THE INVESTIGATION OF THE CANEY CREEK SHIPWRECK
ARCHAEOLOGICAL SITE 41MG32

A Thesis

by

DAVID LAYNE HEDRICK

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

MASTER OF ARTS

August 1998

Major Subject: Anthropology
THE INVESTIGATION OF THE CANEY CREEK SHIPWRECK

ARCHAEOLOGICAL SITE 41MG32

A Thesis

by

DAVID LAYNE HEDRICK

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

MASTER OF ARTS

Approved as to style and content by:

Frederick M. Hocker (Chair of Committee)

William Bryant (Member)

David Carlson (Member)

Vaughn Bryant (Head of Department)

August 1998

Major Subject: Anthropology
ABSTRACT

The Investigation of the Caney Creek Shipwreck

Archaeological Site 41MG32. (August 1998)

David Layne Hedrick, B.A., University of North Texas

Chair of Advisory Committee: Dr. Frederick M. Hocker

The history of river transportation in the interior of Texas has received little attention. When the early pioneers arrived in Texas to settle land owned by Mexico, the only form of communication between the colonists was over long distances, usually traveled by wagons. This was extremely time consuming and the transportation of vast quantities were not guaranteed to make it to the final destination. When steamboats first came to Texas, the settlers immediately recognized the advantages of a more reliable method of communication and transportation. Steamboats gave men and women of the new frontier a chance not only to survive, but to prosper.

Caney Creek, in South Texas, was a major thoroughfare in the glory days of steamboating. This creek provided inland communication for plantations along its banks, which were some of the wealthiest sugarcane producers in the Texas. These plantations helped provide the southern states with essential supplies (sugar cane, cotton, cattle, etc.) during the Civil War. The use of steamboats on Caney Creek was a valuable method of transporting produce out of the interior of Texas, and the necessary labor back to the plantations.
This thesis is an historical and archaeological examination of the Caney Creek steamboat wreck, archaeological site 41MG32. Although it has not been identified, its location has been known since the early 20th century. Unfortunately, due to three hurricanes that battered the Texas coast in the late 19th and early 20th centuries, little documentation exists concerning Caney Creek or its associated trade. Archaeological investigations, however, have revealed several aspects this steamer had in common with other western river steamboats. This thesis will help illustrate western river steamboat operations in Texas and provide a better understanding of Caney Creek during the 19th century.
DEDICATION

The Caney Creek Steamboat Project would not have been possible without the support of Mrs. Valye White. Over the last four years, Mrs. White has allowed the SUAS and THC crew members the use of her home and docking facilities to help with the study of this site. This support has been a key factor in the success of this thesis.
ACKNOWLEDGEMENTS

More than 2,500 volunteer hours were donated to the project by 60 divers and professional archaeologists from across the State. Participant divers traveled from as far as San Angelo and Dallas, Texas to reach the site. All volunteers provided their own equipment and transportation. They also covered their hotel and meal expenses for themselves and the supervising archaeologists. Each participant came with a great amount of enthusiasm and a desire to see a piece of history in a manner that few will ever have the chance to experience. Laura Landry and Jim Hauser of L.A. Landry & Associates, Inc. provided a great deal of insight into the methodology applied to survey this vessel. Without their tireless efforts this project would not have succeeded as it did. The success of this project is in no small part due to the men and women of the Southwest Underwater Archaeological Society; Doug Nowell, John Luce, Mickey and Pam Sutters and all the SUAS members.

Support and interaction not only came from the men and women of the SUAS, but the local community also contributed to the overall success of the project. Many from Bay City, Palacios and Matagorda offered services, ideas, thoughts and talents. Local historians, county officials and museums provided historical and archival information. Many local informants offered their help and suggestions to help identify the vessel which contributed to the pool of historical data being gathered. This interaction between the State of Texas and the local community became an important factor during the development of the investigation.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>iii</td>
</tr>
<tr>
<td>DEDICATION</td>
<td>v</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>vi</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>vii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>ix</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>METHODOLOGY AND THE SUAS</td>
<td>7</td>
</tr>
<tr>
<td>Project Objectives</td>
<td>11</td>
</tr>
<tr>
<td>Research Design</td>
<td>11</td>
</tr>
<tr>
<td>HISTORICAL OVERVIEW</td>
<td>13</td>
</tr>
<tr>
<td>Matagorda County</td>
<td>16</td>
</tr>
<tr>
<td>Caney Creek</td>
<td>20</td>
</tr>
<tr>
<td>The Texas Revolution and Matagorda County</td>
<td>26</td>
</tr>
<tr>
<td>The Republic of Texas and Matagorda County</td>
<td>28</td>
</tr>
<tr>
<td>Navigation on Caney Creek</td>
<td>33</td>
</tr>
<tr>
<td>Trade on Caney Creek</td>
<td>34</td>
</tr>
<tr>
<td>Matagorda County and Caney Creek during the Civil War</td>
<td>40</td>
</tr>
<tr>
<td>CANEY CREEK STEAMBOAT WRECK</td>
<td>45</td>
</tr>
<tr>
<td>COMPARISONS</td>
<td>52</td>
</tr>
<tr>
<td>Hull Features</td>
<td>52</td>
</tr>
<tr>
<td>Engines, Boilers and Machinery</td>
<td>65</td>
</tr>
<tr>
<td>POSSIBLE SOLUTIONS</td>
<td>78</td>
</tr>
<tr>
<td>CONCLUSIONS AND RECOMMENDATIONS</td>
<td>85</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>89</td>
</tr>
<tr>
<td>APPENDIX A</td>
<td>94</td>
</tr>
<tr>
<td>-------------</td>
<td>----</td>
</tr>
<tr>
<td>VITA</td>
<td>97</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1.</td>
<td>Map of Austin’s Colony in the 1820s.</td>
<td>2</td>
</tr>
<tr>
<td>Figure 2.</td>
<td>Map of Matagorda Bay showing the location of Caney Creek</td>
<td>3</td>
</tr>
<tr>
<td>Figure 3.</td>
<td>Inaccurate site map produced by Wayne Boggs of the Texas Antiquities Committee in 1980</td>
<td>6</td>
</tr>
<tr>
<td>Figure 4.</td>
<td>Site map showing the distribution of points taken over the wreck.</td>
<td>10</td>
</tr>
<tr>
<td>Figure 5.</td>
<td>Map of Matagorda County.</td>
<td>14</td>
</tr>
<tr>
<td>Figure 6.</td>
<td>Lithograph letterhead showing buildings in Matagorda, Texas, 1860. Produced by Ed Lang</td>
<td>18</td>
</tr>
<tr>
<td>Figure 7.</td>
<td>Location of Caney Creek in Southeast Texas</td>
<td>21</td>
</tr>
<tr>
<td>Figure 8.</td>
<td>Soil types of Matagorda County</td>
<td>23</td>
</tr>
<tr>
<td>Figure 9.</td>
<td>Portrait of J. B. Hawkins</td>
<td>25</td>
</tr>
<tr>
<td>Figure 10.</td>
<td>Map showing location of Dog Island Reef below Matagorda.</td>
<td>27</td>
</tr>
<tr>
<td>Figure 11.</td>
<td>Map showing the location of Decrow’s Point in relation to Matagorda.</td>
<td>29</td>
</tr>
<tr>
<td>Figure 12.</td>
<td>Map showing log jams on lower Colorado River</td>
<td>30</td>
</tr>
<tr>
<td>Figure 13.</td>
<td>A View of Matagorda, Taken from the Bay, Sept. 1860</td>
<td>32</td>
</tr>
<tr>
<td>Figure 14.</td>
<td>Map of local landmarks</td>
<td>35</td>
</tr>
<tr>
<td>Figure 15.</td>
<td>Illustration of Hawkins’ Sugar Mill in 1852</td>
<td>39</td>
</tr>
<tr>
<td>Figure 16.</td>
<td>Fortifications at the mouth of Caney Creek with shoreline changes</td>
<td>41</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>17</td>
<td>Map of fortifications at the mouth of Caney Creek</td>
<td>42</td>
</tr>
<tr>
<td>18</td>
<td>Map showing location of Indianola</td>
<td>43</td>
</tr>
<tr>
<td>19</td>
<td>Reconstruction of beam of ship</td>
<td>45</td>
</tr>
<tr>
<td>20</td>
<td>Distribution of points mapped on the Caney Creek steamboat wreck</td>
<td>47</td>
</tr>
<tr>
<td>21</td>
<td>Reconstructed site plan</td>
<td>48</td>
</tr>
<tr>
<td>22</td>
<td>Magnetic anomaly produced by the Caney Creek wreck</td>
<td>49</td>
</tr>
<tr>
<td>23</td>
<td>Side-scan sonar image of the Caney Creek wreck</td>
<td>49</td>
</tr>
<tr>
<td>24</td>
<td>Close-up of the steamboat’s machinery</td>
<td>50</td>
</tr>
<tr>
<td>25</td>
<td>Sector-scanning image of the wrecked steamboat</td>
<td>51</td>
</tr>
<tr>
<td>26</td>
<td>Close-up of steamboat wreck</td>
<td>51</td>
</tr>
<tr>
<td>27</td>
<td>A certificate of 1835 that authorized the <em>Yellow Stone</em> to trade in the</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>foreign waters of Texas</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Model of the Steamboat <em>Black Cloud</em></td>
<td>56</td>
</tr>
<tr>
<td>29</td>
<td>Stern section of the <em>Black Cloud</em></td>
<td>57</td>
</tr>
<tr>
<td>30</td>
<td>Isometric view of aft face of wooden bitt found in the stern on the Caney</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>Creek shipwreck</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Roller chock found in the stern of the Caney Creek shipwreck</td>
<td>61</td>
</tr>
<tr>
<td>32</td>
<td>Illustration of a turnbuckle similar to those on the Caney Creek wreck</td>
<td>64</td>
</tr>
<tr>
<td>33</td>
<td>Plan view of the machinery of the <em>Yellow Stone</em></td>
<td>66</td>
</tr>
<tr>
<td>34</td>
<td>Drawing of the engine recorded on the Caney Creek shipwreck</td>
<td>68</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>35</td>
<td>A single poppet valve and a double poppet valve</td>
<td>68</td>
</tr>
<tr>
<td>36</td>
<td>Crosshead on the Caney Creek wreck</td>
<td>69</td>
</tr>
<tr>
<td>37</td>
<td>Paddle-wheel assembly on the Caney Creek wreck</td>
<td>71</td>
</tr>
<tr>
<td>38</td>
<td>Full-stroke and cutoff cam</td>
<td>72</td>
</tr>
<tr>
<td>39</td>
<td>Pillow block assembly for the Caney Creek wreck</td>
<td>73</td>
</tr>
<tr>
<td>40</td>
<td>Isometric view of the workings of a side-wheel steamboat</td>
<td>74</td>
</tr>
<tr>
<td>41</td>
<td>Boilers on the Caney Creek wreck</td>
<td>75</td>
</tr>
<tr>
<td>42</td>
<td>Map showing the entrance to “Old Mitchell’s Cut into Matagorda Bay</td>
<td>79</td>
</tr>
<tr>
<td>43</td>
<td>First listing of the <em>Troy</em> as she was prepared for service</td>
<td>83</td>
</tr>
<tr>
<td>44</td>
<td>Paddle-wheel flanges from the Caney Creek steamboat wreck during a drought</td>
<td>88</td>
</tr>
</tbody>
</table>
INTRODUCTION

River transportation played an important role in the development of many North American frontier settlements. These river highways were not only vital for trade, but served as a necessary means of communication between settlements, and linked the coastal communities, where supplies landed, with inland populations. Realizing the importance of rivers, Stephen F. Austin chose the region of Texas containing Caney Creek, between the Lavaca and Brazos rivers, for his settlement in the 1820s (Figure 1). Austin understood that the river systems running through the area, such as Caney Creek, would benefit his colony by establishing necessary routes for trade and communication.

River transportation was critical for the economic growth of the new frontier even before Texas won its independence from Mexico. Most small communities developed around the available waterways and worked to improve the navigation systems that existed within their respective areas. Before the establishment of railroads and modern highways, river transportation enabled Texas to develop as a true agricultural state and a leading producer and exporter of cotton and sugar. Shipping routes brought economic stability and reliability to early farmers and plantation owners, who could ill afford to risk their goods on long overland routes. As river transportation increased and became more accessible to local settlements, planters and farmers moved from subsisting to prospering.

---

This thesis uses Historical Archaeology as a model for format and style.
Caney Creek, on the central coast of Texas, was one of the state's most productive areas during the mid- to late nineteenth century (Figure 2). This river connected plantations along its banks with the coastal shipping centers of Matagorda and
Indianola. In turn, these towns traded with larger ports such as Galveston, New Orleans and some on the East Coast and in Europe. Caney Creek and the commercial resources transported along its route were vital in the new Republic’s early years and their importance increased substantially during the Civil War when agricultural products were in high demand. Presently, Caney Creek is a small, narrow creek with little of the river traffic it formerly supported. This creek would have disappeared by the early 20th
century without the construction of the Gulf Intercoastal Waterway, which kept the creek accessible to a minimum of traffic. Today the only reminders of the creek's significance are the archaeological resources that have been left behind.

