad) (1911-1913). The G. F. & A. Railroad, in order to escape the overcrowded waterfront, created a parcel of land in 1913 by filling in the waterfront. However, a nautical chart released in 1914 does not show the new parcel of land and it is not depicted until 1921 (USCS 1914, 1921). Throughout the early part of the 1900s, other railroad companies used this peninsula, such as the Muscle, Shoals, Birmingham and Pensacola Railroad (M. S. B. & P.
Figure 7: Detail of Pensacola’s waterfront from a 1892 USCS nautical chart
Railroad) (1922), and the Frisco System (1926-1927) (Board of Engineers for Rivers and Harbors 1922, 1929).

To the northeast of the B Street Schooner, the Bruce Dry Dock Company relocated to Pensacola’s waterfront from Bagdad, Florida in 1917, directly adjacent to the area created by the G. F. & A. Railroad in 1913. Soon after the Bruce Dry Dock Company’s relocation, they filed for permits to dredge a channel to provide access for large vessels to use the dry dock (Bruce Dry Dock Company 1917; Kennedy 2010). The company’s application to the U.S. Army Corps of Engineers shows the proposed dredge area measuring 1250 ft. long, 160 ft. wide, and 18 ft. in depth (Bruce Dry Dock Company 1917). Approximately 250,000 cu. ft. of sand was removed from the proposed channel area (Pensacola Journal 1917c). The dredging process created several acres of land to the west of the G. F. & A. docks, yet the 1917 dredging application does not show any land to the west of G. F. & A. Railroad, except Perdido wharf (Pensacola Journal 1917b). A 1921 nautical chart of Pensacola Bay does show a new parcel of land to the west of the G. F. & A. docks (Figure 8) (USCS 1921). Unfortunately, no nautical charts could be located between 1914 and 1921 to determine if the dredging performed by the Bruce Dry Dock Company altered the waterfront. It is likely Bruce Dry Dock did create the peninsula directly north of B Street Schooner because it is not present on the original application and is depicted on later nautical charts.

In 1919, the Texas Company leased land with approval from the city from the Bruce Dry Dock Company (Pensacola Journal 1919). A 1922 port series report on Pensacola pinpoints the location of the Texas Company on the peninsula most likely created by the Bruce Dry Dock Company (Board of Engineers for Rivers and Harbors 1922). Based on the occupation of the peninsula, it is likely that it was created between 1917, when the dredging occurred, and 1919,
Figure 8: Detail of Pensacola’s waterfront from the 1921 USCS nautical chart
when the Texas Company established its business on the waterfront. The Texas Company
created a pipeline wharf in close proximity to the B Street Schooner site. This property was later
leased to the Sherrill Oil Company in 1929 (Board of Engineers for Rivers and Harbors 1929).
The continued occupation and use of the western portion of the waterfront indicates that this area
offered an economically beneficial location for businesses to operate. The close proximity of the
B Street Schooner to this area may indicate the vessel was a part of the maritime industry in the
area.

Around 1930, lumber, Pensacola’s key export suffered. Robert Massey (1960) indicates
that the lumber industry boom was a prime example of over-exploitation and wasteful practices,
which led to its decline. As a result, Pensacola suffered economically due to its overreliance on
the lumber industry (Holland 2006:19). In addition to the lumber industry, the fishing industry
also suffered during this time. Over-fishing, a lack of good crews, and several labor strikes
negatively affected the business. By the 1930s, the fishing industry had bottomed out (Raupp
2004:22). Hurricanes created a large amount of damage to both the wharves and the vessels in
the bay, which also badly damaged the infrastructure of the waterfront (The Floridian 1821;
Pensacola Gazette 1842, 1852a, 1852b; Pensacola Commercial 1882; Daily News 1893b, 1906;
Pensacola Journal 1916, 1917a, 1926). Although attempts were made to improve the economy
of the waterfront in the 1930s, the city could not adjust its markets to deal with the lack of export
lumber. The damage done by the hurricanes and the loss of prime businesses, such as lumber and
fishing, ultimately led to the decline of Pensacola’s waterfront.

The history of Pensacola waterfront highlights the continued use and manipulation of the
maritime landscape. As the waterfront experienced growth, decline or war, new land was added,
wharves fell into disrepair or industry was destroyed. Although the waterfront’s history was
tumultuous, it was a key piece to Pensacola’s economy. The waterfront served as a location to load and unload vessels, connecting the city to nearby ports or locations across the open ocean and bringing in several types of vessels to take part in Pensacola’s maritime industry. The use of sailing vessels like the B Street Schooner was key in making Pensacola a prominent port. The close proximity of the B Street Schooner to the waterfront connects the vessel to the up and down economics experienced in Pensacola.
CHAPTER III
SITE DESCRIPTION AND PREVIOUS INVESTIGATIONS OF THE B STREET SCHOONER

Site Description

The remains of the B Street Schooner (8ES1903) are located in Pensacola Bay, Florida, east of Bayou Chico along the western edge of Pensacola’s waterfront (Figure 1). The vessel is located on what appears to be a shallow peninsula near the shoreline between South Clubbs Street and South Coyle Street. However, archaeologists named the vessel after a street to the west of the site, B Street, during its initial documentation in 1992 (Spirek et al. 1993). The B Street Schooner rests in a sandy bottom sediment in 1.5 to 2.1 m (5–7 ft.) of water, with visibility averaging 1.5 to 2.1 m (5–7 ft.). At the start of this investigation, the exposed elements of the vessel included frames, iron pipes, fasteners, outer hull and ceiling planking, and cupreous sheathing. The remains of the vessel are well articulated and the bottom portion of the hull is intact. The vessel’s shallow location makes it visible in aerial and satellite photographs as its exposed frames create a clear delineation of the vessel’s boundaries.

Due to the B Street Schooner’s close proximity to shore, impacts from the land-based operations on the shoreline affect the site. The waterfront houses a variety of elements such as fuel tanks, a wetland mitigation site created in the 1990s, and the newly constructed Community Maritime Park. Prior to 2011, the cultural impacts associated with the B Street Schooner had been minimal, even though fishing is common in the area near the vessel. Although there are signs of minor disturbances, most likely caused by sport divers in search of fasteners, no major impacts to the vessel were recorded. As part of the construction of the new Community Maritime Park, the B Street Schooner is now covered with sand and rock in order to create an additional
wetland mitigation area. The designs for the mitigation called for a rock breakwater to surround the site and sand fill to bring water depth to approximately two feet in order to allow aquatic vegetation to grow (Cook and Perrine 2011). As a result, the B Street Schooner was buried under five feet of sand, making any future investigations/excavations unlikely.

The area surrounding the B Street Schooner experienced several filling episodes. Historically, as companies became established on Pensacola’s waterfront, they created space by building up new land formations (Figure 8). These filling activities altered the landscape of the waterfront. For example, the peninsula directly north of the B Street Schooner and the peninsula to the east are manmade features of the landscape, created by the Bruce Dry Dock and the Gulf, Florida, and Alabama Railroad respectively (Kennedy 2010:160). The newly created land contained several high-activity wharves for an extended period, from the 1870s to the 1930s (Burns 2000; Kennedy 2010). As a result of continued use of the surrounding area, the B Street Schooner may have been subjected to occasional impacts such as dredging and filling associated with additional land creation and maintaining of barge channels. These activities create a possibility for a disturbed archaeological context of the B Street Schooner.

**Surrounding Cultural Resources**

The continued use of the area surrounding the site creates the possibility for other cultural resources that may be related to the B Street Schooner. The cultural resources are related to various aspects of Pensacola’s history and may shed light on how this portion of the waterfront was utilized. Several archaeological investigations have taken place in order to locate these cultural resources (Franklin et al. 1992; Phillips 1993; Spirek et al. 1993; Bratten and Cook 2005; Cook 2006; Kennedy 2010).
One additional shipwreck exists in the area, the B Street Barge (8ES2642), located approximately 70 m (230 ft.) to the northwest of the B Street Schooner (Figure 9). The barge measures 23.6 m (77.3 ft.) in length and 8.8 m (28.8 ft.) in beam. Hand fanning by divers uncovered wood chips in the bow of the vessel. During the second phase of the Pensacola Shipwreck Survey under the Florida Bureau of Archaeological Research, archaeologists determined that the wreck was a wooden barge with a flat bottom possibly connected to the lumber industry (Spirek et al. 1993:76). In 2010, divers relocated the barge and noted several frames and an iron bollard exposed above the sea floor. The B Street Barge may have been abandoned or wrecked after 1922, as the barge does not appear in a 1922 aerial photograph of area (Board of Engineers for Rivers and Harbors 1922). Similar to the B Street Schooner, the B Street Barge was covered with sand and rock as part of the 2011 wetland mitigation project.

Another previously recorded site near the B Street Schooner is 8ES2960, the possible remnants of a dry dock associated with the Bruce Dry Dock Company (Franklin et al. 1992:209). However, the second Pensacola Shipwreck Survey in 1992 determined that the remains of the potential dry dock identified during the 1991 portion of the survey were mistaken for that of a sunken vessel, the B Street Schooner (Spirek et al. 1993:75).

To the south of the B Street Schooner are the remains of a historic ballast pile, locally known as the “large rock pile” (8ES3366). Investigation of the rock pile took place during the 2008 UWF Maritime Field School. The goal of the fieldwork included mapping the site and collection of diagnostic artifacts. Kendra Kennedy (2010) suggests that these ballast piles were created as vessels entered port and unloaded ballast in order to make room for cargo. Henry Baars created this ballast pile between 1873 and 1877 by erecting a wooden pen and filling it with
Figure 9: Detail from an aerial image of B Street Barge (8ES2642) and B Street Schooner (8ES1903)
different sized ballast stones until the surface of the pile was above the waterline (Kennedy 2010:236). Baars then constructed a series of buildings and a timber boom on top of the pile and it served as the foundation for a small lumber company until 1877. Known at the time as Rat Island, the rock pile had many different owners from 1877 through the turn of the century. In 1920, it became the property of Thomas A. Johnson, president of the Bruce Dry Dock Company. In 1949, the city of Pensacola foreclosed on Rat Island because Johnson failed to pay various taxes levied on the property (Kennedy 2010:246). The city still owns the area today and it has become a common fishing spot with no wooden structure remaining.

On the eastern side of the B Street Schooner area are the remains of the Bruce Dry Dock Company (8ES2690) and the Trillium Parcel. The latter is the location of the Community Maritime Park. The Trillium Parcel housed the O. Bronnum Mill (8ES1963) and several railroad companies. Due to modern construction episodes, no features of the O. Bronnum Mill site could be located during the 1992 University of West Florida mill reconnaissance survey (Phillips 1993). In addition, no aspects of the several railroad companies that once owned this parcel, the Gulf, Florida, and Alabama Railroad (G. F. & A. Railroad), The Muscle, Shoals, Birmingham, and Pensacola Railroad (M. S. B. & P. Railroad) and Frisco Railroad, were found.

In 2006, the University of West Florida conducted a remote sensing survey south of the Trillium Parcel in Pensacola Bay to identify cultural resources potentially impacted from proposed dredging (Cook 2006). Divers investigated several anomalies through visual investigation and identified some of them as pier structure. Other identified structures were likely modern, isolated, and possibly the result of discard activity (Cook 2006:21).

The lack of archaeological remains associated with the historic waterfront activity may be a result of several building episodes, historic and modern, which either destroyed or covered the
sites. The historical record indicates that the waterfront provided a space for the operation of Pensacola’s maritime commerce, and several businesses operated wharves for storing lumber, loading and off loading cargo, as well as coal and oil bunkering services (Board of Engineers for Rivers and Harbors 1922; Kennedy 2010). In addition, railroad wharves provided a connection to interior states, making the portion of the waterfront near the B Street Schooner of economic importance. The close proximity of the B Street Schooner to these areas of historic maritime activity suggests a disturbed archaeological context.

**Previous Investigations of the B Street Schooner**

In 1992, the B Street Schooner was initially investigated as part of the second phase of the Pensacola Shipwreck Survey (PSS) (Spirek et al. 1993). The PSS started in 1991 under the direction of state underwater archaeologist Roger Smith. The goal of the survey was to compile a comprehensive list of shipwreck sites in the Pensacola area. Phase One was performed in 1991 and consisted of remote sensing, with magnetometer and side-scan sonar, ground-truthing of anomalies, and compiling a list of sites (Franklin et al. 1992). The survey extended into a second phase in 1992 in order to expanded on the remote sensing and ground-truthing performed in 1991. During the 1992 fieldwork, a member of the local community pointed out the B Street Schooner to the dive team. The dive team noted several exposed frames, sheathing, cupreous fasteners, and signs of fire and were able to record the uncovered elements of the site (Spirek et al. 1993:75).

The University of West Florida (UWF) revisited the site in 2005 during a remote sensing survey of Pensacola’s waterfront (Bratten and Cook 2005). UWF performed the survey in order create a remote sensing and ground-truthing methodology in order to aid in locating submerged cultural resources. They identified cultural resources that may be potentially impacted through
modern development of Pensacola’s waterfront (Bratten and Cook 2005). UWF used a Sea Spy
towed Overhauser magnetometer and a Marine Sonics Technology 600 kHz side scan sonar
towfish for the survey. The survey area consisted of the waterfront from Bayou Chico to Bayou
Texar and extended from the shoreline to 1,000 yards out into Pensacola Bay. The 2005 UWF
Maritime Field School investigated the promising anomalies identified during the survey. In
order to ground-truth the targets, dive teams conducted circle searches in conjunction with
probes and metal detectors.

One of the anomalies investigated during the 2005 field school was the B Street
Schooner. The field crew participating in the course laid a baseline through the center of the
vessel and placed additional datums at north, south, east, and west points along the vessel
(Bratten and Cook 2005). The crew used a combination of baseline and offset measurements and
the Direct Survey Method (DSM), a computer-based mapping program developed by Nick Rule,
to map in the vessel and specific features of the wreck (Figure 10). The field school collected
scantlings, including sided and molded, and room and space dimensions of the B Street
Schooner’s frames. Although hand fanning and removal of artifacts was minimal, the 2005 field
school did recover various artifacts such as a Bristol Glazed Stoneware sherd (1835-1900), other
stoneware sherds, fasteners, an early 20th-century whiskey bottle, sheathing, coal, and brick
(Bratten and Cook 2005:62).

Remote Sensing Surveys

Although this investigation into the B Street Schooner primarily utilized excavation to
obtain data, two remote sensing surveys were incorporated into the study. Due to the large size of
the vessel and time constraints for fieldwork, the excavations could not cover a large area. The
collection of remote sensing data offered a non-intrusive way to investigate the site and the
Figure 10: 2005 site plan of the B Street Schooner

Legend

- Datum
- Frame Number
- Scotch whiskey bottle (ca. 1906)
- Burned whiteware
- Spike
- White and Tan Bristol Slip Stoneware (ca. 1850-1930)
- Modern bottle (ca. 1940s)
- Copper sheathing
- Colonial brick
- Brass nail fragment
- Treenail
- Lead glazed stoneware

Courtesy of the University of West Florida Archaeology Institute 2005.
Illustration by W. Abrahamson
surrounding area. During the 2010 UWF Maritime Field School, the field crew used a SyQwest Stratabox to sub-bottom profile the site. For this portion of the remote sensing fieldwork, survey lines were not controlled due to complications with the GPS system and Hypack, a hydrographic survey software used to control survey lines and manage data. The crew mitigated the problem by arbitrarily running survey lines east to west and north to south, covering the bow, stern, and amidships portions of the B Street Schooner. As data was collected in Hypack, annotations were made when the survey boat passed over the site marked by surface buoys.

The results of the sub-bottom profiling were inconclusive. The hope was that the data would show the shape of the vessel below the sediment as well as determine if any cargo, such as lumber, coal, or brick, remained in the vessel. However, the environmental settings of the site are not favorable for the use of a sub-bottom profiler. The shallow conditions did not provide a sufficient water depth between the echo sounder and the bay floor for the sub-bottom profiler to work properly. In addition, the sandy bottom sediment, when compared to other sediments such as silts, did not allow the acoustics to penetrate deep enough to create a clear signature of the B Street Schooner. As a result, the data collected did not provide any evidence of the vessel’s shape or the presence or absence of cargo.

Although UWF concluded excavations of the B Street Schooner at the end of summer 2010, the university performed another remote sensing survey during the summer of 2011, as part of the archaeological mitigation procedures for the construction of the wetland improvement site for the Community Maritime Park. The survey area for this project included the B Street Schooner, the B Street Barge, and the area surrounding both sites. The goal of the survey was to determine if other potential cultural resources in addition to the two known vessels were present in the area of impact (Cook and Perrine 2011). The survey used both a Sea Spy towed
magnetometer and a 600 KHz Marine Sonics side-scan sonar. In contrast to the 2010 remote sensing survey, position was controlled with the Hypack 2011 navigational software. Fifteen east-west survey lines, at 15 m intervals, were pre-plotted in order to cover the survey area thoroughly. Post-processing of the magnetometer and side-scan sonar data utilized Hypack 2011 and Chesapeake Technology SonarWiz 5 software.

At the start of the magnetometer portion of the survey, large amounts of sand had already been deposited in the survey area. As a result, the first lines of the survey could not follow the pre-planned lines, but instead followed the new contour of the shoreline. In total, the survey crew ran 14 survey lines using the magnetometer. Due to the shallow conditions in the survey area, a float was taped to the magnetometer fish to allow it to float at the surface while it was towed behind a small boat. The survey identified 32 magnetic anomalies, including anomalies representing the B Street Schooner (Figure 11). The B Street Schooner’s magnetic signature appears to be an elongated complex dipole with a magnitude averaging 210 gammas. Although several targets were identified, many of them were discounted due to their extremely high magnitudes, which generally indicates modern structure. In addition, many of the located anomalies were outside of the designated project area, reducing the number of targets within the survey area to 11.

Utilizing the same survey lines plotted for the magnetometer, the survey crew ran four survey lines east-west and two lines north-south using the side-scan sonar to cover the survey area and image the B Street Schooner (Cook and Perrine 2011). As with the sub-bottom echo sounder, the side-scan sonar fish needs approximately four feet of water between it and the sea floor to work properly. The fish was approximately one foot below the surface in a depth that averaged seven feet, barely covering the minimum requirements. The side-scan sonar did
Figure 11: Magnetic anomaly contours of the B Street Schooner site
produce clear images of a handful of anomalies including the B Street Schooner (Figure 12). Three side-scan sonar anomalies were identified and all of them were outside the project area. Based on their location, the sonar anomalies are likely associated with the construction of large modern pilings and correspond with large magnetic anomalies.

All of the targets within the survey area were magnetic anomalies. Due to the historic use of the survey area as a wharf, larger complex anomalies were given high priority for ground-truthing whereas the smaller monopole magnetic anomalies were given low priority for further investigation by divers. These criteria reduced the targets for ground-truthing to three high priority targets. During the ground-truthing phase of the survey, divers conducted circle-searches in three meter increments using fiberglass probes and a metal detector. Once located, divers used a water induction dredge for test excavations of the objects. After the objects were exposed, they were photographed and mapped.

The B Street Barge was added to the list of targets for further investigation. Prior to the survey, large amounts of sand were deposited in the immediate area of the barge. Although a known site, it was important to determine the possible significance of the barge. Divers were unable to relocate the B Street Barge because it was buried under the recently deposited sand. No further investigation was possible as the result of the B Street Barge’s burial. It remains that the barge most likely came to its current location after 1922 and may have been associated with the lumber industry (Spirek et al. 1993).

Divers located objects in the areas of the three magnetic anomalies. The three anomalies were modern debris: iron pipes, machinery, and several concretions. The objects found in the locations of the three anomalies were isolated and could not be associated with any significant
Figure 12: Side-scan sonar image of the B Street Schooner
resources or the B Street Schooner. Their presence in the area is likely the result of the area’s long use as a wharf or modern dumping activity (Cook and Perrine 2011).

**Conclusion**

Although the waterfront near the B Street Schooner is presently not a major area of maritime activity, it once housed several historic businesses, wharves, and railroads before and after the turn of the century. The remote sensing surveys in 2006, 2010, and 2011 identified the remains of old pier structure, as well as large amounts of debris. The remote sensing data corresponds with areas that were once busy wharves. The presence of shipwrecks near places of historic maritime activity suggests that the B Street Schooner may be connected to the cultural resources surrounding the site.

The 1992 and 2005 investigations of the B Street Schooner offer only preliminary interpretations of the site. They state that the vessel likely dates to the late-19th or early-20th century, appears burnt, and, due to its large size, may be associated with Pensacola’s lumber industry (Spirek et al. 1993; Bratten and Cook 2005). They also suggest that the B Street Schooner was a victim of the many hurricanes to hit Pensacola in the early 1900s (Spirek et al. 1993; Bratten and Cook 2005). These investigations were preliminary and thus did not delve deeper into relating the vessel to Pensacola’s broader maritime. This research attempts to make these connections through the use of archaeological and historical research in order gain more detail about the B Street Schooner and connect to the larger context of Pensacola’s history.
CHAPTER IV

2009 AND 2010 FIELDWORK ON THE B STREET SCHOONER

Although the B Street Schooner has been the subject of several non-intrusive investigations (Spirek et al. 1993; Bratten and Cook 2005; Cook and Perrine 2011), these studies only collected limited data regarding the history of the vessel and its connection to Pensacola’s history. From the investigations in 1992, 2005, and 2011, the data available on the B Street Schooner is limited to overall measurements of the exposed elements. In order to expand on the available data, the 2009 and 2010 fieldwork needed to uncover structural remains and recover diagnostic artifacts to relate the B Street Schooner to a use, a time, and a reason for its deposition. To accomplish this goal, the field crews conducted test excavations. Three areas of the site were selected for testing: the amidships, bow, and stern. By focusing on these areas, the chance of encountering key diagnostic structures such as the maststep and diagnostic artifacts increased.

Methods

Excavations took place during the summers of 2009 and 2010, as a part of two UWF Maritime Field Schools. In 2009, the field crew worked on the site for a total of eight days. The site was part of a work rotation and visited once or twice a week for five weeks. In 2010, the crew spent two consecutive weeks excavating the B Street Schooner. During the excavations, a variety of equipment and materials were utilized. Field crews used pontoon boats as work platforms during dive operations. The ample floor space and shallow draft of the boat allowed for crew and gear to reach the shallow site. Although the site is in five to seven feet of water depth, divers utilized SCUBA equipment, allowing access to the site without the need to surface. While working on site, divers made drawings, notes, and measurements on mylar sheets, a
plastic-like material which can be written on underwater. In order to excavate selected areas, divers used a water induction dredge. The dredge acts as an underwater vacuum, siphoning sediment through a series of hoses and away from the excavation area. The sediment passes through a mesh bag on the end of the exhaust hose and what remains in the bag is known as dredge spoil. At the conclusion of each workday, the field crew screened the dredge spoil through 1/16 inch mesh to collect smaller artifacts.

Although the 2005 field crew established four datums at north, south, east, and west points on the B Street Schooner, the 2009 field school was unable to relocate the datums and, as a result, established a new baseline and grid system. Two four-foot lengths of rebar, driven into the bay floor, designated the north and south datums. Divers stretched metric reel tapes between the rebar to create a baseline. The datums were set approximately ten meters away from the stem and stern of the B Street Schooner, with the baseline running along the centerline of the vessel. By placing the datums ten meters away from the vessel, divers could perform metal detector searches outside the physical remains to delineate the extent of the site’s debris field and possibly locate other anomalies. The metal detector searches were not performed due to time constraints.

In 2009, excavations focused on the midships portion of the B Street Schooner. This area offered the possibility of encountering key structural elements, such as the maststep, and the potential for uncovering elements of the vessel’s cargo. At the start of the excavations, a trench was slated to cover the entire breadth of the B Street Schooner’s amidships, at 32 m on the new baseline. Divers triangulated a single 1 x 1 m unit of aluminum grid material next to the vessel’s frames, 5 m east of the baseline along the edge of the vessel. The aluminum grid delineated the excavation unit. The northeast corner of the unit served as a reference point from which the
divers referred to for artifact provenience, measurements, and drawings. The use of grid material and designated units allowed for controlled excavation on a small area of the vessel.