Archival research revealed that in the 19th century Caney Creek carried vessels of up to 150 tons 30-40 miles upstream (Malsch, 1988: 64 & 138). Although some documentary evidence exists which recounts the creek's significance at its height (Stone, 1986:26), existing literature fails to describe the vessels that plied this narrow waterway. In general, historical and archaeological sources indicate these vessels had a shallow draft that enabled them to enter the creek and maneuver between landings. These conditions would have prohibited typical eastern-built ships that were either too wide or whose draft was too deep. Western river steamboats, operating in Texas and elsewhere, were lightly framed with thin widely spaced scantlings. These cheaply built hulls became longer, wider, and shallower as the need for cargo space increased. These ships were ideal for the type of work required on Texas' rivers. With water depths which fluctuate from 15 to no more than a few feet, rivers like Caney Creek demanded the characteristics offered by western river steamboats.

This thesis is an historical and archaeological examination of the Caney Creek steamboat wreck, archaeological site 41MG32. The vessel is currently unidentified, although local informants have known of its existence for years. Unfortunately, due to three hurricanes that battered the Texas coast in the late 19th century, little documentation exists concerning steamboats on Caney Creek. Archaeological investigations, however, have revealed several aspects common to western river
steamboats which were abundant in North America, including Texas. In investigating the Caney Creek steamboat wreck, a better understanding of steamboat operations in Texas can be achieved which will help to develop an historical view of Caney Creek during the 19th century.

Archaeological investigations of this site first took place in 1975. Gayle Fritz's, "Matagorda Bay Area, Texas: A Survey of the Archaeological and Historical Resources" mentions this wreck briefly:

A side-paddle wheel boat which served the plantations of lower Caney Creek during the mid-nineteenth century was abandoned and left to sink at the site. Following the Civil War, business for two partners who operated the boat was reportedly slow and one day they simply walked off. A metal pipe sticks out of the water to warn modern boaters of the wreckage. Recommendations are that an underwater exploration be undertaken to determine its historic potential (Fritz, G., 1975:97-98).

In 1980, this wreck was again surveyed. Wayne Boggs of the Texas Antiquities Committee misidentified the ship as a sternwheeler and concluded it ran across the creek east-to-west (Figure 3). This report described little of the preserved remains and reported the ship was scuttled during the Civil War (Boggs 1980:1). Since 1993, this site has been investigated 12 times by the joint efforts of the Texas Historical Commission and the Southwest Underwater Archaeological Society. These investigations make up the bulk of the archaeological information presented and
Figure 3. Inaccurate site map produced by Wayne Boggs of the Texas Antiquities Committee in 1980. (Courtesy of the Texas Historical Commission)

confirms Gayle Fritz's supposition about the vessel's design.
METHODOLOGY AND THE SUAS

On a national level, shipwrecks are one of the least understood cultural resources existing in our nation’s off-shore waters, harbors, estuaries, rivers, and lakes. Thousands of shipwrecks are located along the coast and inland waters of North America. Because of this large number and the nature of shipwrecks it is impossible for the Federal or state governments to evaluate and protect this important cultural resource effectively. Many shipwrecks, that might otherwise qualify for protection under the rules and guidelines of the National Register, lie threatened on the sea floor.

The Abandoned Shipwreck Act of 1987 transferred control of these shipwrecks from the federal government to the individual states in whose waters these ships are located. This act also advises on the protection and care these resources require and provides information on how to set up and maintain shipwreck programs (Federal Register 1990, Vol. 55, (233): 50120). Because of the importance of this Act, state governments try to place significant sites under their protection. Through local involvement, state governments can increase interest in submerged cultural resources and stimulate public awareness, which will benefit all archaeological resources existing within state boundaries. This Act protects the Caney Creek shipwreck and allows archaeologists the opportunity to record and study this vessel without the threat of its immediate destruction.

Because government cutbacks have limited the effectiveness of many state governments in their ability to conduct large scale surveys or excavations, state agencies
must find a more economic means to sustain their shipwreck programs. One attempt at dealing with this lack of support is with volunteers. Trained volunteer groups are becoming a valuable, yet inexpensive resource to help meet state obligations. This additional resource allows state agencies the ability to develop active cultural resource management programs and to conduct additional surveys that could locate historical shipwrecks (Osborne & Gaebler 1992:1-15). With this type of volunteer involvement, not only is the public allowed active participation, they are trained to understand and preserve the integrity of these resources.

In response to this situation, several organizations have assembled in Texas which assist archaeologists in protecting submerged cultural resources. The Southwest Underwater Archaeological Society (SUAS) is one group which helps the Texas Historical Commission (THC) by locating historic ship remains and conducting extensive archaeological surveys to determine a vessel’s nature and condition. These surveys help the THC assess the condition of these wrecks and their suitability for inclusion on the National Register. The SUAS’s objective is to offer the state an inexpensive readily available resource by allowing volunteer sport divers and amateur historians the opportunity to participate in underwater archaeology programs. These volunteers are appropriately trained in the different aspects of nautical archaeology and given the opportunity to conduct scientific research by documenting archaeological sites.

Field work on Caney Creek began on April 15, 1993. Members of the SUAS assembled at the home of Mrs. Vallye White, whose property is adjacent to the site. These individuals brought a variety of skills to the SUAS, which ultimately added to the
organization’s effectiveness. Also, several professionally trained archaeologists donated their time to the SUAS to help evaluate shipwreck remains. To stay within the tenets of the THC, non-collecting and non-excavating strategies were implemented during the mapping process to minimize further deterioration.

During training sessions, each SUAS member attends talks designed to introduce divers to the multitude of environments in which submerged cultural resources exist. These classes train participants in the theories of historical archaeology and survey techniques. Techniques which are commonly used to determine the extents of underwater material are practiced in a pool before any member may participate on a field project. Additionally, divers are trained to work in low to no-visibility conditions. These sessions reproduce field conditions, strengthening a diver’s ability to understand and to be better prepared to record archaeological remains. The SUAS also includes basic field conservation theories to help volunteers understand the importance of preserving and protecting all artifacts.

In the field, SUAS members used trilateration to map the exposed portion of the wreck and its associated components. A bulkhead on the west side of the river was used as a baseline to set up the mapping process. Divers measured the distance from known locations on the baseline to determine the position of the ship’s machinery, exposed wooden hull and scattered artifacts. Direct measurements were also taken on each piece of machinery and exposed timber to precisely record the dimensions of individual features. This information was collected and imported into AutoCad to produce a two-dimensional site plan (Figure 4). Later, this information was checked with a SOKKIA
Total Data Station (TDS). The TDS produces sub-centimeter accuracy and determined that any error, using the trilateration method, was within acceptable tolerances. Most discrepancies were less than one to two inches and considered adequate for the survey.

In surveying this wreck, the THC and SUAS developed a private-public partnership which could be used as a model for the inclusion of volunteers on underwater archaeological sites. Based on the success achieved on this project, the SUAS has demonstrated their capabilities and will provide valuable assistance on other underwater archaeological sites for the State of Texas. This goal developed a partnership that will benefit not only the SUAS but also the THC and the underwater archaeological resources existing in state boundaries.
Project Objectives

The Caney Creek Shipwreck Project began in 1993 as a joint project between the THC and the SUAS. This project has, through a series of training exercises and historical and archaeological research, identified and met several important objectives necessary to properly analyze this site. The first objective was to document the remains of a steamboat assumed to date from the mid- to late 19th century. The second objective was to evaluate the site’s present condition and assess the vessel’s short and long-term management needs for the State of Texas. The Texas Historical Commission, using this information, can develop a comprehensive management plan that will protect and maintain the site’s integrity until it is properly excavated and its artifacts are conserved. The last objective focused on archival research to evaluate the vessel’s historical significance as it pertained to Matagorda County and to clarify our understanding of 19th-century steamboat navigation in Texas.

Research Design

The research design, based on questions raised by the project objectives, focused on how social, economic, and environmental conditions pertaining to Caney Creek, in the 19th century, utilized the western river steamboat. This ship utilized base manufacturing elements like hull design or engine size and then fine tuned it for local
conditions. Indeed, vessels plying the inland rivers had to interact efficiently within the existing environmental, economic and technological systems of the area.

The identification of existing 19th century ship construction elements, therefore, became one of several primary research themes. The construction techniques employed to build the vessel could give clues into the identity of the vessel and its function on the river. Although most of the machinery onboard was intact and recorded, field investigations documented little of the overall hull design. The surveys did provide archaeological evidence which enabled research to encompass documentary, historical and archival issues which provided information about its construction. In this way, comparisons could be made with other contemporary vessels which identified similar construction techniques. As questions were answered, the overall significance of the unidentified vessel and its interaction in Matagorda Bay and Caney Creek became clear.
HISTORICAL OVERVIEW

Early Texas history evolved along the shores of present day Matagorda Bay. Matagorda comes from the Spanish words, "Mata" meaning small brush or shrubs and "Gorda" meaning fat or thick. This description was thought to pertain to the area’s dense vegetation and natural canebrake. This vegetation led to Matagorda being called, "as fertile as the Nile" (*Bay City Breeze* [BCB], September 20, 1894). Many seafaring countries, interested in expansion, sent expeditions to the area in the early years of exploration. Spain, in 1519, was the first to record Texas’ shoreline (Chipman 1992:24-25). The Spanish viceroy, Conde de Galve noted Matagorda Bay as “having a good depth,” in the year 1690, when he sent two expeditions to Texas (Guthrie, 1988:116). The French began exploring the Gulf Coast region in the late 17th century when René Robert Sieur Cavalier de La Salle came to Matagorda Bay (Weddle 1991:26-39). The voyage ended in disaster but did set up a French settlement in Texas in 1686 (Weddle 1991:26).

From 1782 to 1810, interest increased in the Matagorda Bay area (Figure 5). At this time ships regularly called at either the Port of San Bernardo or Matagorda to unload goods and passengers. Additionally, the Port of Matagorda became a regular supply point for the presidio of La Bahía. Joseph Santoja, commander of the presidio of La Bahía del Espíritu Santo, describes Matagorda in 1782: “Matagorda lay due north, that from where ships could be anchored it must have been a quarter of a league, and that
from the beach where one disembarks to the presidio of La Bahía del Espíritu Santo it seemed to him that it must be twelve leagues by land. This proximity caused the

![Map of Matagorda County](image)

*Figure 5. Map of Matagorda County. (Courtesy of Matagorda County Historical Commission).*

schooner’s captain, Don Luis Landrin, to come in the said port of Matagorda with the intention of being supplied with provisions from the aforementioned presidio of La Bahía” (Bexar Archives, 133:12). By 1804, the Spanish Government in Mexico recorded the population of Matagorda at 945. The rising population increased the municipality’s value and in 1805, the Spanish government ordered Don Miguel Serrano to thoroughly inspect the area to determine its importance for the new frontier (Guthrie,
1988:116). Internal conflicts refocused Spain’s attentions and resources away from Texas preventing Serrano from making his inspections. Mexico was waging a war for independence, which impaired Spain’s efforts to settle Texas with a Mexican population. The Spanish government realized an official port in Texas was crucial for maintaining their interests in the new frontier. Without Mexican support, Spain was forced to allow Americans to settle in the province of Texas in 1821.

Stephen F. Austin, one of the founding fathers of the Republic of Texas, became an official Empresario (land agent) for the Spanish government in 1821. This confirmation came after the death of his father who had begun negotiations with the Spanish government several years earlier. Austin obtained permission from Spain to settle 300 families in the province of Texas on the condition that they become loyal Spanish citizens. Upon receiving this commission, Austin immediately traveled to New Orleans to secure plans for a colony. After procuring a vessel, Austin brought the first families to Texas on November 22, 1821 (Robbins, 1952:16). The following year, however, Mexico won its war of independence and the new government required Austin to return to Mexico City to confirm his position with the Mexicans. After receiving his confirmation, Austin brought the remaining families to Texas in 1822. During this voyage, Austin’s ship wrecked off the coast of Galveston losing all cargo and supplies and stranding the passengers. Not until later that year did the stranded passengers finish their journey, arriving at the mouth of the Colorado River.
Matagorda County

Prior to 1822, the area known as Matagorda County was largely unpopulated, with only a few Anglo-Americans living in the vicinity of the Colorado River, Caney Creek, and Tres Palacios creek (Figure 5). Most early settlers traveled to southeast Texas by water, coming by schooner and steamboat. They came from the eastern United States and Europe and included German, French, Dutch, and Polish immigrants (Tatum 1986:47). These early settlers recognized the possibilities the land offered. With the resources at hand, a better life awaited them.