The size of the 1 x 1 m units proved to be too small and did not expose a large enough area when compared to the overall size of the vessel. One unit exposed approximately 1.5% of the vessel. In addition, the sandy bottom continually slumped into the 1 x 1 m unit, limiting its effectiveness. To minimize slumping, the original unit was expanded to the south and west to create a 2 x 2 m unit.

Due to the extremes at which the sand fell into the unit while excavating, the 2009 field school explored new methods to limit slumping. As stated before, one technique was to expand the size of the amidships units from 1 x 1 m to 2 x 2 m. The increase in unit size created a conical shape to the slumping walls, leaving a small area exposed in the center. However, this technique did not resolve the issue adequately, as a majority of the unit remained buried at any given time. As an alternative, a metal “cofferdam” unit was constructed (Figure 13). This was roughly a 1 x 1 m unit with solid aluminum walls. In theory, excavation would occur within the metal box and the unit would move down by gravity as sand was removed, creating walls that prevented the sand from falling back into the unit. However, this technique proved to be of limited use. Once any part of the “cofferdam” hit lumber or a structural element, it stopped moving and sand leaked into the unit from underneath the metal walls. In addition, wave action caused by the shallow location of the B Street Schooner tended to rock the metal box, potentially damaging the remains of the vessel. These problems led to the abandonment of this method.

Ultimately, the expansion of units proved to be fairly successful; however, it increased the amount of time it took to excavate the hull of the vessel. As a result, the 2009 fieldwork did
Figure 13: Crew placing the “cofferdam” unit on the site
not expose any significant structural features of the B Street Schooner. Due to the difficulties encountered, only one 2 x 2 m unit was excavated down to the hull and a second 2 x 2 m unit to the west was opened but not completed.

In 2010, excavation shifted from amidships to the bow and stern of the B Street Schooner. Although the trench in the amidships was not completed, the potential arrival of oil into Pensacola Bay from the Deep Water Horizon oil spill created a need to complete fieldwork in a hasty manner. Due to the time consuming excavations from the previous summer, the field crew focused on the other areas of the vessel before oil reached Pensacola. Students from the 2010 field school spent a total of two weeks on the B Street Schooner before oil from the spill reached Pensacola Bay and stopped excavations.

Excavation in the bow and stern of the B Street Schooner utilized the exposed frames of the vessel, which served as clear boundaries for establishing provenience of any finds, allowing excavations to take place within the limits of the vessel. The change in excavation methods allowed for exposure of larger areas of the vessel. Divers took measurements of structures and artifacts using baseline and offset measurements.

When oil entered the bay, divers had excavated significant portions of the bow and stern down to hull structure. In addition, divers collected a series of wood samples from the exposed structures such as frames, planking, stem, keelson, and rider keelson. Dr. Amy Mitchell-Cook analyzed the wood sample to determine wood type and species (Table 1).

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>WOOD SAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description/Location</strong></td>
<td><strong>Species</strong></td>
</tr>
<tr>
<td>Ceiling Plank /Stern</td>
<td>Southern Yellow Pine (Pinus palustris)</td>
</tr>
<tr>
<td>Keelson/Stern</td>
<td>Southern Yellow Pine (Pinus palustris)</td>
</tr>
<tr>
<td>Outer Hull Plank/Bow</td>
<td>Southern Yellow Pine (Pinus palustris)</td>
</tr>
<tr>
<td>Treenail/Stern/Port</td>
<td>Beech (Fagus gandifulia)</td>
</tr>
</tbody>
</table>
TABLE 1
WOOD SAMPLES (continued)

<table>
<thead>
<tr>
<th>Description/Location</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling Plank /Stern/Starboard</td>
<td>Southern Yellow Pine (Pinus palustris)</td>
</tr>
<tr>
<td>Treenail/Stern/Port</td>
<td>Southern Yellow Pine (Pinus palustris)</td>
</tr>
<tr>
<td>Stem</td>
<td>White Oak (Quercus alba)</td>
</tr>
<tr>
<td>Lumber</td>
<td>Southern Yellow Pine (Pinus palustris)</td>
</tr>
<tr>
<td>Lumber</td>
<td>Southern Yellow Pine (Pinus palustris)</td>
</tr>
<tr>
<td>Keelson/Stern</td>
<td>White Oak (Quercus alba)</td>
</tr>
<tr>
<td>Structural Timber next to Keelson</td>
<td>Southern Yellow Pine (Pinus palustris)</td>
</tr>
<tr>
<td>Rider Keelson</td>
<td>Southern Yellow Pine (Pinus palustris)</td>
</tr>
<tr>
<td>Wood Stave/Bow</td>
<td>Southern Yellow Pine (Pinus palustris)</td>
</tr>
<tr>
<td>Frame/Bow/Starboard</td>
<td>White Oak (Quercus alba)</td>
</tr>
<tr>
<td>Stemson</td>
<td>White Oak (Quercus alba)</td>
</tr>
</tbody>
</table>

The loose sandy bottom continued to be a limiting factor. During excavations, divers placed several sandbags to act as a dam against incoming sand. In addition, a new, more powerful, water induction dredge removed sediment at an increased rate, decreasing the amount of sand that could fall into the unit. The combination of a more powerful induction dredge and the use of sandbags proved to be the most successful technique to limit slumping.

Loose sand also affected the excavator’s ability to maintain provenience during the excavations. The fluid nature of the sediment within the hull resulted in few depth measurements except when an artifact sat directly on the hull or while profiling the vessel. Sand fell into excavation areas from over a meter away. As a result, it was difficult to maintain vertical provenience. The sand created a conical shape as it refilled the unit, as opposed to an even flat floor and vertical walls expected in traditional archaeological excavations. Although 20 cm levels were used initially, they did not offer any added context as the conical shape made it difficult to discern a specific depth the artifacts were recovered from.

The artifact assemblage underwent processing, stabilization, and conservation at the UWF Conservation Laboratory. The techniques for conservation followed Donny Hamilton’s
(1998) manual for conserving artifacts recovered from underwater sites and can be found in Appendix A. After conservation, an Excel database was created incorporating the artifacts from 2005, 2009, and 2010 to facilitate analysis. Conservation of the artifact assemblage was completed in the fall of 2011 and the artifacts are currently in curation at UWF.

**Construction**

Each investigation revealed several insights into the B Street Schooner. They revealed that the vessel measures 45.6 m (149.6 ft.) in length and 10.5 m (34 ft.) in beam and only the bottom portion of the vessel remains (Figure 14). The excavation in the bow and stern indicate that the vessel is oriented north to south, with the stern facing the shore. Divers removed approximately 46 cm of sand from the stern of the vessel to reveal hull structure. The vessel’s structural timbers are large and sturdy. Ceiling and outer hull planking, both southern yellow pine (*Pinus palustris*), are 9.2 cm (3.6 in.) in thickness. However, the ceiling was wider at 27.43 cm (10.8 in.), than the outer hull planking at 14.38 cm (5.66 in.). The vessel’s length, when compared to various line drawings of a similar size, suggests it had at least three masts (Chapelle 1935). Some concretions of wire rope were present in the stern of the vessel. Wire rope became common on sailing vessels during the 1870s, and provided a durable material lowering operating costs (Burns 2000:66)

An X-ray Fluorescence (XRF) metallurgical analysis revealed that the vessel is sheathed with a cupreous metal that is composed of approximately 64% copper, 33% zinc, and 3% other metals (Figure 15). This composition is known as yellow metal, or Muntz metal (McCarthy 1996:202). Sheathing tacks of a similar composition hold the sheathing to the B Street Schooner. Similar analysis was performed on other fasteners collected during the excavations. Cupreous metal spikes and through-bolts hold the frames and planking together (Figure 16). The XRF
Figure 14: 2010 site plan of the B Street Schooner. (a) outer hull planking; (b) ceiling planking; (c) lumber; (d) stemson; (e) stem; (f) rider keelson; (g) stern post
Figure 15: Cupreous sheathing

Figure 16: Cupreous spike
analysis showed that the spike is composed of 66% copper, 31.6% zinc, and 1.25% tin. The spike has a square shank, blunt wedge tip, and measures 19.8 cm (7.8 in.) in length. Through-bolts exhibit a ball-peened end and a clinch ring. The bolt measures 55 cm (21.7 in.) in length and 1.5 cm (0.6 in.) in diameter. It was mostly likely used to fasten the outer hull planking, frame, and ceiling planking together. In addition, the ship builders used treenails to attach planking to the frames. Of the two recovered treenails, one was southern yellow pine and the other beech (*Fagus grandifolia*). In the stern and bow of the vessel, iron bolts and drift pins fastened the main structural elements together.

Several of B Street Schooner’s frames are visible above the bay floor. The remains of frames consist of floor timbers and, possibly, portions of first futtocks. Wood samples revealed that frames are white oak (*Quercus alba*). Although ceiling planking covers the frame assembly, frames appear to be single rather than double frames (Spirek et al. 1993:75). B Street Schooner’s frames have a molded dimension that averages 27.5 cm (10.8 in.) and sided dimensions averaging 28.5 cm (11.2 in.). Frames are spaced close together, averaging 9 cm (3.5 in.) of space between each other. Room averages 30.48 cm (12 in.).

The bow of the B Street Schooner consists of the remains of the stem, apron, and stemson, of which, the stem and stemson are white oak (Figure 17). The stemson is the forward extension of the keelson and is attached to the apron (Desmond 1919:59). Divers located several mortises on the stemson; however, they did not find remnants of the stantions. On the starboard side of the vessel’s bow, planking and cant frames appear broken and are detached from the stem while the port side remains intact.

In B Street Schooner’s stern, several structural elements were uncovered. Divers identified the white oak sternpost and a number of y-frames leading up to the first set of floor
Figure 17: Illustration of the bow excavation

Illustration by Author
timbers. Several other timbers were uncovered but only the tops of them were exposed. These timbers may be pieces of deadwood, stern knee, or inner sternpost. No sign of the rudder or gudgeons were indentified, making it difficult to positively identify some of the timbers in the stern of the vessel. Additionally, divers noted iron plates between each structure; however, their function is unknown. Divers also uncovered the keelson assembly in the stern of the B Street Schooner, from which several wood samples were recovered. One portion of the keelson is white oak. A second sample from the keelson and the rider keelson were southern yellow pine. In addition, divers located two structural timbers on either side of the keelson, which were later identified as southern yellow pine (Figure 18). These are short square timbers fastened with a large iron pin to a floor timber. The two different wood samples from the keelson, in conjunction with the additional structural timbers, may indicate that the B Street Schooner was, at one point, repaired during its career. In addition, divers noted a slag like residue on portions of the keelson in the stern of the vessel, which supports the suspicion that the vessel had burned.

Based on the use of thick planking, close spacing of single frames, a rider keelson, and the use of white oak structural timbers, it appears that the B Street Schooner was built for strength and may indicate the vessel was designed to withstand the stress of open-water transit. The use of two additional southern yellow pine timbers, butted on either side of the white oak keelson, suggests that the B Street Schooner had additional support added to its backbone, which may be a sign of repair.

The single frame construction indicates that the B Street Schooner was built in the mid-19th century, as double frame construction tended to be more popular during the latter part of the century (Greenhill 1988:115). However, vessels with single frames were still built during the late 19th century when large enough timbers were available. In addition, the use of a stemson is
Figure 18: Structural timber next to the keelson
another possible indicator for earlier construction, as its use declined at the turn of the century (Desmond 1919: 56). The presence of muntz metal fasteners and sheathing also suggest a late-19th century date for the B Street Schooner, because muntz metal bolts and sheathing of this composition were patented in 1846 (McCarthy 2005). Based on the construction of the B Street Schooner, it is likely that the vessel was built between the mid-19th century but before the start of the 20th century.

_Artifact Assemblage_

Several factors affected the analysis of the B Street Schooner’s artifact assemblage. At the conclusion of the 2009 and 2010 excavations, it appeared that the site lacked a secure stratigraphy. There was not an adequate amount of ballast capping the site to create a non-mobile stratigraphy. In addition, the single stratum of the site consists of a homogeneous mix of sand from the surface of the bay floor down to the lowest portion of the vessel. The loose mix of sand creates a mobile layer in which heavier objects not pertaining to the site work their way down to the hull through the sand due to the constant motion from waves (Muckelroy 1978:176).

The 2011 magnetometer survey detected several anomalies in the area of the B Street Schooner, several of which appear to be modern based on high gamma readings (Cook and Perrine 2011). The presence of these anomalies suggest that the site was periodically impacted, most likely from continual wharf activities such as dumping and dredging during the early-20th century (Cook and Perrine 2011). In addition, these activities may have created an influx of extraneous artifacts that worked their way into the hull through the mobile layer. As a result, the artifact assemblage for the B Street Schooner site likely has a disturbed archaeological context, and it is difficult to determine which of the recovered artifacts are intrusive and which are associated with the vessel.
The limited excavation of the B Street Schooner did not result in the collection of a significant amount of cultural material. Although divers recovered over 200 artifacts, the majority were concretions, fasteners, and sheathing fragments. These construction elements are not movable, in that they cannot be easily removed during salvage operations. As a result, construction elements would remain with the vessel and most likely entered the site’s context due to normal site formation processes as the wood elements decayed away leaving the metal behind. Only a handful of other artifacts were collected, including ceramic, glass, brick, and bone, which may lend information regarding the vessel’s use, date, or significance.

*Ceramics*

Divers recovered a total of six ceramic sherds. With a total of three sherds, the midships area had the highest distribution of ceramics, all of which came from the dredge spoil. These include two alkaline glazed stoneware sherds (post 1890) and a whiteware sherd (1820-present), which was most likely part of a chamber pot (Florida Museum of Natural History 2004) (Figure 19). In the bow, divers collected two ceramic sherds: a whiteware plate rim sherd was recovered as it fell out the sand slumping into the excavation area and a hand-thrown coarse-earthenware base was found resting on the ceiling planking (Figure 20). The latter appears burnt, making it difficult to identify any type of slip or glaze treatments. In the stern of the vessel, only one transfer-printed whiteware sherd (1840-present) was collected from on top of a floor timber (Florida Museum of Natural History 2004) (Figure 21).

*Glass*

There were several different colors of glass shards recovered from the B Street Schooner including dark olive green, clear, brown, and aqua. Most were found in the stern of the vessel with the fewest from the amidships. A majority of the glass fragments came from dredge spoil,
Figure 19: Ceramics recovered from amidships. (a) alkaline glazed stoneware; (b) alkaline glazed stoneware; (c) whiteware

Figure 20: Ceramics recovered from the bow. (a) whiteware; (b) coarse earthenware

Figure 21: Transfer-printed whiteware recovered from the stern
lack diagnostic markings, and cannot be linked to a specific form. In the stern of the vessel six fragments of clear glass were on top of a floor timber, next to the keelson. Three of the fragments have square edges, appear to have been seated in a frame, and have wear marks on one side. The thickness and wear marks suggest that glass may have been a pane in a box-light, a covered opening in the deck to provide light through panes of glass (Quinn 1999:93). The other three fragments were also clear and could be mended together into one curved piece. The curvature suggests these fragments came from a glass globe lantern. It was not until the 1820s that these types of lanterns were popular on ships, but the fragments may also be a tall cylindrical type of glass globe lantern popular in the 1870s (Quinn 1999:42).

During this investigation, divers recovered a Johnny Walker bottle from the starboard side, near the amidships portion of the vessel as a surface find (Figure 22). The embossing on the bottle indicates that it dates post 1932 (Lindsey 2012). The location of the bottle on the surface suggests it may be intrusive to the site.

Missellaneous

A handful of unique artifacts were found during the excavation. These include a train brake pad and an oarlock. Divers recovered these artifacts from the amidships area of the vessel. The train brake pad may be associated with the several railroad wharves and the oarlock with a dry dock that occupied the area from 1913 to the 1930s. These artifacts could represent the influx of intrusive artifacts on the site, as the B Street Schooner was near several railroad wharfs and a dry dock used for vessel repair. For instance, the train brake pad has heavy wear marks, and it was possibly discarded into the bay after it was replaced (Figure 23). In addition, a 1.7 cm (0.65 in.) diameter lead shot was hand collected in the amidships area amongst the vessel’s structural timbers (Figure 24). The size of the ball suggests that it would be fired from a .69 caliber
Figure 22: Johnny Walker bottle with embossing

Figure 23: Train brake pad

Figure 24: 0.69 caliber lead shot
smoothbore musket and was used circa 1840 until rifled barrels were preferred around the start of the Civil War (Bilby 1996:20).

An abundance of slag was recovered from the 2009 and 2010 excavations. Slag can be a refuse from the smelting process. In terms of the B Street Schooner, the large amount of slag does not indicate the vessel had a smelting facility. Slag was not concentrated in a specific area and was seen in all excavation areas. It is most likely the byproduct of the burning of the vessel, indicated by the slag residue on top of the keelson. Larger amounts of slag in the amidships is most likely the result of it settling to the lowest point. As the B Street Schooner burned to the waterline, the iron fasteners from the ship’s upper structures melted and left the slag residue behind.

During excavation of the amidships units, divers uncovered evidence of cut and stacked southern yellow pine lumber, a common export from Pensacola, and it appears in all three areas of the B Street Schooner (Figure 25). Several pieces measure 30 cm (11.8 in.) in width and exceed 2 m (6.6 ft.) in length. Smaller pieces measure 5.3 cm (2 in.) in width and thickness and 20 cm (7.9 in.) in length. The lumber has two different types of cut marks, straight-irregularly spaced and straight-regularly spaced, indicating vertical sawing motion. Lumber mills in northwest Florida utilized sash saws, or vertical blades moving up and down, while the lumber was pushed through the mill on a carriage. These saws were used through the 19th century until the 1930s (Phillips 1996:39). It is probable that the lumber came from one of the numerous mills located in northwest Florida throughout the early-19th century and 20th century (Phillips 1993, 1996).

It is difficult to determine whether the lumber is cargo or trash placed in the vessel after its deposition because the lack of stone ballast may be interpreted two ways. First, in conjunction
Figure 25: Illustration of amidships units
with the location of the lumber, which rests on the ceiling planking, the lack of ballast suggests that the vessel may have been in port to take on cargo. Vessels often offloaded ballast to offset the added weight of cargo, if it was of sufficient weight to stabilize the ship (Kennedy 2010). The lumber may be cargo that was left on the vessel after it sank because the heavy timber was too difficult to offload from a submerged vessel. Alternatively, the lack of ballast might suggest that the B Street Schooner was, at some point, salvaged. Often, ballast was offloaded in an attempt to raise a sunken vessel (Rawls 2004). However, no ballast was found in the immediate vicinity, suggesting that the hull was empty when it was placed at its current location, indicating the lumber may be discarded material.

In addition to lumber, divers recovered brick and coal from the B Street Schooner. The amount of brick was very small, totaling 234.6 g, and consisted of one intact brick and six small brick fragments from all three excavation areas. In addition, 26 coal fragments were found in all three areas of excavation totaling 384.2 g. Although both the brick and coal were common commodities traded in the Port of Pensacola, it is difficult to associate these artifacts with the B Street Schooner. The area surrounding the vessel was used for coal bunkering, and coal may have worked its way into the vessel’s context through the loose sand. The amount of recovered brick was very small, indicating that it may be debris. The one intact brick was found outside of the vessel’s boundaries and may be intrusive. Since these artifacts were located within the disturbed sands of the site, outside the vessel boundaries, and in small amounts, there is little possibility that they were part of the cargo.

Artifact Analysis

Due to the lack of a secure stratigraphy and the disturbed nature of the site, artifacts found lying on top of, or in direct relation to, vessel structure provided the strongest context to
the B Street Schooner. Surface collections found near the vessel’s frames were excluded due to the lack of context associated with surface finds on the site. Besides lumber, only six types of artifacts were recovered in this context: lead shot, muntz metal sheathing, coarse earthenware base, transfer-printed whiteware, box-light glass fragments, and globe glass lantern fragments. Of these six artifacts, only four are dateable. The coarse earthenware found in the bow lacks any diagnostic markings to date the artifact and the box light has a long date range, as sky-lights on sailing vessels were used as early as the 17th century and as late as the 20th century (Quinn 1999).

The 2009 and 2010 excavations generally lacked diagnostic and contextually sound artifacts making it difficult to conduct artifact-specific analyses such as mean ceramic date. Instead, the artifacts collected from the 2005, 2009, and 2010 fieldwork seasons were incorporated into a chronology chart in the hopes that it would provide a connection between the vessel and the few dateable artifacts. Although several of these artifacts lack context, the chart highlights the artifacts’ distinct time ranges. An examination of the general beginning and end dates for the artifacts recovered provided a chronological perspective of the vessel may be obtained (Figure 26). The chart includes plain whiteware, a machine pressed Johnny Walker bottle with air bubbles and an embossed Johnny Walker bottle, muntz metal sheathing, Bristol slip ceramic, lead shot, alkaline glazed stoneware, cut-marks on the lumber, glass globe lantern, and transfer-printed whiteware. An important time marker used in the chronology chart is 1922. The B Street Schooner first appears in a 1922 aerial photograph of Pensacola’s waterfront (Board of Engineers for Rivers and Harbors 1922) (Figure 27). The photograph shows the vessel lying in its current position and in a similar state of preservation when compared to current aerial images, indicating the vessel was deposited prior to 1922. This date eliminates the embossed Johnny
<table>
<thead>
<tr>
<th>Item</th>
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<tbody>
<tr>
<td>Lead Shot (.69 Caliber)</td>
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<tr>
<td>Glass Globe Lantern</td>
</tr>
<tr>
<td>Lumber</td>
</tr>
<tr>
<td>Plain Whiteware</td>
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<tr>
<td>Transfer Print Whiteware</td>
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<tr>
<td>Alkaline Glazed Stoneware</td>
</tr>
<tr>
<td>Johnny Walker Bottle w / bubbles</td>
</tr>
<tr>
<td>Muntz Metal</td>
</tr>
<tr>
<td>Bristol Slip</td>
</tr>
<tr>
<td>Embossed Johnny Walker Bottle</td>
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Figure 26: Artifact chronology chart
Figure 27: 1922 aerial photograph with the B Street Schooner

Walker bottle, as embossing was not in use until 1932. Overall, the chart shows that the recovered artifacts have a large date range, 1845-1922, based on the initial patent of muntz metal and the aerial photograph. A best-fit line, based on the appearance of the Johnny Walker bottle with air bubbles and end of the Bristol slip ceramics, provides a suggested date of 1905.

**Deposition**

Several possibilities remain for how the B Street Schooner came to its current location on the bottom of Pensacola Bay. First, the B Street Schooner may have wrecked during one of the several hurricanes that hit Pensacola in 1906, 1916, and 1917. These storms caused massive amounts of damage, not only to the waterfront, but they also resulted in the loss of many vessels (Kennedy 2010). Archaeologically, the B Street Schooner does show signs of a wrecking event. There are broken frames and planking in the bow and, in addition, the orientation of the vessel with the stern facing the shoreline, may indicate that heavy winds forced the B Street Schooner into this odd position. Due to the limited amount of excavation, there may be other signs of damage to the vessel that were not exposed, such as a broken keelson or keel.