The arrival of Austin’s colonists exacerbated tensions between the Mexican government and the Anglo-American settlers and foreign immigrants. Mexico, alarmed at the growing numbers of Anglos living along the valuable coastal regions of Texas, was afraid of losing the territory. In March of 1823, Mexico issued a colonization law for Texas, prohibiting any further settlements within ten leagues of the coast (Baker, 1919: 136). In reaction to this law Austin, on June 5, 1826, appealed to the Mexican government on behalf of the colonists already living along the coast within the effected territory. Austin petitioned that it was necessary to keep open the reserved land within the territory between Lavaca and San Jacinto rivers for the welfare of his colonists (Baker, 1919: 143). The Mexican government yielded, creating a reservation that allowed settlement within the valuable coastal plains, including what is today Matagorda
County. Mexico’s decision paved the way for rapid population growth within the area, and the founding of the town of Matagorda.

In describing Matagorda County in 1825, colony surveyor Elias Wightman wrote:

We, the said petitioners, having viewed Matagorda Bay as the most important and safe harbor on the coast....that there may be a town erected on the east side of the Rio Colorado some two or three miles from the mouth on the margin of the bay. We have discovered one of the most beautiful situations for the building of a large, commodious, and commercial town that our imagination could conceive. A large amphitheater, a semi-circular bluff of about six or eight feet above high water mark of the very permeable dry soil and ascending back to an extensive and beautiful prairie....We are confident that a mere trifle will open a canal from the Colorado through this low land to the bay, and a bayou already flows up to meet it (Guthrie 1988:124).

On August 2, 1826, Wightman and colonists H. H. League, James Ludlow, and Richard Matson petitioned Austin for permission to establish the town of Matagorda. The petitioners identified Matagorda Bay as “the most important and safe Harbor on the Coast of the Department of Texas.” Additionally, they stated that the areas of the Brazos, [San] Bernard, Bay Prairie, Colorado and Caney Creek were the “most superior fertile and rich section of the country” (Stieghorst 1965:10-11).
Founded in 1829, the Municipality of Matagorda, was established under Decree No. 265 (Figure 6):

![Image of buildings and a bird]

*Figure 6. Lithograph letterhead showing buildings in Matagorda, Texas, 1860. Produced by Ed Lang (Courtesy of the Matagorda County Historical Commission.)*

The Congress of the State of Coahuila and Texas has thought proper to decree:

Article 1. A municipality shall be established at Matagorda, whose jurisdiction shall be embraced in the following limits; commencing at the
entrance of Caney Creek into the Gulf of Mexico, ascending said creek to
intercept the northern boundary of the municipality of Austin, thence west as
far as La Vaca River, descending said river, to its mouth, and following the
coast eastward to its beginning.

Article 2. With this intent the Alcalde of the town of Austin shall proceed to
said settlement to preside there at electoral meetings of the new
Ayuntamiento according to law.....” (Gammel 1898 1:352).

Matagorda, situated at the mouth of the Colorado River, soon became a social and
economic center. Colonel Juan Almonte, Surveyor for Mexico in 1835, reported that in
6 years Matagorda had become the third largest town in the province of Texas. At that
time it had 1,400 inhabitants, with another 250 people living within its jurisdiction.
Only San Felipe and Columbus, with 2,500 and 2,100 inhabitants respectively, surpassed
Matagorda in population. Almonte predicted Matagorda’s customhouse would soon
become the second most important customhouse in Texas, and judging by the rapid
population growth, he believed Matagorda would soon become the largest town in the
new land (Southwestern Historical Quarterly 1925:200).

The early 1830s was a period of expansion for Matagorda, as it became the
gateway port to Texas. Immigrants arrived in a steady stream by sea and overland by
wagons. By 1832, stimulated by its ever increasing connection with New Orleans,
Matagorda boasted several large businesses and shipping centers. These industries grew
in relation to the production of cotton, sugar and other crops coming from the
surrounding river plantations, especially along Caney Creek. Rapid growth of the area
spurred new plans to facilitate the transportation of raw goods from remote farms and plantations to the larger ports. In 1834, Elias Wightman developed plans to begin improvements at the east end of Matagorda Bay. These plans called for the construction of a canal from Caney Creek to the bay. Wightman, who owned land on the west side of Caney Creek and on the east end of Matagorda Peninsula, needed a faster and more reliable means to transport his goods to Matagorda. Subscriptions, however, did not sell and the funding was not available to complete the project. Although this plan never came to fruition, it was the first of many related plans to improve the east end of Matagorda Bay.

Caney Creek

The history of river transportation in Texas illustrates the importance of a reliable means of navigation and communication to developing settlements. When the first colonists arrived, in the early 19th century, the difficulties pertaining to available transportation posed significant problems. Railroads were nonexistent, leaving only wagon and river transports to convey cargo. Overland routes, however, were costly and slow, often requiring a month to travel 175 miles (Bagot, 1978: 96). Steamboats offered more reliable and cost effective transportation for farmers and planters who required a dependable means to transport their produce to market.

Caney Creek, in Southeast Texas, was an important thoroughfare for steam navigation in the 19th century (Figure 7). This creek provided communication between
the wealthy upstream plantations, and the ports of Matagorda, Indianola, and abroad. In
the 1800's, Caney Creek, also known as "Cane Brake Creek," or "Old Caney" emptied

![Diagram of Texas coastline with Caney Creek](image)

*Figure 7. Location of Caney Creek in Southeast Texas.*

into the Gulf of Mexico just east of Matagorda Bay. During the period of rising sea
levels a wide estuary occupied the present Caney Creek area. This estuary gradually
filled with fluvial deposits of the Holocene Brazos-Colorado Delta (Fritz, 1975: 27). The main eroding stream, presently the main channel of the Colorado River, split away from the older (Caney Creek) channel and diverted flow to the west. The massive log jam trapped sediments in the Colorado and prevented the river from creating a delta into Matagorda Bay until it was removed in 1929. The original waters of the Colorado, therefore, discharged into the Gulf of Mexico by two distinct mouths, 25 miles apart, forming an intensive island (Bay City Breeze [BCB], Feb. 19, 1898). Bottomlands, lying between the Colorado River and Caney Creek, contained large prairies covered with a lush growth of grass and one of the most extensive canebrakes in Texas. The cane extended several miles in breadth for a distance of 40-50 miles. Reportedly, it was so thick that it became dangerous to travel within its boundaries. Indian and animal attacks were common, and early settlers were wise to stay away (Parker, 1986: 9-11).

Matagorda County became the hub of development during the mid-1800’s, due to its topography and advantageous water systems. This area was known for its fertile soil and luxuriant vegetation. The pledger silt loam, the most fertile soil type of the county, provided an average depth of fourteen inches and consists of a black or dark brown silty loam, containing large quantities of organic matter. John Marr’s thesis *The History of Matagorda County*, identified the pledger soil as being “the most productive soil in the county” (Marr, 1928: 6-7). Marr concluded that the cane bottoms were in high demand because the land was healthy and easily cleared with cheap labor. The pledger loam was characteristic of Caney Creek, and the land was quickly acquired (Figure 8). This soil was well adapted to sugar as well as cotton production and under
favorable conditions, produced a high yield. The area also produced large amounts of corn for the early republic. Average yield reached nearly forty bushels to the acre, while yields of sixty bushels or more were reported (Matagorda County Tribune [MCT],

Figure 8. Soil types of Matagorda County. Note the pledger soil around the Caney Creek area. (Courtesy of the Matagorda County Historical Commission)

August 23, 1945). Native growth of the area consisted of oak, hickory, and other hard woods, but the cane remained the most characteristic vegetation of the region.
The Caney Creek area attracted immigrants of many nationalities creating a confluence of cultures in Matagorda County. Small farmers, who failed to compete with the aristocratic planters in the southern United States, also drifted westward to Texas, bringing their slaves. In the 1850s, slave labor became increasingly important to planters in the Matagorda area. In Matagorda County, during the decade, both the number of slaves and their value increased from 1,208 slaves worth $500, 520, to 2,265 slaves worth $1,130,300 (Davis 1992:120-21). The wealth produced by slavery and the plantation system made this period the "golden days" of Matagorda. Later, as the Civil War approached, southern planters in the United States feared the Union government would free their slaves. This fear brought large plantation owners westward into Texas, especially Matagorda County and Caney Creek (Matagorda County Tribune [MCT], August 23, 1945, Section 2:2).

Because of the production coming out of Caney Creek, local farmers and plantation owners soon began to pressure the Texas government for improvements to facilitate navigation. Sugar, cotton and molasses were floated down Caney Creek on steamboats and other craft, carried across an isthmus 800 yards wide to Matagorda Bay and then transported again by boat to the Port of Matagorda. These commodities, traveling through Matagorda, stimulated interest for improvements in the east end of Matagorda Bay and the head of Caney Creek. Some of the largest sugarcane and cotton crops in the State of Texas were grown in the Matagorda Bay area particularly around Caney Creek. The sugar industry was greatly stimulated in the early 1850s when James
B. Hawkins built and operated one of the State's largest sugar mills on his 30,000 acre Caney Creek plantation at Hawkinsville (Figure 9).

Cotton was planted on most farms and plantations. It was a great source of wealth and growth for the Matagorda and Caney Creek areas. Col. Robert Williams built the first cotton gin in 1825 after he arrived with nine slaves (Parker 1985:31). Gins of this period could not process more than 200 bales in a season, therefore it was

Figure 9. Portrait of J. B. Hawkins. (Courtesy of the Matagorda County Historical Commission)
imperative for each large plantation owner to have his own gin and it soon became common for even small farmsteads to own a cotton gin.

The Texas Revolution and Matagorda County

Matagorda Bay became a hotbed of naval activity during Texas’ fight for independence. On November 25, 1835, the General Council of the provisional state government passed a bill to create a navy. With this in effect, the navy purchased the first of four vessels, the William Robbins, from Matagorda, and renamed it the Liberty in January 1836. Additional ships purchased included the Brutus, Independence, and Invincible. These vessels were procured to protect the flank of General Houston’s army. Commodore Hawkins, the first commander of the Texas Navy, kept his fleet in Matagorda Bay, choosing Matagorda as the Texas Navy’s first home port. In mid-April 1836, the fleet’s base moved to Galveston Island to protect the interim Texas government headquartered on the island.

Due to the lack of funding and the availability of ships, the Texas Government enlisted privateers to assist the Navy. Matagorda again played a pivotal role by supplying such mercenaries. Silas Dinsmore, a Matagorda ship owner and captain, received three letters of marque and reprisal to seize Mexican ships and cargoes on December 1, 1835. His proficiency and success soon earned him a captaincy in the Texas Navy (Davis, 1992:102-103). At the conclusion of the war, Matagorda County
was incorporated as one of the original twenty-three counties of the Republic of Texas, and the town of Matagorda was designated county seat.

Matagorda’s economic pace steadily increased with the port growing in importance after the war. However, concerns began to surface as oceangoing ships had to lighten their loads to pass through the shallow waters at Dog Island Reef (Figure 10).

Figure 10. Map showing the location of Dog Island Reef below Matagorda.
This obstruction of shells, crossing the bay four miles below Matagorda, caused vessels to unload their cargoes and passengers in to small lighters to reach shore. Even so, the shipping industry rapidly grew, and it was not unusual to see ten or twelve foreign vessels lying at anchor in the bay below Dog Island Reef (Guthrie 1988:132-133).

The Republic of Texas and Matagorda County

With the amount of commercial activity coming into Matagorda Bay, President Houston appointed George M. Collinsworth as the first collector of customs for the Matagorda revenue district in 1837. Collinsworth’s duties included collecting import duties, enforcing rules and trade regulation, reprimanding ship captains for failing to follow regulations, and appraising damaged goods of ships wrecked at Pass Cavallo.

The pilot for Matagorda Bay lived at Decrow's Point, on the western end of Matagorda Peninsula (Figure 11). This land belonged to the league granted to Thomas Decrow, Sr., in 1831. After serving as a boarding pass officer, Decrow became the pilot for Pass Cavallo. He met ships at Decrow's Point at Pass Cavallo or offshore, and guided them through Matagorda Bay to Dog Island Pass. From here ships had to lighten their loads into Matagorda. Captain Decrow built his home at Decrow's Point, where he owned a wharf with a pier and warehouses for storing merchandise.

From 1840 to 1865, Matagorda ranked second to Galveston as the leading seaport for Texas. However, its growth remained limited because of Matagorda Bay’s shallow waters and the reef at Dog Island. In her book Texas (1836), Mary Austin
Holley reported the average depth of Matagorda Bay at only eight feet. William Bollaert noted in his journal entry of April 19, 1842, that his vessel, anchored off Matagorda, was in only 6 ½ feet of water. It took Bollaert an hour to lighter his goods to shore. To the Englishman, this was "rather inconvenient" for the shipment of goods (Hollen 1956:69).