Second, the close proximity of the B Street Schooner to two manmade landscape features suggests the possibility that the vessel was purposefully put in its current location to support fill. The area surrounding the B Street Schooner was historically subjected to several dredging and filling episodes in order to create more land to support the economic growth of the area (Bruce Dry Dock 1917). Several ports such as New York City and San Francisco had similar practices for waterfront expansion. Several instances of vessels from both the 18th and 19th centuries resting under city streets have been archaeologically excavated (Rosloff 1986; Reiss 1987:187; Delgado 2009). In San Francisco, multiple mid-19th century vessels were used to support fill. The draw of the gold rush in the 1850s brought in several ships crowding the waterfront.
Surrounded by a shallow bay and no easy way to access the waterfront, vessels were dragged into the mud to support the maritime industry. After a serious fire, the waterfront was covered with sand burying several vessels, which then supported new land on San Francisco’s waterfront. The archaeological investigations show that these vessels are intact, hold a large amount of fill, and are timeworn.

Several facts limit the likelihood that the B Street Schooner was used for fill. When the dredge permits submitted by the Bruce Dry Dock company in 1917 are compared to the vessel’s present location, the B Street Schooner lies south of the intended fill area (Bruce Dry Dock 1917). In addition, the permits do not specify that the Bruce Dry Dock Company intended to use additional support for the fill and the vessel is not supporting dry land, whereas the vessels used for fill in New York City and San Francisco are underneath streets and buildings. Although current aerial photographs make it appear as though the site and the peninsula to the north are part of the same land formation, it may be that the B Street Schooner lies on a natural shallow contour, not a man-made peninsula. Due to the creation of several barge channels, the current nautical maps do not show this contour. Historic nautical charts do show a natural contour of 7 ft. which existed in the approximate location of the B Street Schooner prior to the creation of the peninsula and is further evidence that, although the vessel is in a shallow location, the depth is not a result from human interaction (USCS 1914).

The final possibility for the B Street Schooner is that it was purposefully abandoned at its current location. The area where the remains of the vessel are located fit criteria for a vessel graveyard outlined by Nathan Richards (2006) and his study of abandonment practices in Australia. He states that location is crucial for abandonment. The best areas are shallow, out of major channels, contain several vessels, and are near water-based activity. The area surrounding
B Street Schooner meets several of these criteria. The location is out of major shipping channels and is located next to maritime activity, such as the Bruce Dry Dock. In addition, the remains of another likely abandoned vessel, the B Street Barge, are in the immediate area (Spirek et al. 1993:77).

Richards (2006:94) also describes three signs of vessel discard: intact structure, lack of portable material culture, and absence of rigging. The criteria stem from how the vessel must be discarded. A large part of this process includes dismantling and salvaging parts of the vessel through harm minimization. Harm minimization is typically accomplished through the reduction of the hull or placement assurance, making sure that a discarded vessel remains discarded and does not impact shipping lanes after its abandonment (Richards 2006:96). The B Street Schooner meets all three of the archaeological signatures of discard. First, the vessel has a distinct lack of artifacts and rigging, which are signs of abandonment (Richards 2006:94). Historically, the site was near the Bruce Dry Dock and in shallow water, allowing for easy access for salvage activity. Unfortunately, there are no records describing salvage activity of the B Street Schooner. It is likely that the salvage activity took place prior to its deposition due to the missing ballast, superstructure, and material culture. In addition, the vessel’s structures, both above the bay floor and exposed in the areas of excavation, were intact. Although damage was noted in the bow, the damage does not match the amount of damage expected during hurricanes as described by witnesses (Pensacola Journal 1916, 1917a). Vessels that were involved in a hurricane typically exhibit disarticulated structure caused by the violent wave action created by the storm, such as the Emanuel Point I and Emanuel Point II sites (Smith et al. 1998; Cook 2009).

In addition to the vessel’s intact structure, signs of vessel minimization are apparent as well. Only the very bottom portion of the B Street Schooner remains. Richards (2006:95) states
that fire was a common technique used in hull reduction. Several of the exposed frames of the B Street Schooner are charred, and the large amount of slag recovered from the wrecks could be evidence of fire. No signs of placement assurance such as ballast stone, pilings pinning the vessel to substrate, or breeches in the hull were found; however, they may have remained covered due to the limited amount of excavations. Based on available data, the vessel appears to have been pushed as close to the shoreline as possible.

Similar practices are seen in another abandonment site near Pensacola, the Shields Point Abandonment site. This site houses at least seven abandoned or wrecked vessels in an area outside the major shipping channels and near a historic shipyard (Sjordal 2007:83). Some of the vessels show indications of burning. All lack major rigging elements and artifacts, similar to the B Street Schooner. In addition, the vessels lack placement assurance and, instead, were driven as far into the cove as possible until they were stuck in the mud (Sjordal 2007:83). This practice in abandonment may explain the B Street Schooner’s, as well as the B Street Barge’s, close proximity to the shore.

Conclusion

Based on the archaeological data collected during the 2009 and 2010 excavations, a number of tentative interpretations can be made about the B Street Schooner. The vessel’s structural remains and artifact assemblage indicate that it was built during the latter portion of the 19th century. In addition, the vessel’s structure indicates that strength was an important factor in the overall design of the vessel, possibly indicating the B Street Schooner operated in the open ocean. There are also signs of repair, which point to a possible long service life.

Due to a lack of material culture recovered from the B Street Schooner, it is difficult to determine how it was used. The lack of archaeological control makes it difficult to associate
artifacts with the vessel. Even though lumber, coal, and brick were found, it is not certain that these items reflect cargo. The chronology of the diagnostic artifacts points to a date of 1905, tying the B Street Schooner to a time when Pensacola’s waterfront was very active.

The lack of material culture, signs of harm minimization, and similarity to an abandonment site supports the theory that the B Street Schooner was most likely abandoned. The aerial photograph of the site and the artifact assemblage create a probable date range for when the B Street Schooner was abandoned, between 1905 and 1922.

Overall, the archaeological evidence indicates that the B Street Schooner was built between 1845 and the start of the 20th century, was in use through the 1900s, and was discarded between 1905 and 1922. Although divers noted possible cargo in coal, brick, and lumber, there is not enough context to definitely determine whether these items were cargo or debris. Due to the lack of diagnostic artifacts and historical documentation, other investigatory methods are needed in order to support the archaeological interpretations of the B Street Schooner.
CHAPTER V
COMPARISON

Although the archaeological excavation of the B Street Schooner provided initial data regarding the vessel’s construction and possible history, additional methods were needed to corroborate and enhance the interpretations. Comparing the construction data collected from the excavations to other sailing vessels from different time periods and occupations aided in understanding the B Street Schooner’s associated date and function. In addition, the comparison highlighted certain construction and design characteristics that were preferred with different occupations and why vessel types changed through time.

Methods

Several studies have investigated the connection between ship design and occupation in Pensacola. Robin Moore (2002) examined the connection between a schooner’s design and its use in Pensacola. He created four categories based on use: coasting (open-ocean/general freight), fishing, regional vessels (inland water), and unknown. His results showed a correlation between length, breadth, and depth of hold within each category. The schooners with the largest dimensions, over 30.48 m (100 ft.) in length, were typically coasting vessels, followed by smaller fishing vessels, between 12.2 to 27.4 m (50 to 90 ft.), and regional transports, under 12.2 m (50 ft.). He states that the correlation between these measurements and the vessels’ uses were due to influences from economic and environmental factors (Moore 2002:36). Although specifically looking at schooner rigged vessels, Moore’s study shows that design and function are connected in Pensacola.

Similar to Moore’s (2002) analysis, vessel function, or its occupation, may be described as either general freight, in which vessels were expected to carry freight to distant ports, or
fishing. Based on the archaeological analysis, the presence of possible cargo and the site’s location make these two occupations the most likely. Fishing and general freight vessels were common in Pensacola and were prevalent along the waterfront near the vessel’s remains, especially while the city served as a busy port, which coincides with the B Street Schooner’s probable date range of 1845-1922. Historically, other types of vessels utilized the bay and the river system north of the city participating in a variety of occupations. The B Street Schooner is too large to function as an inland freighter. In addition, Pensacola has seen military action and military vessels were typically stationed along the entrance to Pensacola Bay or the Navy Yard, which is supported by the location of three Civil War vessels, the USS Preble in the entrance to the Bay and Convoy/Judah, located west of the waterfront (Franklin et al. 1992:137).

The comparison for this study used vessels of various rigs that functioned as both fishing and general freight. Each occupation was examined in terms of quantitative variables such as scantling data, specifically length, breadth, and frame dimensions. In addition, the comparison used qualitative variables such as frame design, single or paired, and rig. The comparison examined variables in terms of the dates when the vessels were in use in order to observe trends through time. The B Street Schooner’s scantling and construction data was then compared to the averages of each occupation’s scantling data, frame design, and rig in order to determine any similarity.

The comparison utilized data collected from previously investigated sites and vessels of known occupation. The general freight vessels include Catherine, George T. Lock, Rhoda, Dinty Moore, Palafox, and Guanacaste. Fishing vessels include Hamilton’s Wreck, Governor Stone, and the Snapper Wreck. This comparison is localized to vessels in Pensacola Bay and one from
Mississippi. The localization is due to the large amount of readily available data on vessels using the waterfront.

**The Vessels**

Several general freight vessels have been subjects of archaeological investigation and were determined to have been used during the mid- to late-19th century. The *Rhoda* (8ES1899), a British bark, was built in Quebec City in 1864 and was quickly sold abroad (Rawls 2004:96). The vessel served in the timber industry, ferrying timber from North America to England for 18 years. It capsized and sank in Pensacola Bay in 1882 (Rawls 2004:96). Recorded first during the 1991 Pensacola Shipwreck Survey, the vessel was revisited as part of the 2000 and 2001 UWF maritime field schools.

*Catherine* (8ES100) is a ship-rigged vessel that wrecked near Santa Rosa Island in 1894 (Burns 2000, 2003). Uncovered by hurricanes, UWF investigated the vessel believed to be the Catherine during a field school in 1998 (Bratten et al. 1998). Historical records indicate that the vessel was most likely coming into port to take part in Pensacola’s lucrative lumber industry. *Catherine* is of Canadian origin and was built in 1869 for the British sea trade and, after 20 years of service, was purchased for use in the Norwegian maritime business, which relied on older sailing vessels as a cost saving method (Burns 2000, 2003).

UWF also investigated four abandoned vessels, *George T. Lock, Dinty Moore, Palafox,* and *Guanacaste,* located near Shields Point, Florida. These vessels date to the latter part of the 19th and early 20th centuries (Holland 2006; Sjordal 2007). The Shields Point vessels were investigated initially in 1991 as part of the Pensacola Shipwreck Survey (Franklin et al. 1991). Later, in 2003 and 2004, the vessels were incorporated into a UWF maritime field school where students recorded all four hulls.
Built in Louisiana in 1917, the *Geo. T. Lock* (8SR1491) was constructed for the Aiken Tow and Barge Company of Pensacola. It was rated for coastwise shipping as a four-masted schooner in the lumber industry (Sjordal 2007:32). The vessel was converted to a schooner-barge after only two years in the industry. Schooner-barges offered a cost-effective means of combining reliable steam power and the cargo capacity of large multi-masted sailing vessel (Holland 2006:24). The sailing vessel was stripped of rigging and then towed behind a steam-powered tugboat. As a schooner-barge, it transported general cargo, not just lumber. It served as such until its abandonment in 1933 with the decline of Pensacola’s economy (Holland 2006:28; Sjordal 2007:32).

The Bullock & Caldwell Company built the *Dinty Moore* (8SR1477) as a schooner-barge in Pensacola, Florida in 1921. It transported cargo from Pensacola to various ports along the Gulf Coast throughout its life. It was listed as abandoned in 1937. (Sjordal 2007:30).

The Pensacola Shipbuilding Company built the *Palafox* (8SR1477) in 1919 for use in the lumber industry (Sjordal 2007:23). Originally, it was built as a three-masted schooner with auxiliary power, provided by two semi-diesel internal combustion engines. It was recognized as a freight service vessel throughout its career (Sjordal 2007:27). In 1927, *Palafox* was converted to a schooner-barge prior to its abandonment in 1933.