Another factor affecting Matagorda’s growth was a massive log jam or raft along the lower Colorado River (Figure 12). First noted by Alonso de Leon in 1690, the head of this obstruction was located twelve miles above Matagorda, effectively closing the
Figure 12. Map showing log jams on lower Colorado River. (Courtesy of Matagorda County Historical Commission.)
river to navigable traffic (Clay 1985:130). On April 14, 1838, after a five-day trip down
river from Bastrop, the keelboat David Crockett arrived at the head of the log jam. From
that time on, Matagorda teamsters met boats at this location and transported the cargo
around the obstruction. All cargoes were then shuttled from the head of the raft into
town.

These problems frustrated the merchants and planters from the towns of
Matagorda, Columbus, and La Grange to pressure the Texas Congress to incorporate an
organization to open and maintain a channel in the often blocked river (Stieghorst
1965:16). In response, the Colorado Navigation Company was chartered in 1837. This
company had its main office in Matagorda and issued capital stock of $25,000, in shares
of $100 each, for the purpose of clearing a channel capable of navigating through the raft
(Clay 1985:131-136). The company was required to open a channel permitting
steamboats to pass fifty miles upstream within four years or forfeit its charter. Once the
fifty-mile channel was complete, tolls could be levied on all craft using the river. The
company hired a civil engineer to survey the raft in 1839, but no further action was taken
due to lack of funds. The US Army Engineers, between November 1853 and March
1854, dug a bypass channel around the jam using a series of lakes. For the first time a
steamer from Matagorda could ply directly to Columbus and La Grange through safe,
navigable waters. The steamer Betty Powell, for example, regularly carried 500 bales of
cotton down river from La Grange (Davis 1992:117-118). This raft was not effectively
removed until 1929 when it was blasted in order to cut a channel for navigation.
Even with these limitations, Matagorda soon became an important port for Texas. Lithographer Ed Lang produced a lithograph of Matagorda Bay, *A View of Matagorda, Taken from the Bay, Sept. 1860*, in which vessels of various designs are depicted (Figure 13). One of these ships is a sidewheel steamboat. This ship illustrates a type of vessel working the rivers of Texas, and could have been operating on Caney Creek.

Indeed, the years between 1854 and 1860 marked the height of navigation on the Colorado and for the port of Matagorda.
Navigation on Caney Creek

By the late 1840s, steamships were regularly operating on Caney Creek. The steamship *Delta* operated on Caney Creek from 1849-1851 (Indianola Bulletin, April 15, 1852). In 1860 the sidewheel steamer *Troy*, after repairs in Indianola, resumed her runs to Caney Creek (Malsch, 1988: 64 & 138).

In the years immediately preceding the Civil War, Caney Creek was a thoroughfare for many vessels and was the main means of transportation for heavier and bulkier merchandise along the creek. The sidewheel steamboat *Planter*, built by Captain John Duncan, worked Caney Creek just prior to the war (Parker, 1986:110). Little information is known about this ship and its final whereabouts are unknown. Captain Duncan owned a plantation on Caney Creek near the Colorado River. Before the construction of the *Planter*, Duncan hauled his cotton to Elliot's Ferry to transport his goods across the river (Figure 14). The cargoes were then hauled to the head of navigation on Wilson Creek. At this time, Wilson Creek was very narrow and deep, allowing boats to tie up at almost any point along the bank for loading (Parker, 1986: 110). Goods had to go down Wilson Creek to Tres Palacios River and eventually into Matagorda Bay. Boats then carried the cotton and other commodities to Palacios Point, now called Oyster Lake, where it was loaded on sea-going vessels for transport to larger ports. This route was slow and expensive. Duncan built his paddlewheel steamboat to produce reliability and speed, and in turn, to increase his profitability.
Trade on Caney Creek

Transporting goods to market was difficult and presented a constant challenge on Caney Creek. The Caney Navigation Company, organized in 1838, was responsible for keeping the channel clean and for creating canals to connect the creek with Matagorda Bay, Cedar Lake, and the Colorado River (Figure 14). The company planned to deepen the channel at its mouth to allow ships with deeper draft upriver (Gammel 1898: 1748-49.). At the town of Manhattan, subscriptions for the project were to be offered to all settlers in July 1838, under the supervision of J.E. Fields, E.R. Wightman, and Thomas Cayce. At Matagorda, subscriptions were sold under the supervision of Silas Dinsmore, John Duncan, and S. Mussina. Subscriptions were also sold at Robert H. Williams' home, under the supervision of R.H. Williams, T. Jamison, and William H. Jack (Parker, 1986: 109). The proposed town of Manhattan never materialized nor did the company’s plans.

In May 17, 1841, the Colorado Gazette of Matagorda carried the following news item:

We already know of five planters from Alabama and elsewhere, who have purchased land in this county and will emigrate this season with an aggregate of 200 slaves. The cotton crop which is expected to be raised this season on Caney and the Colorado is estimated by well-informed and prudent judges at 5,000 bales; at least 150 per cent more than the crop which is now on its way to market. The planters on lower Caney are boating their
crops down to the mouth of that stream, hauling them 800 yards across the isthmus, and then transporting them in lighters, carrying from 50 to 80 bales

![Map of local landmarks](image)

*Figure 14. Map of local landmarks. (Courtesy of Matagorda County Historical Commission)*

each to the harbor of Matagorda.

In 1843, Congress passed an act to incorporate the Matagorda Caney Navigation Company. Promoted by Abram Sheppard and John Duncan, both large landowners, this act proposed to clear the creek and to improve navigation for vessels involved in trade. These improvements utilized a system of dams or locks as far as was practical to render the creek navigable. Under the supervision of the commissioners, (James T. Belknap,
James Sheppard, John Duncan, and Abram Sheppard), the act further stated, “That after the said corporate body shall have rendered said creek navigable from a place near its mouth, commonly called the town of Manhattan, up said creek to any point fifteen miles above where the tide ebbs and flows, the said corporate body shall have the right to charge and collect tolls on all vessels, steamboats, rafts and freight passing up or down said creek” (Gammel 1898: 835-838).

Improved conditions on Caney Creek would benefit several wealthy plantation owners and farmers. Plantation owners like John Duncan, who constructed the first steam sugar mill in 1842, needed these improvements to facilitate transport of his sugar and molasses to Matagorda. Further, the construction of his own steamboat to transport his produce to market in Matagorda increased his need for navigable water (Curlee, 1922: 179). Just prior to 1850, Abram Sheppard prepared to dig a canal across the isthmus as a means of more effectively transporting his crops of cotton, sugar, and molasses to Matagorda. He offered John McDonald four hundred head of cattle to dig the canal. McDonald accepted the proposition and made a channel one mile long connecting “Old Caney” with the head of Matagorda Bay (Matagorda News [MN], October 18, 1912). This canal was the first and most effective improvement that was made to Caney Creek during the development of Texas.

As a result of the richness of the lands, the coastal region produced from two to four thousand pounds of seed cotton and from one to two hogsheads of sugar an acre (Curlee, 1922: 150). Because of the production coming out of Caney Creek, the Texas Congress, on Feb. 9, 1850, passed an act “declaring Caney Creek, a public highway, and
provided for the removal of the obstructions therein (Gammel, Vol. II, 1898: 321-322)."
The act stated that the creek highway started at its mouth and continued to the sugar
houses of C. and T. B. Powers in Sugar Valley (Figure 14). Plantation workers were
stipulated to take care of Caney Creek, removing all obstruction and facilitate steam
navigation. It stated, however, that Abram Sheppard's canal should not be bothered
(Gammel 1898:II 321-322.)

Before the war, Palacios Point had few houses and served mainly as a loading
point, where extensive wharving and warehouse facilities provided connections for the
transportation of cargoes and goods to other ports of call. Caney Creek, navigable
during the golden era of cotton and sugarcane production, was one of the main means of
getting merchandise to Matagorda, Indianola or Palacios Point (Stieghorst, 1965; 9). All
along the creek plantation owners set up prosperous farms because of the rich soil.
Robert H. Williams' plantation was one of the first to have a cotton gin in the new
Republic. Sugarland, in east-central Matagorda County, was the center of sugarcane
production before 1860 (Parker, 1986: 109). Sargent, named after John T. Sargent, was
another plantation founded along Caney Creek, and was once a hub for cotton, sugarcane
and cattle activity beginning in the 1870s.

Up to the Civil War, the planters on the creek and the cattle ranchers of the
prairies built their homes in the town of Matagorda. Matagorda exhibited health and
style not excelled by any part of the new frontier (Matagorda County Tribune [MCT],
May 21, 1913). This creek and the surrounding area comprised an agricultural, social,
and cultural landscape that exemplified the good life in mid-nineteenth-century Texas. It
was an immensely important geographical region to the State's Confederate-era economy. Wealthy farmers settled in populated portions of the county to become cotton and sugar planters on the rich lands of the Colorado River or Caney Creek (Cordova, 1858: 21).

In the year 1853, 39,686 bales of cotton were grown in the state of Texas. A large percentage of that number was grown in or around Matagorda County. The number of bales gradually increased and by 1859, Texas was producing 46,413 bales a year (Texas Almanac, 1867: 196). Abigail Curlee, in her assessment of Texas agriculture and slave plantations, reported the 1850s as a period of unprecedented agricultural expansion in Texas. Between 1850 and 1860 the number of slaves, most in the cotton and sugar belt, more than tripled from 48,287 to 158,595. As Curlee states, the slaves worked less, made more cotton, and saved more cotton than in any other cotton region. The fiber of the cotton was superior, that on the Gulf coast approaching the Sea Island variety in length and fineness.

Furthermore, sugar cane matured sweeter and several feet higher than in Louisiana; its grain was finer and clear; and it ratoonned longer (Curlee, 1922: 24, 148-149).

After the Civil War, cotton production never regained its agricultural preeminence in this region, and sugarcane supplanted cotton as the most important product. The sugar industry began in 1838 and 1839, when a few planters, with great success, cultivated cane with a view of making sugar. By the fall of 1841, practically all the planters had some land devoted to cane production (Colorado Gazette [CG], Nov. 6,
1841). Abram Sheppard, E. Rugeley, and James B. Hawkins were among the largest cane growers in the county, all with plantations along Caney Creek. Sugar from Caney Creek was thought equal to any made in the West Indies. By 1852, planters were shipping their sugar directly to merchants in various areas instead of larger ports. (Colorado Gazette [CG], June 28, 1852). This provided the planters more profits than if they had to use an agent. Up to the Civil War, a dozen or more planters within twenty miles of Matagorda, manufactured sugar and molasses. The industry in Matagorda County was greatly stimulated in 1852, when J.B. Hawkins, at his Hawkinsville plantation on Caney Creek, built one of the largest sugar mills in Texas (Figure 15).

Figure 15. Illustration of Hawkins' Sugar Mill in 1852. (Courtesy of Matagorda County Historical Commission)
Matagorda and Caney Creek during the Civil War

As the Civil War approached, sugar, cotton and corn production increased. At the beginning of the war, Caney Creek, Matagorda County, and the adjacent coastal areas were at their apex of agricultural production. This system maintained plantations, well-developed transportation systems, and trading markets. Matagorda provided a safe port and a commercial and transportation center for the produce of the Colorado and Caney areas. As the producers, ports, and towns flourished, Texas prospered, a fact that worked to its advantage until 1861. For the next five years, however, that productivity fueled conflict and determined military strategy in what Major General Nathaniel Banks was to call the “most populous and productive part of the State (Banks, 1865: 5-21).”

During the Civil War, the creek’s importance became acute for agricultural production. The United States realized the importance of river transportation and the role Caney Creek played in supplying the southern cause in Texas. The Union Army led an assault on Texas to cut Confederate agricultural production. Historians, however, have identified Caney Creek as the point at which the capture of the Texas Coast was halted (Forister and Horton, 1975:1-5). The protection provided to Caney Creek by the Confederate Army for the plantations upstream kept the region secure and productive (Figure 16). The Confederacy constructed several fortifications at the mouth of Caney Creek (Figure 17). Their objective was to protect the Matagorda peninsula and the bay from the Union Army (WOR Series 1. Vol. 34:849-850). If these shipping centers were taken, much of the supplies necessary to the Southern Army, would be lost. These forts
Figure 16. Fortifications at the mouth of Caney Creek with shoreline changes. (Courtesy of Prewitt and Associates, Inc.)

also provided protection for blockade runners working out of Matagorda Bay and Caney Creek (Guthrie, 1988: 136). The Union naval blockade limited the availability of southern resources, in turn increasing the demand for production. Limited resources brought the prices for sugarcane and cotton to an all-time high. Plantations along Caney Creek profited from this demand. Hawkinsville experienced its peak of success during the Civil War, when J. B. Hawkins made a fortune selling sugar and molasses to the Confederacy, large planters, and small merchants (Guthrie, 1988: 136). On Nov. 20,
1863, Hawkins sold to a Captain Townsend twenty-five barrels of molasses for $2,500 and two hogsheads of sugar for $2,440. On Feb. 15, 1864, a Mr. E. Belden paid Hawkins $17,300 for 10 hogsheads of sugar and four barrels of molasses (Frank Lewis
1996, pers. comm.). The need to retain the valuable resources produced in Matagorda placed significant importance of keeping the area in the hands of the Confederacy.

The port of Matagorda began declining as her sister city, Indianola, gained in importance after the Civil War. Indianola was located closer to Pass Cavallo and, more importantly, had deeper water (Figure 18). In time, Matagorda faced insurmountable problems, and the small seaport never developed into a major shipping center. With shallow water and the ever-silting channels of Dog Island; Civil War in the midst of an economic upswing, and ravaging hurricanes in 1854, 1875 and 1886, this city never fully developed. Matagorda's "golden era" was at an end.

Figure 18. Map showing location of Indianola.
After the war, Hawkins, John Duncan and George Sargent, and others retained their extensive plantations despite the loss of slave labor. Labor-intensive agriculture immediately suffered after the Civil War, but in the early 1870's was again producing a high yield. Plantation owners like Hawkins began using convict labor, instead of slaves, reviving the industry along the creek and in Matagorda (Parker, 1986: 70).
CANEY CREEK STEAMBOAT WRECK

Designated archaeological site 41MG32, the 19th century side-wheel steamer lies in 12 - 15 feet of water in Caney Creek, a few miles southeast of Bay City, Texas. Loss of historical data throughout the late 19th century, has hampered attempts to identify this ship. The hull's preserved length is 128 feet (42.27m) with a preserved beam of 24 feet (7.93m). The overall breadth of the main deck was approximately 38 feet (12.55m) at the paddle-wheels (Figure 19). The steamboat lies approximately parallel to the channel, with its bow pointing upstream in a northerly direction and lists 13° to port. This

Or, arithmetically:

Overall width of wreck: 38'
Minus width of sidewheels (5' x 2) < 10'
Minus width of guards, camrod gear, etc < 4'
Estimated beam of wreck: 24'

Figure 19. Reconstruction of beam of ship. (Drawing by Andrew Hall)
contradicts the report of Wayne Boggs. He reported the ship ran across the creek east to west (Figure 3). Although the vessel’s bow is well preserved, the port quarter is all that remains of the original stern. The starboard quarter and rudder assembly have completely broken away. No superstructure exists, but the hull, preserved under several feet of sediment, still remains. At this time, no excavation has been attempted, limiting available information pertaining to the ship’s construction.

Environmental conditions surrounding the wreck exacerbated the difficulty of archaeological investigations. Erosion due to farming has filled Caney Creek with silt and debris (Weddle, 1974:5). Silt, suspended in the water column, turned the once clear waters dark brown. Visibility therefore averages less than a few inches making measuring and drawing difficult. Since 1993, over 60 divers, including many professionally trained archaeologists, have volunteered over 2,500 hours toward this project. Twelve field sessions, utilizing divers from the SUAS and the THC, have defined the steamer’s boilers, steam engines, pitmans, paddle-wheels and accessible hull remains (Figure 20). Due to the vessel’s burial, only partial information about the ship’s wooden hull was obtained. A lack of funding precluded a full-scale excavation, therefore, non-excavating and non-collecting strategies were implemented during these surveys. Primarily, data was collected using a baseline and trilateration. A wooden bulkhead on the creek’s east side provided a solid foundation for the baseline (Figure 20, 21). This baseline oriented the remains and established a stable position to survey the wreck. Using trilateration, divers recorded the steamer’s machinery and several specific features of the hull located above the mudline. Later, a SOKKIA SET 5E Total Data
Station (TDS) verified measurements from previous sessions in addition to adding several points of new information. Using the TDS, a diver held a prism pole directly over a point being recorded. The TDS records data 3-dimensionally by determining distances by the time it takes an infrared beam to travel to the prism and return. The information is collected in a hand-held computer (SDR33) connected to the TDS and all angles are calculated. From this raw data, X, Y and Z coordinates are obtained and transferred to a CAD program. The data collected produces a site plan in relatively short time giving better results than the original trilateration strategy. Combined results of the TDS and trilateration provided an accurate in situ site plan of the wreck showing associated features (Figure 21).
Figure 21. Reconstructed site plan.

Due to the lack of visibility, a 500 kHz Side-Scan Sonar, a Simrad Sector Scanning Sonar and an 806 Proton Magnetometer were used to assist in the interpretation of this site. The proton magnetometer helped delineate the wreck’s boundaries by determining where iron material was concentrated. The shipwreck produced a strong dipole. The maximum field reading was 50750 gammas with the minimum at 47960 gammas. The normal reading averaged 48980, rating the anomaly at +1770/-1020 gammas or 2790 gammas from peak to peak (Figure 22).

The side-scan sonar displayed a ghost-like image of the pitmans, steam engines and boilers (Figure 23, 24). These images were the first real representations of the ship seen by archaeologists. This information was extremely important to divers as the images answered questions pertaining to the arrangement of the machinery.
Figure 22. Magnetic anomaly produced by the Caney Creek wreck.

Figure 23. Side-scan sonar image of the Caney Creek wreck.
The sector scanning sonar helped clarify the documentation process. The sensor was placed on a tripod and positioned in 3 different locations to obtain different views of the wreck. Sound waves were emitted from the sensor underwater and the topside console recorded the intensity of the echoes as they bounced off the objects scanned (Figures 25, 26). Using surface-to-diver communication, the sonar facilitated the transfer of information between divers and the topside crew. Divers immediately relayed information about the ship's arrangement and if necessary, could be guided to other parts of the wreck without having to surface.
Figure 25. Sector-scanning image of the wrecked steamboat.

Figure 26. Close-up of steamboat wreck.
COMPARISONS

Due to the lack of available archaeological documentation, the specifics of hull construction for the Caney Creek vessel must come from other sources. Louis Hunter’s *Steamboats on the Western Rivers* (1949), provides a great deal of insight into the construction features of steamboats operating on inland rivers during the 19th century. Historical and archaeological comparisons of 2 contemporary western-built vessels, *Yellow Stone* and *Black Cloud*, will provide essential construction information and assist in the overall interpretation of the Caney Creek wreck. As both the *Yellow Stone* and *Black Cloud* worked the rivers of Texas during the 19th century, their similarities and differences to the Caney Creek wreck will help develop our understanding of the methods employed for its construction.

**Hull Features**

The Caney Creek’s exposed hull remains reveal a lightly constructed, shallow-draft vessel, typical of western river steamboat construction. As western river steamboats were considered a short term investment, substandard hull construction and second-rate materials were commonly used. Indeed, due to a high accident rate, vessels rarely lasted more than a few years (Hunter, 1949:63). As George Fitch, one of the founding fathers of steamboating stated, “Western steamboats are built of wood, tin, shingles, canvas and twine, and look like a bride of Babylon. If a steamboat should go
to sea, the ocean would take one playful slap at it, and people would be picking up kindling on the beach for the next eleven years” (Way 1933:26).

As the desire for steamboats to maintain regular schedules increased and the need for speed grew, ships were built lighter and lighter. Hunter, in his calculations, indicates this trend as early as 1831. A typical steamboat of that time 135 feet long with a 24-foot beam and a 3.5 foot depth of hold needed a series of fore-and-aft bulkheads and cross bulkheads built of 1 ¼ inch pine over 3 ½ inch-square ash stanchions. Three and a half inch square floor timbers, 2 ½ by 4 ⅛ inch crossbeams, 2 inch oak bottom planks and 1 ¼ inch pine deck planks were also used for constructing the hull (Hunter, 1949:80).

The Yellow Stone, constructed in 1830 in St. Louis, Missouri, was originally built for trade on the upper Missouri. In 1836, this ship, along with 47 volunteers, came to the Brazos River and assisted Texas during the war for independence against the Mexican Army (Jackson 1985:121) (Figure 27). The construction features of the Yellow Stone were given in a contract between the American Fur Company and William Crane, the shipbuilder, providing the vessel’s scantlings and a valuable source of comparative data. The ship was 120 feet long on deck from the aft side of her stern post to the ending of her wales forward, with a 20 foot beam and a 6 foot depth of hold. The floor timbers were, from the stern forward as far as the shipwright thought necessary, 4 inches sided and 7 inches moulded and doubled, spaced 12 inches apart. From that place forward, individual frames were used which were 6 inches sided. The futtocks and top timbers were 5 inches sided and were 5 inches square at the head. The single frames were spaced 17 inches from center to center and extended forward to within 50 feet of the
IN PURSUANCE of an Act of the Congress of the United States of America, entitled "An Act concerning the registering and recording of Ships or Vessels," which act was approved on the 2d day of December, 1885, the undersigned, being one of the Judges of the United States District Court of the State of Louisiana, do hereby certify that the ship or vessel described in the accompanying certificate is a vessel owned and in the United States of America.

Given under my hand and seal this 2nd day of December, 1885.

[Signature]

Speaker of the House of Representatives

IN PURSUANCE of an Act of the Congress of the United States of America, entitled "An Act concerning the registering and recording of Ships or Vessels," which act was approved on the 2d day of December, 1885, the undersigned, being one of the Judges of the United States District Court of the State of Louisiana, do hereby certify that the ship or vessel described in the accompanying certificate is a vessel owned and in the United States of America.

Given under my hand and seal this 2nd day of December, 1885.

[Signature]

Speaker of the House of Representatives

Figure 27. A certificate of 1835 that authorized the Yellow Stone to trade in the foreign waters of Texas. (Courtesy of the National Archives)
bow, where the double floors began again. Futtocks here were 4 inches sided and the
top timbers were 5 inches square. The frames continue 17 inches apart to within 30 feet
of the bow where the space gradually lessened to 2 inches 15 feet from the bow (Jackson
1985:160-161).

Additionally, the Yellow Stone had crossbeams consisting of 5 inch sided and 6
inch moulded timbers, spaced 30 inches from center to center. The contract specified
larger timbers incorporated under the heavier pieces of equipment, such as the boilers
and engines (Jackson 1985:161). The main deck and guards had pine planks, 2 inches
thick and 6 inches wide while the hull planks were 3 inches thick and up to 8 inches
wide. The hull planks thinned as they continued up to the wale, eventually becoming
only 2 inches thick. The guard, starting in the bow, swept aft around the paddle wheels
and came in within 3 feet abaft the wheels and made a round stern over the transom.

The Yellow Stone is indicative of the early construction trend that stressed heavy
construction techniques over draft and speed. This ship was hand crafted, making sure
all components were precisely constructed. Hull planks were thicker, as was necessary,
on the bottom and along the bilge area, then thinned coming up the sides. Crossbeams
were strong and reinforced as necessary. Incorporating thicker hull planks and larger
timbers soon changed as the need for lighter hulls became prominent. Later in the
steamboat era, when it became apparent that lighter wood meant shallower draft, and
when statistics began to show that the average river steamboat was not worth the cost of
fine workmanship, contracts were drawn with less attention to detail.
The *Black Cloud*, which was investigated in 1980 by students from the Nautical Archaeology Program at Texas A & M University, illustrates construction techniques used later in western steamboat design. This vessel, built in Orange, Texas in 1864, was used to transport cotton and other goods to Galveston (Figure 28). Originally, this ship was 111 feet long with a 163.49 ton capacity. In 1866, she was altered with a reported length of 129 feet, 33 foot beam and a 4 foot draft, giving her a carrying capacity of 223.82 tons (Adams 1980:1). The framing pattern recorded on this vessel consisted of "compound single futtocks," 6 inches sided and 8 inches moulded, in the

*Figure 28. Model of the steamboat Black Cloud. (Courtesy of the Museum of the Gulf Coast, Port Arthur Texas)*
stern, half frames just forward of the compound frames and double futtock frames near midships, 6.5 inches sided and 8 inches molded (Adams 1980: 11) (Figure 29).

Cross supports were two, 3 inch sided and 8 inch moulded timbers nailed together. These beams were spaced 19 inches apart. There were also three composite beams of three cross timbers rather than the usual two in the forward section of the hull (Adams 1980:6). Brick remains, some charred, were located on deck plank above these timbers. Presumably the boilers and ash pan would have been located over the bricks and composite beams. These beams helped carry the added weight of the heavy
machinery. Hull planks were 8 inches wide and only 2 inches thick, thinner than the hull planks of the *Yellow Stone*. The keelson, a long 8 inch by 8 inch timber was bolted to the tops of the frames. Two mortises were cut into the top of the keelson. It was theorized they probably served as inserts for deck stanchions (Adams 1980:9). On the starboard side of the stern section surveyed, 2 stringers running edge to edge along deck level were located. Along with serving as longitudinal support, these timbers might also serve as supports for the deck.

Several of the *Black Cloud*'s dimensions can be compared to the Caney Creek wreck. Frame ends on the Caney Creek ship, exposed above the mudline, measured 3 inches sided and 5 inches moulded. These frames were located in the bow at the starboard wale. As compared to the *Yellow Stone*, the top timbers are only minimally smaller and lighter. Although only 7 frames were examined, the Caney Creek vessel has no indication of double or half-frames.