The final freight vessel, *Guanacaste*, was built in 1917 in Portland, Oregon as a four-masted schooner with auxiliary engines. Prior to its relocation to Pensacola, Florida, the vessel carried general freight from New York and Delaware. It was sold in 1924 and served for two years as a fishing vessel in the Gulf. It was later converted into a schooner-barge, where it once again served as a general freight vessel (Sjordal 2007:36).
Another occupation that proliferated Pensacola’s waterfront that utilized sailing vessels was the lucrative red snapper fishing industry. One of these vessels, the Snapper Wreck (8SR1001), was investigated in 1991 during the Pensacola Shipwreck Survey and as part of the UWF maritime field school in 2001 (Raupp 2004:2). The structural remains of the vessel indicate that it originated from New England before being sold south to serve the red snapper fisheries of Pensacola (Raupp 2004). It was abandoned around 1935 (Raupp 2004:133).

Another fishing vessel, Hamilton’s Wreck (8ES2238), was investigated as part of a graduate student thesis (Moore 2002). The wreck was initially examined during the 1992 Pensacola Shipwreck Survey. More intensive investigations followed in 1999 and 2000. The archaeology and historic research concluded that the vessel was in use between 1900 and 1920 (Moore 2002:138). In addition, Moore (2002:139) concluded that the vessel’s dimensions match that of a two-masted fishing schooner used within the red snapper industry.

*Governor Stone*, built in 1877, served as a two-masted centerboard schooner in the Gulf of Mexico. It was part of the Mississippi oyster trade and acted as a rumrunner between Cuba and the Gulf (Sikes 2004:299). The design represents a southern built fishing vessel in use prior to the turn of the century and shows consideration for the region based on its ability to fish and operate within local waters (Sikes 2004:313).

**Data Analysis**

Length and beam dimensions for vessels associated with the general freight occupation show a similar pattern (Table 2). All vessels are over 30.5 m (100 ft.) in length and 9.1 m (30 ft.) in beam. The largest vessel is *Catherine* at 58.8 m (193 ft.) and the smallest, *Dinty Moore*, at 42 m (137.9 ft.). The range, 16.8 m (55.1 ft.), indicates some variation in length between the
different vessels. However, the beams of the vessels are less varied, ranging between 8.9 m (29.2 ft.) and 9.5 m (31.1 ft.). The average dimensions for the general freight vessels are 51.9 m (170.2 ft.) in length and 11 m (36 ft.) in beam. There does not appear to be a significant change in length and beam through time. The length to beam ratio appeared to decrease through the early 20th century.

TABLE 2
LENGTH AND BEAM OF GENERAL FREIGHT VESSELS

<table>
<thead>
<tr>
<th>Vessel</th>
<th>Length (m)</th>
<th>Beam (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhoda (1864)</td>
<td>56.7</td>
<td>10.1</td>
</tr>
<tr>
<td>Catherine (1869)</td>
<td>58.8</td>
<td>11.5</td>
</tr>
<tr>
<td>Geo. T. Lock (1917)</td>
<td>54.9</td>
<td>11.9</td>
</tr>
<tr>
<td>Guanacaste (1917)</td>
<td>53</td>
<td>8.9</td>
</tr>
<tr>
<td>Palafox (1919)</td>
<td>45.8</td>
<td>11.9</td>
</tr>
<tr>
<td>Dinty Moore (1921)</td>
<td>42</td>
<td>9.5</td>
</tr>
</tbody>
</table>

The general freight vessels have large frame dimensions, averaging 24.1 cm (9.5 in.) molded, 25.4 cm (10 in.) sided, and 40 cm (15.7 in.) of space (Table 3). The sided and molded dimensions vary by 21.6 cm (8.5 in.) and 22.8 cm (9.0 in.), respectively, between the vessels, a relatively small amount of variation. However, the space dimension has a large range, 60 cm (23.6 in.), in comparison to the other frame dimensions, an indication that space between frames is extremely varied for the general freight vessels, with less varied sided and molded dimensions. Therefore, there does not appear to be a constant application of space between frames, although some consistency is apparent with the application of sided and molded dimensions.

TABLE 3
FRAME DIMENSIONS OF GENERAL FREIGHT VESSELS

<table>
<thead>
<tr>
<th>Vessel</th>
<th>Sided (cm)</th>
<th>Molded (cm)</th>
<th>Space (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhoda (1864)</td>
<td>27</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Catherine (1869)</td>
<td>33</td>
<td>36.8</td>
<td>45.7</td>
</tr>
<tr>
<td>Geo. T. Lock (1917)</td>
<td>30</td>
<td>15</td>
<td>75</td>
</tr>
<tr>
<td>Guanacaste (1917)</td>
<td>26</td>
<td>22.5</td>
<td>50</td>
</tr>
<tr>
<td>Palafox (1919)</td>
<td>15</td>
<td>30</td>
<td>32.7</td>
</tr>
<tr>
<td>Dinty Moore (1921)</td>
<td>11.4</td>
<td>27</td>
<td>24.6</td>
</tr>
</tbody>
</table>
Another observation is that general freight vessels did not use the same rig or frame design through time (Table 4). The comparison shows a difference in rig and frame design between the earlier general freight vessels from those built in the late-19th and early-20th centuries. Before the turn of the century, it appears as though the general freight occupation relied on wind-powered vessels such as the *Catherine*, a full rigged ship, and *Rhoda*, a bark. As the industry declined from the turn of the century to the 1930s, the preference shifted towards towed schooner-barges. In addition, the earlier two vessels have a single frame design while the later vessels have a paired frame design.

**TABLE 4**

**RIGS AND FRAME DESIGN FOR GENERAL FREIGHT VESSELS**

<table>
<thead>
<tr>
<th>Vessel</th>
<th>Rig</th>
<th>Frame Design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rhoda (1864)</strong></td>
<td>Barque</td>
<td>Single</td>
</tr>
<tr>
<td><strong>Catherine (1869)</strong></td>
<td>Ship</td>
<td>Single</td>
</tr>
<tr>
<td><strong>Geo. T. Lock (1917)</strong></td>
<td>4-masted schooner/Barge</td>
<td>Paired</td>
</tr>
<tr>
<td><strong>Guanacaste (1917)</strong></td>
<td>4-masted schooner/Barge</td>
<td>Paired</td>
</tr>
<tr>
<td><strong>Palafox (1919)</strong></td>
<td>3-masted schooner/Barge</td>
<td>Paired</td>
</tr>
<tr>
<td><strong>Dinty Moore (1921)</strong></td>
<td>Schooner-barge</td>
<td>Paired</td>
</tr>
</tbody>
</table>

There is a clear difference between the fishing vessels and the general freight vessels (Table 5). Fishing vessels are 30.5 m (100 ft.) or less in length, much shorter than the general freight vessels. In addition, fishing vessels have smaller beams, between 6.4 and 3.7 m (21 to 12.1 ft.). The Hamilton Wreck’s beam was omitted because the vessel’s remains did not allow a breadth measurement to be taken. The lengths of the fishing vessels have a range of 17.5 m (57.5 ft.). This is a similar range to the general freight vessel. Beam appears to be varied, more so than the general freight vessels. Fishing vessels average 19.2 m (63 ft.) in length and 5 m (16.5 ft.) in beam. Fishing vessels also appear to increase in size through time, probably as fishing grounds moved farther out to sea.
TABLE 5
LENGTH AND BEAM OF FISHING VESSELS

<table>
<thead>
<tr>
<th>Vessels</th>
<th>Length (m)</th>
<th>Beam (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governor Stone (1855)</td>
<td>12.9</td>
<td>12.1</td>
</tr>
<tr>
<td>Snapper Wreck (1890-1920)</td>
<td>30.5</td>
<td>6.4</td>
</tr>
<tr>
<td>Hamilton Wreck (1900-1920)</td>
<td>19.2</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Fishing vessels were smaller than the general freight vessels in terms of frame dimensions (Table 6). Their frames average 14.7 cm (5.8 in.) molded, 11.9 cm (4.7 in.) sided, and 26.7 cm (10.5 in.) of space. Although similar in frame dimensions, the Governor Stone, built in 1877, has smaller dimensions than the Snapper Wreck and Hamilton Wreck, each built between 1890 and 1920.

TABLE 6
FRAME DIMENSIONS OF FISHING VESSELS

<table>
<thead>
<tr>
<th>Vessels</th>
<th>Sided (cm)</th>
<th>Molded (cm)</th>
<th>Space (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governor Stone (1855)</td>
<td>5.7</td>
<td>10.2</td>
<td>40</td>
</tr>
<tr>
<td>Snapper Wreck (1890-1920)</td>
<td>15</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>Hamilton Wreck (1900-1920)</td>
<td>15</td>
<td>16</td>
<td>20</td>
</tr>
</tbody>
</table>

The fishing vessels were similar in terms of rig configuration and frame design (Table 7). They were two-masted vessels with various forms of schooner rig. The fishing vessels also consistently made use of paired frames through time. The similarity of these ship elements through time suggests that the frame design and rigs for fishing vessels proved to be of benefit even as fishing grounds moved farther offshore.

TABLE 7
RIGS FOR FISHING VESSELS

<table>
<thead>
<tr>
<th>Vessels</th>
<th>Rig</th>
<th>Frame Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governor Stone (1855)</td>
<td>Two-masted schooner</td>
<td>Paired</td>
</tr>
<tr>
<td>Snapper Wreck (1890-1920)</td>
<td>Smack</td>
<td>Paired</td>
</tr>
<tr>
<td>Hamilton Wreck (1900-1920)</td>
<td>Two-masted schooner</td>
<td>Paired</td>
</tr>
</tbody>
</table>
Results

Overall, the comparison between the freight and fishing vessels highlighted certain preferences for the two occupations. Ships involved with general freight tended to be larger vessels with large cargo capacity and strength. These characteristics were exhibited in large lengths, breadths, and frame size in all the general freight vessels. When compared to Moore’s (2002) findings, these vessels were similar in dimension to the vessels he determined served in the open ocean, suggesting that these vessels could withstand open-ocean voyages. The opposite was true for the fishing vessels. These vessels exhibited smaller dimensions in all categories when compared to the general freight vessels. Their smaller size can be a sign of use in local waters or in limited offshore distances, although the size of the fishing vessels increased circa the 1900s as they travelled farther offshore to access new fishing grounds (Moore 2002:47).

General freight vessels also changed over time in terms of the frame design and rig. The transition from single frames to paired frames may be used as a time marker. Vessels built in the 1860s have single frames while the vessels built in the 1900s utilized paired frames. Another trend was the shift from wind-powered craft to schooner-barges along the same timeline as frame design. Fishing vessels, however, utilized similar rig and frame design through time. The similarity may indicate that the design was the best fit for the fishing occupation, whereas the general freight occupation needed to adapt to changing circumstances such as new markets and routes or new cargoes. The shift in designs may indicate that they were no longer beneficial to the needs of the general freight occupations.

Based on the observed quantitative construction trends, the B-Street Schooner matches the size and construction of the vessels used as general freighters. The length, 45.6 m (149.6 ft.), and breadth, 10.4 m (34 ft.), of the B Street Schooner are large enough to match the average
length and breadth dimensions of the general freight vessels (Figure 28). In addition, the B Street Schooner exhibits similar frame size to the general freight vessels (Figure 29). The similarities of the B Street Schooner to the general freight vessels indicate a similar use in that the vessel may have been used to move goods across the open ocean. However, the average space does not correspond and may result from the use of two different frame styles in the design of the general freight vessels, resulting in a large variation. Those with the paired frames typically have larger spaces, while single frames are placed closer together to provide strength. Based on the time marker provided by the frame design and rigs for general freight vessels, the B Street Schooner’s utilization of single frames makes it most similar to the vessels built in the 1860s, Rhoda and Catherine. This time period corroborates archaeological evidence, provided by the use of single frame and a stemson in the construction of the B Street Schooner, that the vessel was built mid-to late-19th century. Although using different types of sailing rigs, Catherine and Rhoda each have rigs that utilized three masts. The similarity in the size and scantlings of the B Street Schooner, Catherine, and Rhoda suggests the schooner also had three masts, suggesting it was a fully wind-powered vessel. Although it is unknown what specific rig the B Street Schooner carried, it is possible that it used a schooner, barque, or ship rig at some point in the vessel’s life. It is still possible that the vessel was converted to a schooner-barge towards the end of its life. The archaeological evidence suggests that the vessel had a long service life and may have been in use until the early 1900s.