Hull scantlings on western river steamboats were reduced to limit weight and reduce draft. A steamboat's upper works were minimally built, barely withstanding their own weight. Earlier, ships like the *Yellow Stone* used double framing to provide a more stable hull. Later, as the need for wider decks and taller superstructures grew, framing was reduced to diminish weight. Supporting this trend, the deck beams on the Caney Creek wreck were smaller than those recorded on the *Yellow Stone* or *Black Cloud*. Two exposed beams in the stern on the port side, near a small hatch, measured 2 inches sided and 4 inches moulded and were spaced 17 inches apart. These frames are substantially
smaller than hatch frames recorded on the *Yellow Stone* which were 4 inches sided by 6 inches moulded (Jackson 1985:161).

Hull construction needed to be functional as well as stable. Hull planking from all three ships differ only slightly, with the differences due to the trend of lightening hulls. Deck planks on the Caney Creek wreck are 1 inch thick and 6 inches wide; and hull planks, above the mudline, are 2 inches thick and 12 inches wide. Hull planks were fastened to the frames by square nails. Hunter states one popular construction technique utilized in lightening hulls called for reducing hull plank thickness. Hunter calculated that hull planks should be 2 inches thick and deck planks 1 1/4 inches thick (Hunter 1949:80). The differences in thickness can again be related to the trend in lightening up the weight of a ship's hull. *Black Cloud* and the Caney Creek vessel's hull planks were 2 inches thick, while the *Yellow Stone's* planks were 3 inches.

Wayne Boggs, from the Texas Antiquities Committee, took several wood samples from the Caney Creek wreck in 1980. These samples were analyzed by Douglas Kirk of Radian Corporations. The samples were identified as live oak and pine (Boggs, 1980:1). The wood selection indicates the vessel has southern origins as live oak was not popular in northern built vessels because of the expense in transporting the needed material. Typical wood species used on many southern-built western steamboats included white oak for planking and framework, and pine, poplar and cedar for the remaining construction features (Bates, 1866:474-475). Again, these wood types are much lighter than many of the hardwoods used on earlier steamboats.
The Caney Creek vessel's stem consists of a round post 7 inches in diameter which rises 10 inches out of the mud. Both the starboard and port wales continue up to the stem where it is rabbeted to receive them. Two feet, 10 inches abaft the stem is a vertical timber identified as a jackstaff or sampson post. This 6 inch square timber has only a few inches of its original length preserved. The jackstaff provided the pilot with a sight to aid when landing in tight wharves or at plantations (Hunter, 1949: 70). Located just port and slightly behind the jackstaff are two additional square timbers. These 4 inches square timbers sit 7 inches apart. The starboard-most timber has a preserved height of 13 inches while the port timber is preserved 18 inches. These timbers are most likely part of a mooring bitt or possibly a towing bitt, similar to one found in the stern.

Little of the stern survives, other than a 10 foot section of the port quarter which retains its original toerail. The toerail is bolted to the outside edge of the main deck with a chock hewn out of its top face. A wooden bitt located in the stern is constructed of two 18 inch high posts connected by a 12 inch long, 2 by 4 inch wooden strut (Figure 30). Flat metal guards (bands) secure the tops of the posts, and are fastened to the post by 3 nails on each side, giving added strength to the timber and to protect the wood from splitting. This could be the remains of the sheet metal cap normally fastened to the tops of bitts. This feature would have been used to belay mooring and possibly for towing, however its size tends not to support the idea of towing. Another item located in the stern is a roller chock found lying in the mud aft of the broken stern remains (Figure 31). This chock, originally fastened to the outside coaming through the guard, was employed for working with the ship's lines. Two 1-inch iron rods spaced 12 inches
Figure 30. Isometric view of aft face of wooden bitt found in the stern on the Caney Creek shipwreck. (Not to Scale)

Figure 31. Roller chock found in the stern of the Caney Creek shipwreck. (Not to Scale)
apart pass through iron guides or sheaves. This feature would help keep the ship’s lines in place.

The steamboat’s guards were extensions of the main deck, extending beyond the sides of the hull and were adopted to protect the projecting paddle-wheels and provide support to the outer ends of the paddle-wheel shafts. Later, boiler deck planking continued to the guard’s edge, and when heavily loaded, were mistaken for the line of the hull (Hunter 1949:91).

Guards on the Caney Creek vessel extended the main deck 7 feet beyond each side of the hull. This increased the width by 14 feet giving the main deck a width of 38 feet (Figure 15). The addition of guards commonly allowed deck width to exceed hull width by 50 to 75 percent (Hunter, 1949:93). Indeed, the main deck of the Caney Creek steamboat is 63 percent wider than its hull. Increased deck space provided additional room for freight and fuel, and served as passageways between the vessel’s forward and aft sections. However, guards tended to force the vessel to list to one side or the other, caused by the boat’s narrow hull. The hull’s full sections and flat floors did provide substantial stability, but the position and weight of cargo combined with the heavy overhanging guards caused the ship to list. Cargo was often organized to counter this list, rebalancing the vessel and allowing it to become stable.

Typically, the western river steamboat hull was minimized, while adding several tiers of superstructure. The towering superstructure usually extended out, over the edge, placing a large amount of weight at the bow and stern. Sagging or hogging, therefore, was a frequent and constant problem. Because of the vessel’s length to depth-of-hold
ratio, the ship’s heavy machinery and superstructure needed additional support and longitudinal strength to prevent sagging. Strong, but lightly built fore-and-aft bulkheads were installed to minimize this problem. As Hunter noted, “a vessel 135 feet long with a 24 feet beam...called for a series of fore-and-aft bulkheads built of 1 ¼ inch pine” (Hunter 1949:80) These bulkheads ran the entire length of the vessel providing much needed strength and stiffness.

Hog chains were another method employed to counteract the problem of hogging. Hog chains were iron rods or cable ranging from 1 to 2-½ inches in diameter, secured to hull timbers at the vessel’s bow and stern. These cables ran the entire length of the ship, carried over a series of struts and braces rising from the ship’s keels and bulkheads. In conjunction with the bulkheads, the hogging chains provided necessary support for the ends of the ship. Turnbuckles (Figure 32) secured the hogging chains to iron straps located along the hull. Additionally, sidewheel steamers sagged laterally. Knuckle chains were used to pick up the sides of the boat while pressing down on the bulkheads or keels. These cross-chains helped to carry the weight of the wide guards, requiring several sets to hold up the ship’s sides.

It is probable that the Caney Creek ship utilized bulkheads, but without excavation it is impossible to determine their construction. Evidence of a hog chain system does exist along the starboard side, where the hog chain remains are still attached to a turnbuckle. The extant one inch in diameter cable and turnbuckle would have supported the after side of the wheelhouse or the protective casing surrounding the paddle-wheels. This chain is strapped to the outer guard timber and crossbeams. Most
western river steamboats, like the Caney Creek wreck, placed their paddlewheels slightly aft of midships, and positioned boilers 1/3 the distance between the bow and midships.

![Figure 32. Illustration of a turnbuckle similar to those on the Caney Creek wreck. (Courtesy of the US Army Corps of Engineers.)](image)

(Hunter, 1949:95). This placement concentrated the weight midships, adding stability and counteracting the upward thrust associated with hogging.
Engines, Boilers and Machinery

A contract between the American Fur Company and Beatty Curry & Co. of Kentucky, provides construction details of the *Yellow Stone*’s high pressure engine. High-pressure engines, rather than low pressure engines, typical of eastern-built steamboats, dominated western commerce for a full generation and permeated western rivers for nearly a century. High pressure engines were typically placed at either side of the hull, forward of the paddle-wheels, although the contract for the *Yellow Stone* specified only 1 high pressure engine. Steam was produced in the boilers and transferred through the steam lines into the engine’s cylinder (Figure 33). Four boilers 16 feet long, 36 inches in diameter and made of ¼ inch cast iron were placed side by side on the forward part of the main deck. Iron flues, running through the tanks, carried hot gases that heated the water to create steam. The steam engine’s cylinder was 20 ¼ inches in diameter with a 5 foot stroke. This cylinder had a simple poppet valve design with one inlet and one exhaust valve at each end (Jackson 1985:165). Steam from the boilers pushed the cylinder, which transmitted power to the pitman. The pitman, in turn, was connected to two flywheels, one on each side. These flywheels served to even out the motion of the engine, keeping the application of power to the paddle-wheels smooth. The piston in the cylinder was forced back as the steam expanded. This motion pushed the drive shaft aft, and as it was connected to the pitman, the pitman was also moved aft. This assemblage turned the drive shaft’s linear motion into circular motion, which rotated the paddle-wheels, converting steam from the boilers into mechanical power. The rotary motion of
Figure 33. Plan view of the machinery of the Yellow Stone. (After Sawyer 1978:73)

to a paddle-wheel. Two engines instead of one gave a vessel the ability to stop one of the paddle-wheels, if necessary. Two engines also allowed the wheels to run in opposite directions, increasing the turning power and maneuverability. The disadvantage to using
two engines is that both engines have to be matched carefully in power and rpm to keep
the boat moving in a straight line. Utilizing two engines became standard on side-wheel
steamboats by the mid-1800s (Hunter 1949:142-146). Adding a second engine could not
only increase the boat's power, but it eliminated the uneven flow of power single-engine
boats experienced with the momentary cessation of the engine's motion at the end of
each stroke (Hunter 1949:145). The flywheel was employed to alleviate this problem by
carrying the paddle-wheel through its rotation with its weight. Also, these ships needed
to run a line of shafting all the way across the deck between the paddle-wheels,
interfering with free passage fore and aft along the main deck. The most serious
problem single-engine boats experienced was the difficulty of handling when both
paddle wheels were driven by the same engine.

On the Caney Creek wreck, the more exposed starboard engine was recorded
more thoroughly than the port engine, therefore, any construction information, not
obtainable on the port engine, was extrapolated from the starboard engine. The
starboard steam engine cylinder is 36 inches in diameter and 5.00 feet in length (Figure
34). The valve assembly was double acting, therefore the steam first came in the
forward end, pushing the piston aft, then steam came in the aft end, pushing the piston
forward. A steam intake and exhaust valve were located at each end of the cylinder to
control the amount of steam coming in the cylinder. This assembly utilized an eccentric
on the paddle-wheel shaft to operate the valve lever, through lifters or followers. The
valves had a double poppet design which forced steam down on a top disc and up on a
bottom disc. The two forces canceled each other, eliminating most of the pressure,
Figure 34. Drawing of the engine recorded on the Caney Creek shipwreck.

making the double poppet design much easier to work than the single variety (Figure 35)

Figure 35. A single poppet valve and a double poppet valve. (After Sawyer 1978:78)
Sawyer, 1978: 78). To save steam, the steam valves were closed before the end of the stroke. From the point of "cutoff" to the end of the stroke, the expanding steam in the cylinder pushed the piston. A "scape" pipe released pressure to allow spent steam, after pushing the piston, to escape the cylinder. Steam, forced up through the "scape" pipe by the piston on its return stroke, gave off a certain rhythmic huffing and puffing sound, similar to a steam locomotive.

The port cylinder, found charred, had a hole in its outer shell. This rupture could have been caused by an explosion due to excess pressure within the cylinder, a common problem on western river steamboats (Hunter 1949:132). Concretions obscure the cylinder's features, but similarities between starboard and port engines are to be expected. Both pistons were in the forward position, indicating that both paddlewheels were on their down stroke and because the hooks for the engine controls were still engaged, it appears the engines were still operating when the ship sank.

The steam lines between the boilers and engines are preserved for only a few inches on either side. The piston rod's after end was fashioned to receive the pitman.

Figure 36. Crosshead on the Caney Creek wreck. (Not to Scale)
This joint was called a crosshead (Figure 36).

The Caney Creek steam engines were placed at the sides of the main deck, each forward of its respective paddle-wheel, pitman and crank. This arrangement opened deck space between the paddle-wheels, unlike the arrangement described on the Yellow Stone. The flywheels were completely removed, lightening the ship’s weight and freeing up space for passage ways or cargo. The pitmans were connected to cranks which took the place of the flywheels. These cranks took the reciprocating motion from the pitmans and converted it to rotary motion, to turn the paddle-wheels.

The paddle-wheel hubs or “flanges” carried the wheel’s spokes (Figure 37). The Caney Creek ship’s hub had twelve pockets, one for each arm mounted on the flange. The arms were hewn to fit exactly in the pockets. Once wet, these wooden arms swelled for a tighter fit (Bates, 1968:93). Each arm was bolted to the flange with two bolts, and the buckets were bolted to the arms with stirrup bolts through wooden battens. The arms were braced just outside the flange with triangular blocks of wood known as “cocked hats”. Although square wooden blocks, further out on the arms, gave additional stability, the principal wheel bracing came from two wrought iron circles just inside the bucket planks. The arms were tightened by driving wood keys (blunt wedges) between the arms and the circles. Cocked hats, blocking, and keys were lightly nailed, making them easier to pull when repairs were needed (Bates, 1968:94). Although none of these traits were identified on the Caney Creek shipwreck, it is likely these features were employed. A few spokes and buckets were found, but no reinforcing band or wooden wedges remain.
The diameter of the paddle-wheels on the Caney Creek vessel was 12 feet.

Although the protective chasing or wheelhouse around the paddle-wheels has been destroyed, 4 2 x 4 x 3 ½ inch mortises were found cut into the top face of the 12 inch outer guard timber. These notches were on both the forward and aft side of the starboard paddle-wheel flange. These mortises would have allowed tenon planks to form the outer wall of the wheelhouse.
The wooden pitmans had iron strapping on the top and bottom to give added strength and absorb tensile loads. Although the iron has completely eroded away, the remains of 12 bolts that held the straps in place are still present. The 15 foot pitman with its strapping transferred the force from the piston to the crank. The wood absorbed some of the shock due to frequent stoppage or upon hitting an obstruction, and the iron strapping eliminate the tension put upon the large wooden timber (Hunter 1949:113).

Outboard of the pitmans are 2 iron rods, the full stroke cam rod and cutoff cam rod. Western river steamboats, at times, needed all the power that the engine could deliver, as well as enough power to propel the ship. These two cams, mounted on the paddle-wheel shafts, actuated the valves through long rods running parallel to the pitmans (Figure 38). The full stroke cam was employed when the steamboat was

![Diagram](image)

**Figure 38. Full-stroke and cutoff cam. (after Sawyer 1978:78)**
getting under way, backing, or whenever maximum power was demanded. The cutoff cam was used under ordinary conditions, when the most economical application of steam was desired. The cutoff cam rod closed off the flow of steam at half-stroke, allowing the natural elasticity of the steam to complete the stroke and thus save energy (Jackson, 1985:166). This was similarly noted on the construction document for the Yellow Stone.

The paddle-wheels were placed on each side of the hull, providing a stable foundation, and supplying necessary weight to reduce buoyancy and hull stresses (Hunter, 1949:171). Each paddle-wheel shaft was supported by two pillow blocks (Figure 39). The pillow blocks were mounted on a cast iron plate which was fastened to

![Figure 39. Pillow block assembly for the Caney Creek wreck.](image)

the cylinder timbers on the inside of the steamer and the guard timbers on the outside. The entire assembly was through-bolted to the cylinder timber or guard timber. A large
wooden block 50 inches in length, 18 inches wide and 6 inches thick supported the pillow blocks above the guard timber or cylinder timber. These blocks were held above the timbers by two posts 5 x 6 inches and held 1 foot off the guard timbers.

Figure 40. Isometric view of the workings of a side-wheel steamboat (after Sawyer 1978:78).

Steam needed to operate the paddle-wheels came from the ship’s two boilers. Each boiler consisted of nine shaped wrought-iron segments of ¼ inch plate, riveted together (Figure 41). The boilers were found just to port of the vessel’s centerline, side by side across the forward part of the main deck. Originally these boilers would have been on the centerline to preventing listing, but over time these have shifted as the hull settled on the creek bottom. The boilers ran longitudinally and served to balance the weight of engines and paddle-wheels which were positioned aft. A steam drum ran across the top of both boilers conveying steam out of the boilers into the steam lines.
Figure 41. Boilers on the Caney Creek wreck

which carried the steam to the engines. The steam drum also kept the pressure in both boilers constant. The boilers were also connected to another drum underneath. This "mud" drum permitted the free flow of water from one boiler to the other keeping the water levels constant, and provided a place for the silt and sand to settle out of the water. Because this boat would draw its boiler water directly from Caney Creek or Matagorda Bay, and because of the high amount of silt and debris in the water column, this drum would have been very important.

The port boiler was found with a hole on the upper face where an iron plate for the safety valve assembly was located. This same assembly was recorded on the starboard boiler. Probably, the safety valve assembly collapsed after the sinking of the
vessel. Everett Cordray, Jr., Chair of the Matagorda County Historical Commission, reported that a group of divers made several dives on the steamboat in the late 1980s. Purportedly, these divers removed a cover plate from one of the boilers. It was reported the plate was inscribed with the words "Glasgow Scotland" on its surface. This plate, if indeed it did exist, may refer to the boiler's place of manufacture. Mr. William Smith of Bay City, Texas, reported that his great grand father came from Scotland to Texas in the 1830s. In Scotland, Mr. Smith's ancestor was known to have built steamboats. It could be concluded that this ship did in fact use Scottish machinery, but to date no one has verified this claim.

Each boiler is 16 feet long with a 36 inch diameter. Two holes found at the forward end of both boilers, 12 inches in diameter, are the flues. They ran the full length of the boilers; hot gases from the firebox ran aft under the boilers and then back forward through these flues and thence up the chimneys. Supports for the boilers have been located, but no measurements or drawings have been made at present. No fire brick, ash pan or firebox has been located. Nothing remains of the chimneys or smoke stacks. These missing stacks are presumed to have washed down the creek, or because they were very lightweight metal, they may have simply rusted away. According to Hunter, by the 1850s, these stacks might have been approximately 75-85 feet high above the water (Hunter 1949:160). This increase in height, from early on in steamboat development was to create a natural draft for the furnace to create more steam.

A 3 foot diameter fly-wheel was found aft of the boilers and may be part of a regulator valve, or governor, for the assembly. It might also be part of the auxiliary or
“doctor engine” or “donkey engine.” The doctor engine helped pump water into the boilers when they were running low and helped pump bilge water out of the hull. On earlier steamboats like the *Yellow Stone*, the pump was activated by the rotation of the paddle-wheels. Because it was necessary to stop the paddle-wheels at landings, this pump could not operate. It became necessary to disconnect the paddle-wheels and run the engine rapidly until the boilers were properly filled. This type of pump was known as a feed water pump. A small auxiliary engine was employed to operate the supply pump independently of the main engine. This engine was coming into general use by the 1850s (Hunter 1949:162).

Because no machinery was identified on the *Black Cloud*, no comparisons can be made. It seems probable that the machinery on the *Black Cloud* would have been similarly designed as that found on the Caney Creek steamboat, a ship with two engines operating two paddle-wheels. This seems to be the typical design during the 1850s or later. With this type of construction, these ships would have been ideal for the rivers in Texas.
POSSIBLE SOLUTIONS

The first historical document that mentions the Caney Creek wreck is a US Army Corps of Engineer's report dated September 13, 1917, stating that the wreck must be cleared so navigation can continue on the creek (H.doc, 1042: 65-2 7349). This shipwreck completely blocks the creek for navigation, except by small vessels. With this brief mention, archaeologist and historians began a search of local accounts and historical records to further our understanding of the events surrounding the sinking or abandonment of the steamboat in Caney Creek.

There are three primary accounts and many which are simply variations that give clues to the identity of this shipwreck. One account claims the remains are those of a trading vessel used during the Civil War to deliver goods along the Texas coast. This report comes from Mr. William H. Smith Jr., of Bay City, Texas. Mr. Smith, who was born in 1900, reported that his great grandfather, William H. Smith Sr., who lived in Indianola, Texas during the Civil War, owned and operated a sidewheel steamboat that traded along the coast. Mr. Smith states that while traveling to Galveston to pick up supplies for local farmers, his great grandfather's ship was spotted by a Yankee gunboat near the Brazos River. Trying to reach safety, the captain headed back toward Matagorda Bay, entering through a small cut in the peninsula called “Old Mitchell’s Cut” (Figure 42). Once in the bay, Captain Smith then took his ship through “Abram Sheppard’s Canal” into Caney Creek. After traveling up river, the captain and crew gathered all the ship’s documentation and left her tied along shore. He hoped to retrieve her at a safer time. A month later, the captain and crew returned from Indianola in hopes
of backing the ship out of the creek. Upon reaching the location they found the ship scuttled and burned to the waterline (William H. Smith 1997, pers. comm.).

Figure 42. Map showing the entrance of "Old Mitchell's Cut" into Matagorda Bay. Also illustrated is "Abram Shepard's Canal" which leads into Caney Creek.

The second account comes from several local residents from Bay City, Texas. This story claims this wreck may have been placed here intentionally. When the Union Army threatened to take the upper Texas coast, including Galveston, Confederate officers decided to impede navigation along Caney Creek to protect the valuable resources further upstream. It was thought this shipwreck might represent one of several ships sent up to Hawkins' drawbridge to deliberately block any Union advance. It is
believed that Confederate forces burned these ships to the waterline so as to hide their locations until a Union ship was right upon them. It was the Confederate officer’s intent to damage or sink Union vessels and possibly block the channel further.

The last account comes from Mr. L. Rutherford of Bay City, Texas. Mr. Rutherford claims that after the Civil War, a still prosperous plantation owner was shipping cotton and other cargo down the creek. While awaiting their employer’s cargo, two crew members, angry at the ship’s owner because of unfair pay, passed out from drinking. The ship was reported to have caught fire and the crew, too drunk to stop the blaze, jumped to save their lives leaving the ship to burn (L. Rutherford 1996, pers. comm.).

These accounts give many interesting as well as conflicting clues to the events surrounding this shipwreck. A review of historical information helped piece these bits of information together which verified and challenged many points of these hypotheses. A good source of historical information are the accounts from the Civil War. Records made during the war give many possible situations from which this wreck could have derived. The Confederacy used Hawkins’ Landing as a naval and army base throughout the Civil War. For this reason protecting Caney Creek was very important. In 1863, Civil War dispatches indicated that General John Bankhead Magruder, Confederate commander in charge in Texas, ordered the Confederate steamers C.S.S. J.F. Carr and C.S.S. Cora and 11 smaller vessels to transport 2,000 bales of cotton up Caney Creek to the Hawkinsville plantation (Smith, 1863: 464). Although they did make several trips up the creek to Hawkins’ plantation before and during the Civil War, both steamboats were sternwheelers and reports indicate that they were not scuttled on Caney Creek. Other
steamers ordered to Hawkins’ Landing included the sternwheelers *Lizzie Lake* and *Lucy Gwin* (Freeman & Prewitt, 1994: 24). Neither were to return to Caney Creek after the war ended and their whereabouts were recorded later in other parts of Texas (Way, 1983: 291 & 297). Although subsequent orders were given to sink several ships in the creek, these plans were never carried forward using the ships listed. Instead, these vessels were used to transport endangered cotton reserves to Hawkins’ Landing. No other contemporary ships have been found in Caney Creek to verify the abandonment claim.

Archaeological documentation further conflicts with this theory, since both engines were found still engaged. If the ship had been abandoned, the engines would have most likely been disengaged before sinking.

In the *Historic Matagorda County Sesquicentennial Book*, Kathleen Tatum reported that J.B. Hawkins owned and operated steamboats to transport his cotton, sugarcane and molasses to Matagorda and out-of-state markets (Parker, 1986: 70). Mr. Rutherford’s report might indicate Hawkins as the ship owner whose vessel burned as the crew abandoned her. In consideration of the tremendous amount of commercial production coming from Hawkins’ estate, and because Hawkins may have owned several steamboats, Rutherford’s story does provide a possible solution. Additional research, however, determined that this story is unlikely. Mr. Frank Lewis Sr., a descendant of J.B. Hawkins, believes the Hawkins family never owned any steamboats on the Caney Creek. Mr. Lewis believes the only ship that belonged to the Hawkins family was a pleasure yacht operating on Lake Austin (Frank Lewis Sr. 1997, pers. comm.).
Historical evidence exists which concludes that prior to 1861, the steamers *Cora*, *J.F. Carr*, *Lucy Gwinn*, *Lizzy Lake*, *Delta*, *Planter*, *Echo*, and *Troy* all made trips up Caney Creek and possibly up to Hawkins' Landing. Of these, the *Echo*, *Delta*, *Planter* and *Troy* were all sidewheel steamboats. These ships, with the exception of the *Echo*, fit the dimensions of the wreck being studied. As for the *Echo*, all that is known about this vessel is she was built on Caney Creek in 1858 and later moved to La Salle, Texas. It was finally taken into Confederate service in 1861 (Lytle & Holdcamper, 1975:59). This ship was taken off public record after the Civil War and its final whereabouts are unknown.

Ships like the *Troy* and *Delta* which operated in Matagorda Bay and along the Texas coast would have known about Caney Creek and would have navigated this creek to take up supplies or haul produce out to Matagorda or Inidanola. The *Troy* had very similar dimensions as those recorded on the Caney Creek wreck. This ship was 120 feet long with a 22 ½ foot beam and a 4 foot depth of hold, and measured 97 13/95 tons. This ship had one deck, a transom stern and a plain head (Figure 43). Built in 1852 in Brownsville Pennsylvania, the *Troy* came to Matagorda Bay by way of New Orleans in 1854. Later in 1857, this ship was sold to a merchant in Saluria, Texas and began runs up Caney Creek. The last mention of this ship was a report in a local paper stating that after repairs she returned to Caney Creek. There is no other mention of this ship after 1860.