Conclusion

Overall, the comparison between general freight and fishing vessels highlighted different construction and design trends for the vessels used within each industry. Data indicates that the B Street Schooner matched the dimensions of a general freight vessel, and a comparison supported
Figure 28: Length and breadth averages of the general freight, fishing vessels, and the B Street Schooner

Figure 29: Frame dimension averages of general freight, fishing vessels, and the B Street Schooner
the archaeological evidence that it may have been constructed during the mid- to late-19th century and was likely a wind-powered, three-masted vessel. In addition, the comparison suggests that the vessel was used to move goods across the open ocean.

Interestingly, the comparison also shows changes in construction and design trends through time for different occupations. It is important to view these changes not only as a sequence of types, but also in terms of the pressures that cause them. Examining these construction and design changes in an economic context may provide insight into the reason behind these design trends and create a fuller picture of the B Street Schooner and its significance.
CHAPTER VI
DISCUSSION AND CONCLUSIONS

Economic Pressure on Vessel Design

The impact of the economics of a given region on shipping is needed to understand fluctuations in vessel design. Shipwrights considered several factors in vessel design such as environment, intended route, and purpose (Steffy 1994:9). Although it is important to design a ship around these physical factors, economics was still a prime influence for why a vessel took a certain route or fit a specific purpose. The most predominant non-physical factor that affected vessel design is economics (Steffy 1994:10).

In this present investigation, capitalism is the specific economic system investigated. Capitalism is defined as a type of economy in which the modes of production and means of distribution are privately owned. Capitalism arose from Europe’s feudal system between 1450 and 1640 (Wallerstein 1976:275). Prior to capitalism, there was no exchange of staple goods over an extended area (Wallerstein 1974:401). The transition from feudal Europe to a capitalist world economy consisted of the incorporation of new locations, such as the linking of Asia and the Americas to Europe. In addition, the transition included the privatization of labor and commercialization of land, the latter two being internal changes and the first an expansion of market (Wallerstein 1976:276, 2004:353). This expansion was accomplished around 1500 when European countries, such as Spain, began sailing to new locations (Wallerstein 2000:154). The technology available at this time, Iberian sailing vessels, contained design characteristics that made it possible to travel across the open ocean for the purpose of discovering new areas (Steffy 1994; Oertling 2004). These first ventures into open ocean created a need to add strength to the sailing vessels. The use of buttressed maststeps and dovetailed frames are some of the first signs
that economics influences vessel design. The area eventually grew, encompassing the expanses of the globe into a capitalist economy around 1900 (Wallerstein 1976:279).

Two main factors are involved in a capitalist environment, the markets and the firms that participate in them. In a market economy, firms exchange products for profits with the goal of achieving maximum profit (Taussig 1980:25; Wallerstein 2000:83, 2004:24). Those who do not act with the goal of continual accumulation of capital are penalized, or are otherwise removed from the social scene (Wallerstein 2004:24). By working within the capitalist world economy, firms would be driven by competition, or economic pressure, to find a means to acquire an endless amount of incoming capital. Since sailing vessels aided in producing profit, they too would be affected by that drive.

Historically, sailing vessels provided a means of connecting the individual areas making up the market economy and a way of exchanging goods within it. Firms utilized waterways to move their products throughout the market by using rivers, the coast, or open water to move products long distances to reach the market. In other terms, sailing vessels were an important tool used to export and import products to draw in revenue and, for much of history, served as tools for gaining profit (Gould 2000:19). As a result, how a vessel was constructed and the sailing qualities it possessed affected the ship’s ability to create a profit.

Shipwrights dealt with numerous difficulties while conceptualizing how to build a vessel. Shipbuilders had the unique challenge of dealing with the medium of water (Steffy 1994:10). This medium posed many challenges to increasing a vessel’s ability to move easily, while also maintaining the ability to carry cargo, operate safely, and fulfill its purpose. For example, to maximize profits, a box shape will move a large amount of product at one time; however, a box shape did not move easily through the water. As a result, shipwrights compromised by
sacrificing cargo space. They added rounded sides and shaped ends to the cargo box, allowing it to travel through water safely and efficiently (Steffy 1994:10).

Shipwrights attempted to balance certain characteristics such as stability, strength, capacity, and swiftness. They often placed slightly more emphasis on one characteristic, such as speed or cargo capacity, over the others according to the vessel’s purpose (Steel 1822). Depending on which characteristic was emphasized determined the vessel’s sailing qualities, how much product it could carry, and how safely it could make voyages. To complicate matters, the adjustment of one characteristic negatively affects the others. The faster the vessel the more trips it can make, but it will lose cargo capacity. Ships centered on cargo were slower, but more stable, reducing risk of losing the ship and cargo, but could carry more products. The vessel’s purpose determined which characteristics were exemplified, and this choice affected the ability of the vessel to produce a profit.

Economic pressure, the desire to out gain the competition, created an environment for the selection of certain combination of vessel characteristics. Different time periods had unique economic situations and, as a result, different influences on what vessel characteristics produced a profit. For each distinctive economic situation, there would be a unique mix of a ship’s speed, maneuverability, cargo capacity, and seaworthiness that had the ability to produce maximum profit (Lenihan 1983:53). For example, “clippers” demonstrate extreme consideration for increasing speed over other characteristic types while being used to transport various cargoes. Clippers are “large, very fast sailing ships built without much regard for cargo capacity and operating costs” (Chapelle 1967:322). Although the name clipper does not represent one design but several, there are key features included in them all. These include sharp ends and large amount of deadrise, or the amount of elevation, or rising, of the floor above the horizontal plane
(Chapelle 1967). In other words, the clipper style obtained its speed by creating a v-shaped bottom. This meant the clipper could displace more water for a smaller and lighter vessel, increasing speed but decreasing cargo space (Chapelle 1935:240). However, this type of vessel was in use only a short time, approximately 13 years, because of its uneconomic design (Chapelle 1935:286). The focus on speed required large crews and limited cargo space meaning it costs a lot of money to operate the vessel while producing limited profit. Ultimately, economic forces stopped these types of vessels being used in favor of more economic designs (Chapelle 1935:286).

**Pensacola’s Economic Pressure on Vessel Design**

The comparisons from the previous chapter provide evidence of shifts in design preferences for vessels used as general freighters in Pensacola. Although still focusing on large cargo capacity and strength, the comparisons demonstrate a transition from wind-powered sailing vessels to towed schooner-barges during the 1900s. In addition to the fluctuation in ship design for general freighters, an analysis of 19th- and 20th-century newspapers articles from the Pensacola Gazette (1843, 1844, 1851, 1858), The Daily News (1893a, 1899), and Pensacola Journal (1905, 1930), provides statistical data that demonstrates trends of shifting design preferences in Pensacola (Table 8). Information gathered from the “Port of Pensacola” section focused on collecting the number and type of vessels utilizing the port to transport various cargoes to several locations.

<table>
<thead>
<tr>
<th>Year</th>
<th>Rig</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1840</td>
<td>Schooner</td>
<td>78.86</td>
<td>317</td>
</tr>
<tr>
<td></td>
<td>Sloop</td>
<td>4.98</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Brig</td>
<td>8.21</td>
<td>33</td>
</tr>
</tbody>
</table>

Table 8: Ships in the Port of Pensacola
### TABLE 8
SHIPS IN THE PORT OF PENSACOLA (continued)

<table>
<thead>
<tr>
<th>Year</th>
<th>Rig</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Barque</td>
<td>6.72</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Steamer</td>
<td>1.24</td>
<td>5</td>
</tr>
<tr>
<td>1850</td>
<td>Schooner</td>
<td>79.66</td>
<td>470</td>
</tr>
<tr>
<td></td>
<td>Sloop</td>
<td>0.51</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Brig</td>
<td>14.41</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Ship</td>
<td>2.03</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Barque</td>
<td>3.39</td>
<td>20</td>
</tr>
<tr>
<td>1890</td>
<td>Schooner</td>
<td>16.73</td>
<td>158</td>
</tr>
<tr>
<td></td>
<td>Brig</td>
<td>0.65</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Ship</td>
<td>6.25</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Barque</td>
<td>70.97</td>
<td>670</td>
</tr>
<tr>
<td></td>
<td>Steamer</td>
<td>5.40</td>
<td>51</td>
</tr>
<tr>
<td>1905</td>
<td>Schooner</td>
<td>12.20</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>Ship</td>
<td>9.62</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>Barque</td>
<td>42.48</td>
<td>212</td>
</tr>
<tr>
<td></td>
<td>Barkentines</td>
<td>1.00</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Steamer</td>
<td>34.87</td>
<td>174</td>
</tr>
<tr>
<td>1930</td>
<td>Steamer</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

In the 1840s and 1850s, the most prominent type was the schooner, a vessel with two or three masts and sails running fore and aft. Out of 592 vessels, this type was used 79% of the time. In the 1890s, preference changed to the barque, a three-masted vessel with square sails on all but the mizzenmast. During this time, out of 944 total vessels, the barque ranked first with 70% usage, and the schooner second with 16% usage. In 1905, out of 499 vessels, steam ships occur more than previous years with 35%, up from 5%, although the barque remains the most prevalent vessel in Pensacola with 42%. For the data available in 1930, the Port of Pensacola section only referenced steam ships entering and leaving the harbor, indicating a limited or non-commercial use of wind powered sailing vessels.
When placed in historical context, the changes in vessel preference occurred during shifts in Pensacola’s economic situation and, as result, fluctuations in vessel design and construction may have been the result of economic influence. As shown by the newspaper analysis, the 1840s and 1850s made use of smaller schooners, which were typically full-ended and two masted vessels during this period (Chapelle 1935:258). During this time, the economy was focused around local and regional needs, mostly transporting lumber supplies to nearby colonies in New Orleans and Texas (Drobney 1997). There was not a need to move large amounts of product across large expanses of open water.

The data from the 1890s show that larger, three masted vessels, such as barques and ships, were more prominent in the port. Schooners also were also larger and typically had three masts after the Civil War (Chapelle 1935:258). This coincides with a period of economic prosperity, particularly for Pensacola’s lumber industry. During this time, new markets emerged across the Atlantic Ocean in Europe (Drobney 1997). In addition, there was an increase in productivity and industry, which created a larger amount of product to be shipped. It is likely that larger vessels would be beneficial, not only because they had larger cargo capacity, but also larger frame assemblies provided more strength and safety for open-ocean voyages. In addition, barques sailed better against the wind than the schooner rig and had lower operating costs than the full ship rig, possibly explaining its higher presence over the other vessel types (Chapelle 1935:288).

At the turn of the century, the strong economy continued on Pensacola’s waterfront with the addition of several companies such as Bruce Dry Dock, railroad wharves, and oil companies. The use of more vessel types during the 1900s indicates a varied and productive time. This time also saw transition to steam power, as evidenced by an increase in use of this type.
During the 1930s, there was a significant decline in the economy for Pensacola. The lack of exports due to over exploitation of pine and the Great Depression created economic strain, and steamers were the primary vessel seen in Pensacola. Schooner-barges were a type of vessel used during this time; however, barges were not mentioned in the newspapers. The shift from wind-power to steam may have been a way to cut costs and maintain low overheads to continue profitable operations because schooner-barges provided the large cargo capacity of wind-powered vessels, but also the speed offered by steam engines which towed them (Holland 2006).

When placed in historical context, the changes in vessel preference appear to coincide with changes in Pensacola’s economic situation. The trends could be interpreted as smaller vessels during the smaller economic periods moving to larger vessels as production increased and distant markets opened up. The comparison shows that large dimensions, room for cargo, and strength were the important factors selected for the vessels to operate in the open ocean in order to access the distant markets, suggesting these characteristics were capable of producing profit. In the comparison, these characteristics were seen in the general freight occupation from the 1860s to the 1930s, additional evidence of economic benefit through time.