The remains of the Caney Creek shipwreck are those of a side-wheel steamboat, and with the information extracted from the wreck and the local informants, believed to have worked on Caney Creek after the Civil War. At present no verification has been
made on the ship's identity. Because of the lack of salvage of the ship's machinery, this vessel probably worked the Caney Creek at the end of the steamboat era. The valuable components onboard would have surely been salvaged and reused in another ship.

Figure 43. First listing of the Troy as she was prepared for service. (Courtesy of the Texas Historical Commission)
Engines were frequently salvaged from wrecked and sunken boats and on the
dismantling of old boats were often removed for use on new vessels (Hunter 1949:112.)
This fact might indicate the creek was finished with steamboat navigation due to the
coming of the railroad and its security in 1898 (Clayborn 1986:213). Most possible
identities fall short with this present information. There is no mention of using Caney
Creek for transporting cargo to Matagorda Bay can be found after the late 1870s. It
seems clear this river no longer supported steam navigation by the end of the 19th
century. The steamboat wreck embedded in the thick mud of the creek is all that
remains of the once prominent river highway. This steamboat along with many others
working the rivers of Texas brought stability and reliability at a time when it was needed
most. With the coming of the railroad, came the end of steam navigation, not only on
Caney Creek but on many of the inland rivers of Texas.
CONCLUSIONS AND RECOMMENDATIONS

In relation to the navigation of western rivers and the problems relating to construction and operation, the Caney Creek steamboat, like most western river steamers, was not an inferior design. With the available economic and technical resources as well as the navigation conditions of the rivers in Texas, this ship should be regarded as a remarkable achievement. The western rivers steamboat evolved, through trial and error, as the optimum design for cost, ease of operation and maintenance, and the hazardous conditions of their environment. Navigation requirements demanded that construction fit within the local economy. Therefore western steamboat construction evolved as the need to adapt was pressed upon it.

Because maneuverability and light weight were necessary, these ships were constructed with a shallow draft design and utilized light weight woods and thin scantling. Western river steamers carried a greater amount of cargo upon a given draft; and the cost of construction was much less than eastern-built steamers (Tredgold, 1851:39). This ship was a work boat. Its construction features employed those techniques typical of western river steamers. Over time, it became necessary to reduce all extraneous weight, while at the same time create as much power as possible. These two factors sometimes played against these quivering ships. Reducing timbers was necessary for vessels plying the western rivers where water depths changed dramatically. As the need to enlarge deck space and superstructure increased, the demand to lighten
the hull became the dominant theme. From early on in steamboat navigation to the
setting of the Caney Creek steamboat, one can see the changes in thought for western
steamer design.

Based on the information recorded, the Caney Creek steamboat wreck,
archaeological site 41MG32, is an excellent example of western river technologies. The
wreck has significant archaeological value in addition to being of great local interest. Its
excavation would be desirable since no vessel of this type has ever been the subject of a
thorough archaeological investigation. The question of raising part of the machinery for
public display has been considered but because of lack of funds has not been fully
explored.

At present, the wood is in a waterlogged state and would require a conservation
process of several years if part or all of the ship was raised. The reconstruction of a
vessel of this type would necessitate the hiring of a trained conservator, and the cost of
conserving the artifacts would be high. An alternative would be the erection of a
breakwater or cofferdam in order to expose the wreck and map the remaining timbers.
Because of the turbidity of the river, an excavation using traditional archaeological
techniques would slow and costly. The breakwater, would allow archaeologist the
opportunity to use more methodology that is based on terrestrial archaeology.

Funding is the most pressing issue facing the excavation of this shipwreck. Like
all excavations, getting the appropriate moneys is a difficulty that requires a great deal
of fore thought before attempting any project. The greatest sources of funding that
would be available would come from the local communities. Local interest is such that funding source could possibly be found to plan for further study.

Currently, no excavation seems to be forthcoming. The Texas Historical Commission should monitor this site, using the SUAS members, and take note of any changes in the integrity of the shipwreck. At present, the ship is in little danger. The hull is well buried and well preserved. The machinery is in deep enough water to protect it from oncoming river traffic except the starboard pillow block. This feature, at low tide, sits only 10 inches below the surface of the river. Occasionally, this site is exposed during droughts (Figure 44). A marker buoy should be set to notify boaters of its existence. Even so, if a prop from a motor-boat did hit the pillow block, more damage would be done to the prop than the steamboat.

The uniqueness and the present condition of the wreck would make it an excellent candidate for placement on the National Register of Historic Places. This site needs the protection of the state government to make it continually available to researchers and historians. This vessel is also eligible for designation as a State Archaeological Landmark (SAL) under the criteria specified in the Antiquities Code of Texas, section 191.091. The Caney Creek steamboat wreck, archaeological site 41MG32, is one part of our ever-increasing understanding of Texas during its development. With the information collected during this and other projects in the state, gaps in the historical record can be filled and our understanding of the early years of Texas will become more fully developed.
Figure 44. Paddle-wheel flanges from the Caney Creek steamboat wreck during a drought. (Courtesy of the Bay City, Tribune, 1980)
REFERENCES

Adams, Robert M.

Bagot, J.T. & Richner, J.J.
1978  A Reconnaissance Survey of The Trinity River Basin.  Southwest Methodist University, Texas.

Baker, E.C.

Banks, N.P.

Barker Texas History Center

Bates, Alan
1968  The Western River Steamboat Cyclopedium. Hustle Press, Leonia, N.J.

Bates, William B.

Bay City Breeze [Bay City, Texas]
1898  Matagorda County - A County That is Rich in Natural Resources. 19 February 1898:4.

1894  Matagorda County - Sugar Bowl of the Lone Star. 20 September 1894:2.

Bexar Archives
1836  Barker Texas History Center, University of Texas at Austin.
Boggs, Wayne

Carroll, William C.

Chipman, Donald E
1992  Spanish Texas 1519-1821. University of Texas, Austin.

Clay, Comer

Claybourn, Guy

Colorado Gazette [Matagorda, Texas]
1841  6 November 1841:5.
1852  28 June 1852:2.

Cordova, Jacob De

Curlee, Abigail

Davis, J.T
1992  Historic Towns of Texas. Austin, Texas.

Department of the Interior, National Park Service

Forister, J.G., & Horton, H.R.
Freeman, M.D. & Prewitt, E. R.

Fritz, Gayle

Gammel, H.P.N.

Guthrie, K

Hollen, Eugene

Holley, Mary
1836 Texas. Special Collection at Texas A & M University.

Hunter, L. C

Indianola Bulletin [Indianola, Texas]
1852 Matagorda Shipping. 15 April 1852:5.

Ingram, Mary

Jackson, Donald

Jeter, Lorraine Bruce

Malsch, Brownson

Marr, J. C.
1928 The History of Matagorda County, Texas. Unpublished Master’s Thesis, Department of History, The University of Texas, Austin, Texas.

Matagorda County Tribune [Bay City, Texas]
1913 21 May:6.
1937 14 January:1-5.
1945 23 August:3.

Matagorda News
1912 18 October.

Montgomery, G. (EDITOR)

Osborne, D. & T. Gaebler

Parker, Frances (EDITOR)

Robbins, Hal
1952 The History of Slavery in Texas and the Southwest: Slavery in the Economy of Matagorda County, Texas. Number II. Department of History, Prairie View A&M University, Prairie View, Texas.

Rutherford, L. (1994, personal comm. Local Resident of Bay City, Texas)

Sawyer, W.D.

Smith, J.A., (1997, personal comm. Local Resident of Bay City, Texas)

Smith, Leon
1863 Letter from Colonel Leon Smith to Major General J. B. Magruder, November 30, 1863. The War of the Rebellion: A Compilation of the

Southwestern Historical Quarterly

Stieghorst, D.

Stieghorst, Junann J.
1965  Bay City and Matagorda County: A History. The Pemberton Press, Austin, Texas.

Stone, Irving

Tatum, Kathleen

Texas Almanac

United States Government

United States House of Representatives

Way, Frederick Jr.

Weddle, R.S.

1974  Plow-Horse Cavalry. The University of Texas. Austin, Texas.
APPENDIX A

A GLOSSARY OF STEAMBOATING TERMS

ARM A spoke, as part of a paddle wheel.
ASH TROUGH A metal pan beneath the grates, to catch ash falling from the firebox.
BEAM Width of the hull, measured from outside the planking of the hull.
BOILER Metal water tank in which steam is generated by heat passing through interior ducts.
BOILER DECK The deck above the boilers.
BRACES Timber posts used in connection with the hog chain system to hold the hull in shape.
BUCKET The paddle of the paddlewheel.
BULKHEAD A partition or wall.
CAPSTAN An upright winch used for pulling lines.
CHOCK A deck fitting used for leading lines. A roller chock is fitted with sheaves to reduce friction.
COAMING A curb around the edge of a deck or hatchway.
COCKED HAT A triangular wooden block used to brace paddlewheel arms.
COTTON PACKET Sidewheel or sternwheel packet modified to carry cotton with an extra wide main deck and a very narrow boiler deck and cabin.
CROSS CHAIN A system of wrought iron rods used for holding up the guards.
CROSSHEAD A joint between the pitman and drive shaft on a steam engine.
CYLINDER TIMBER A long structural member which supported the engine cylinder and the paddlewheel bearing.
DECK BEAM Transverse member to which the main deck is attached.
DRAFT The amount of the hull extending below the waterline measured vertically.
FIRE DOOR The door in the furnace wall through which the fireman hurl the fuel.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLANGE</td>
<td>The hub on the paddlewheel where the arms were attached.</td>
</tr>
<tr>
<td>FURNACE</td>
<td>The space under the boilers where the fire is built.</td>
</tr>
<tr>
<td>FUTTOCK</td>
<td>A frame timber other than a floor timber; one of the middle pieces of a frame.</td>
</tr>
<tr>
<td>GUARD</td>
<td>Deck outboard of the hull.</td>
</tr>
<tr>
<td>HATCH</td>
<td>An opening through a deck.</td>
</tr>
<tr>
<td>HOG CHAIN</td>
<td>A wrought iron rod used to hold up the ends of the hull.</td>
</tr>
<tr>
<td>HOGGING</td>
<td>The tendency for a hull to hump up in the center and droop at the ends.</td>
</tr>
<tr>
<td>HOLD</td>
<td>The inside of the hull.</td>
</tr>
<tr>
<td>JACKSTAFF</td>
<td>The forwardmost mast used as a sighting device for the pilot.</td>
</tr>
<tr>
<td>KNUCKLE CHAIN</td>
<td>A transverse wrought iron rod used to hold up the sides of the hull.</td>
</tr>
<tr>
<td>MAIN DECK</td>
<td>The lowest deck, the one that covers the hull.</td>
</tr>
<tr>
<td>MUD DRUM</td>
<td>A drum located under the boilers to collect sediment.</td>
</tr>
<tr>
<td>PADDLEWHEEL</td>
<td>The propelling member of the machinery.</td>
</tr>
<tr>
<td>PILLOW BLOCK</td>
<td>The supporting members of the shaft bearing.</td>
</tr>
<tr>
<td>PITMAN</td>
<td>The connecting rod between the engine crosshead and the paddlewheel crank.</td>
</tr>
<tr>
<td>PITMAN STRAPS</td>
<td>Wrought iron straps bolted to top and bottom of the pitman.</td>
</tr>
<tr>
<td>POCKET</td>
<td>The depression in the paddlewheel flange that receives the wheel arm.</td>
</tr>
<tr>
<td>ROLLER CHOCK</td>
<td>A chock with a roller in it to reduce rope friction.</td>
</tr>
<tr>
<td>SCANTLING</td>
<td>Any board used in framing a ship.</td>
</tr>
<tr>
<td>SCAPE</td>
<td>A verb meaning escape of steam from engines or exhaust.</td>
</tr>
<tr>
<td>SCAPE PIPE</td>
<td>A pipe running from the exhaust valve to the air above the roof, allowing exhausted steam to escape to the atmosphere.</td>
</tr>
<tr>
<td>STACK</td>
<td>The smokestack or chimney.</td>
</tr>
</tbody>
</table>
STEAM DRUM  A cross pipe above the boilers used for collecting and distributing steam.

STIRRUP    A double bolt, with nuts, that clamps the paddle or bucket to the arm of the paddle-wheel.

WHEELHOUSE The casing around the paddle-wheel on a side wheel vessel.
VITA

David Layne Hedrick was born August 11, 1967 to Larry and Mozelle Hedrick. He received a Bachelor of Arts degree from the University of North Texas, Denton, Texas in 1993. His archaeological experience before entering Texas A&M University included excavation of a paleo-Indian site in North Texas. In 1995, Layne went to Sadana Island in Egypt under the direction of Dr. Cheryl Ward Haldane of the Institute of Nautical Archaeology to investigate a 17th-century shipwreck in the Red Sea. Since that time, Layne has been involved with the La Salle Shipwreck Project in Matagorda Bay, Texas. His permanent address is 171 T-Anchor view, Canyon, Texas 79015.