The archaeological evidence indicates that the B Street Schooner may have gone through two economic transitions. First, the evidence suggests it was built in the late 19th century, during a high point in Pensacola’s economy. This may explain the vessel’s large dimensions and focus on strength. Similar to other vessels prominent in the area, the B Street Schooner’s design was a response from the pressure to move large amounts of product across the open ocean. Second, the probable abandonment date of 1905-1922 coincides with an economic decline. As a vessel reached the end of its serviceable life and could no longer be cost-effectively maintained, it was abandoned.
**Conclusion**

The investigation of the B-Street Schooner attempted to extend beyond the history of the vessel and chronology of ship design. With little material culture or historic documentation available for interpretation, new methods were incorporated into this study in order to better understand the vessel and cultural influences that affected it. By gaining a thorough knowledge of the vessel through archaeology, this study compared the B Street Schooner to other vessels and placed it into an historical economic context. The combination of archaeological and historical investigation of the B Street Schooner provided insight into the vessel’s use, date, and deposition. More importantly, this study incorporated the vessels into a larger historic context in order to understand the impact of human influences on ship design.

Although no information on the identity of the vessel known as the B Street Schooner was found, this study provides new information into the mysterious wreck. By building off the previous investigations in 1992 and 2005, test excavations in the summers of 2009 and 2010 provided new data. Several structural elements of the vessel were uncovered in the bow, amidships, and stern, revealing the B Street Schooner’s remains are intact, large, and was likely burned. In addition, the distinct lack of ballast, material culture, and superstructure supports the notion that the vessel experienced salvage activity. Overall, the B Street Schooner exhibits construction trends indicative of the mid to late 19th century such as single frames and a stemson. Additionally, there are signs of long service in the form of possible repairs made in the vessel’s stern.

Although the shallow water allowed for easy access to the site, the environmental setting created difficulties during the excavations. The sandy bay floor and the impact from years of dredging in the area surrounding the B Street Schooner have negatively impacted the site’s
archaeological context, calling into question the association of artifact assemblage to the vessel. Although evidence of possible cargo such as lumber, brick, and coal was found the poor archaeological context of the site makes it difficult to determine if they are associated with the B Street Schooner (Cook and Perrine 2011). However, the chronological analysis of the diagnostic artifacts provides a date of 1905, connecting the vessel’s mid- to late-19th century construction date to a time when the waterfront was very active. The appearance of the B Street Schooner in a 1922 aerial photograph provides a solid *terminus ante quem* (*TAQ*) for the vessel, suggesting it was deposited prior to that year, providing a possible abandonment date between 1905 and 1922 for the B Street Schooner.

The combination of evidence of long service life, lack of movable artifacts, rigging, and burning, match signs of vessel abandonment and harm minimization seen in discarded vessels (Richards 2006). In addition, the vessel’s close proximity to shore, maritime activity, and another vessel, the B Street Barge, match circumstances of another known abandonment area in Pensacola’s watershed know as Shields Point. These circumstances make abandonment the likeliest reason for B Street Schooner’s deposition. Due to the limited amount of excavation, there remains the possibility that it may have wrecked from hurricanes or been used as fill.

In order to build upon the interpretation from the archaeological evidence, other comparisons were utilized. The multitude of vessels that have been part of archaeological investigation in Pensacola offered a starting for gathering data to compare to the B Street Schooner. By selecting vessels that participated in known occupations in Pensacola and Gulf of Mexico, general freighters and fishing, the comparison analyzed similarities and differences in order to determine if the B Street Schooner’s design correlated with an occupation.
The large geographical range of vessels during the 19th century makes a larger comparison viable. In future research efforts, the comparison could be expanded to include vessels outside of Pensacola and into the Gulf of Mexico and include sites such as the Viosca Knolls Wreck (Church and Warren 2008), Western Empire (Levin 2006) and Mica Wreck (Jones 2004). These vessels are mid 19th century vessels found in the deepwater of the Gulf and may been transporting cargoes. In addition, the west coast of the United States also has a multitude of vessels from the 19th century, including General Harrison and Niantic, two vessels that carried goods to San Francisco and were eventually buried during wharf expansion (Delgado 2009).

Previous studies have shown that vessels of comparable dimensions can be grouped into similar occupations (Moore 2002). As such, some of the most compelling evidence regarding the B Street Schooner comes from comparing it to other sites in Pensacola. The large difference in length, breadth, and frame dimensions of the general freight vessels to the fishing vessels shows differences in design preference based on the vessel’s purpose. The close similarity of the B Street Schooner to the dimensions of general freight vessels suggests a similar use. Furthermore, the comparison showed similarity between 1860s general freight vessels Catherine and Rhoda. The similarities in the comparison support the interpretations offered by the archaeological record that the B Street Schooner was built during the mid- to late-19th century and was most likely a wind-powered vessel. In addition, the transition to schooner-barges occurred around a similar time that the B Street Schooner may have been abandoned. Although no archaeological evidence was found, signs of long service life and its use during the early 20th century make it possible that the B Street Schooner was a schooner-barge toward the end of its career.
One of the overarching goals of this investigation was to understand the pressures that may have affected selection of design and construction preferences. It appears that economics played a part in influencing these choices. The most influential factor was the drive for the vessel to produce a profit, which had an effect on how it was built. For example, sailing vessels were designed to meet characteristics based on use, which in turn determined how much profit could be made. As seen in Pensacola, when economic circumstances changed so did the construction and design trends. During strong economic periods, larger vessels, such as barques, were more common, and during economic downturn, schooner-barges offered a way to keep operating costs low while producing profit. Based on archaeological and historical investigations, it appears as though the B Street Schooner may have been a part of strong and weak economies in Pensacola, explaining its large size, as well as its potential abandonment.

This study on the B Street Schooner focused on both site-specific investigation and the examination of human influences on vessel design. Combining these two elements of research demonstrates the importance of understanding the individual vessels history and how it fits into the culture context of an area. Future research may include expanding this study to incorporate other ports along the Gulf of Mexico, such as New Orleans and Mobile. These possible comparisons may offer alternative economic and environmental contexts highlighting different vessel type selections and may show different vessel tradition in other parts of the Gulf of Mexico, as well as the influence that contact between different ports had on vessel design.

With the B Street Schooner and B Street Barge now buried under a wetland mitigation site, further investigation of the site would be very difficult, if not impossible (Figure 30). The extra five feet of sand and rock breakwaters make the site inaccessible for small boats, and the already difficult excavations are compounded by the extra sediment depth. As a result, this study
Figure 30: 2012 aerial image of the B Street Schooner site
may be the only in-depth research available on the B Street Schooner. The burial of the B Street Schooner site demonstrates that the Pensacola waterfront is continually changing. It also shows that this area is still a significant part of surrounding culture, and the historic vessels resting near the waterfront offer a connection to history and development of this important region of Pensacola.
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APPENDIX A

Conservation Techniques
CONSERVATION TECHNIQUES

Conservation of artifacts is an important part of any archaeological investigation, especially for underwater sites. Artifacts become permeated with water and salts, potentially harming the artifacts’ diagnostic potential if not properly treated. In order to preserve the integrity of recovered artifacts, certain procedures have been developed and are outlined in Donny Hamilton’s (1998) manual for conserving waterlogged artifacts. All of the artifacts recovered from the B Street Schooner followed these procedures.

**Pre-Conservation**

Once artifacts were recovered from the site, they were cataloged and bagged. The artifacts were kept in a wet condition to stop them from drying prematurely. At the end of the workday, the artifacts were transported to the conservation lab at the University of West Florida. Prior to any treatment, artifacts were inspected, documented, photographed, and in some cases, x-rayed. The artifacts were then placed in storage bins for desalination. The desalination of the objects prevents salt crystals from forming which otherwise would destroy the artifacts once they are dry. Salinity of the objects was measured using a conductivity meter. The artifacts were given several baths of tap water, pulling out the salts through osmosis. In order to remove as many salts as possible, the artifacts were rinsed in a final bath of de-ionized water. Once the artifacts were rinsed with de-ionized water, they were ready to undergo conservation.

**Faunal**

Faunal artifacts such as bones were mechanically cleaned with a soft brush to remove the surface dirt. The faunal remains from the site had little staining and did not require chemical cleaning. Once clean, the faunal remains were placed in a vacuum chamber, consolidated in a mixture of 50% Elmers Glue All and water, and left to air dry.
Flora

Several wood artifacts were recovered from the site, including structure, fasteners, and a barrel stave. Once wood becomes waterlogged, the cell structure becomes unstable. If left to dry in an uncontrolled manner, the surface tension created by evaporating water would cause the artifact to shrink, crack, and break. To prevent this, wooden artifacts were conserved using Acetone-Rosin in order to strengthen the cell structure. Prior to placement in the solution, the wood was dehydrated in three consecutive baths of alcohol and acetone. Once dehydrated, the wood was placed in a 69% solution of Rosin and Acetone and soaked for several months. Once removed, the excess solution was wiped off and the artifacts dried under a tent to control the drying rate.

Ceramic, Brick, and Stone

The ceramics from the site include earthenware and stoneware. Some of the ceramics sherds were spot treated with a 5% solution of ethylene-diaminetetraacetic acid (EDTA) to remove iron stains. After stain removal, the ceramics were then consolidated in a 3% solution of Acryloid B-72 and air-dried.

The brick and brick fragments recovered from the site were in stable condition after desalination. The intact brick was mechanically cleaned to remove dirt and marine growth. The brick and brick fragments did not require consolidation and were air-dried.

Stone was conserved in a similar manner to the brick. After desalination, the stone was mechanically cleaned to remove dirt and then air dried.
Glass

The glass fragments were in a stable condition after desalination. The fragments were mechanically cleaned to remove dirt and marine growth. Then a 5% solution of EDTA was used to remove iron stains. The fragments were then air-dried.

Metal

Several types of metal were recovered from the B Street Schooner such as iron, lead, and cupreous metals. Each requires its own treatment. Lead artifacts do not react in salt water and, as a result, were simply mechanically cleaned, air dried, and coated in Krylon to prevent further exposure to atmosphere.

The cupreous artifacts underwent two procedures depending on the amount of corrosion. If the artifact was in stable condition and minimally corroded, it was mechanically cleaned using fiberglass brushes to remove the corrosion. The artifacts that were heavily corroded underwent electrolytic reduction in an electrolysis tank. Following this treatment, the artifacts were rinsed in consecutive hot and cold baths of water, removing the electrolyte used in the electrolysis tank. After the rinsing baths, the artifacts were polished using fiberglass brushes. All of the cupreous artifacts were treated in a 3% solution of Benzotriazole (BTA). BTA acts as a barrier to moisture and atmosphere. Finally, cupreous artifacts were sealed in Krylon.

Several iron artifacts were collected. The salt water reacts with the iron creating an electrochemical reaction, changing the pH of the surrounding area forcing calcium carbonate and magnesium hydroxide to precipitate. These precipitates then mix with sand and other surrounding elements, creating a hard encrustation around the iron artifact. The encrusted artifact is known as a concretion. Sulfur reducing bacteria then degrade the metal inside the concretion. Once recovered, artifacts were x-rayed to determine how much iron remained.
Iron artifacts with significant metal remaining underwent electrolytic reduction to remove the encrustation, remove salts, and reverse some of the corrosion. Once cleaned, the iron was rinsed in consecutive baths of hot and cold water to remove the electrolyte used in electrolysis tank. The objects were coated in tannic acid, creating a corrosive resistant layer. Then the objects were consolidated in microcrystalline wax or coated with Krylon, protecting them from atmosphere.

Iron artifacts with little to no remaining iron were casted. In anaerobic conditions, iron is broken down by sulfur reducing bacteria, turning the metal into slush. The concretions were cleaned out, leaving a mold of the original object. The molds were filled using West System Epoxy. Once dry, the encrustation around the casts were removed using an air-scribe, an air powered needle gun. After removal of the encrustation, the casts were covered in graphite to add a black hue to the clear epoxy and coated with Kyrlon.

Post-conservation

Once the artifacts were conserved, they underwent post-conservation documentation and pictures. The artifacts were placed in storage with the University of West Florida curation facility. Ultimately, the artifacts will be placed in long term curation with the State of Florida.