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The racing log canoe: Ancient traditions alive on the Chesapeake Bay

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THE RACING LOG CANOE:
ANCIENT TRADITIONS ALIVE ON THE CHESAPEAKE BAY

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CHESAPEAKE BAY

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ABSTRACT

THE RACING LOG CANOE:

ANCIENT TRADITIONS ALIVE ON THE

CHESAPEAKE BAY

By N. Lyles Forbes

The Chesapeake Bay racing log canoe is one of the most unique indigenous craft on the Bay, and is a significant maritime artifact of material culture. This thesis studies the racing log canoe and the traditions which have given rise to its creation and evolution. In addition, a study of comparative experiences, involving the design, construction, evolution, and use of log canoes from around the world is presented.

The principal focus of the thesis is to analyze and interpret the racing log canoes as significant artifacts of material culture. This work details the elements of design that make the canoes a purely racing type, the ancestry from which they developed, and how they relate to other forms of log canoes from around the world.

The racing canoes have a complicated and unique design which has developed from workboat traditions. There are three basic elements of the racing canoe detailed in this thesis: the hull, the sail rig, and the system of counterbalance. The racing canoe evolved as a specific type in the latter decades of the nineteenth century. However, they are part of a long heritage on the Bay, having their

origins in the Indian dugout canoes. Yet, the instance of the log canoe on the Chesapeake Bay is not a rare experience in maritime history. Since prehistoric times, log craft have provided man a means of transportation, communication, and for gaining sustenance from the seas. The many world-wide experiences lend a better understanding of the racing canoe's unique position in maritime history.

In addition, this thesis will evaluate the performance of the racing canoes in regatta conditions.

Included in the appendices: data and dimensions of the racing canoes, the rules for the Governor's Cup Regatta, and lines plans of racing and other canoes.

ACKNOWLEDGMENTS

Since beginning the process which culminates in this thesis, the author is quite fortunate in having been the beneficiary of a great amount of guidance and support from a number of people; without which, this work would probably never have been realized. And, it is with pleasure that he acknowledges the individuals who have made significant contributions.

To his thesis director, Dr. Carroll Van West, the author owes the greatest debt. He has encouraged and challenged the author over the last year and half to develop this work. Through innumerable readings, discussions, and papers, he instilled the importance of material culture to the study of history; and allowed the author to pursue his own interests in maritime history through material culture. He reviewed several papers which became the basis of this work, as well as the drafts of this manuscript, offering suggestions and guidance.

The author is very grateful to three particular individuals who have encouraged and aided him in developing and defining this work. Dr. Ralph Eshelman, Director of the Calvert Marine Museum, in Solomons, Maryland was responsible for beginning the research process during the author's internship at the museum in 1988. His assistance and enthusiasm was most encouraging. Paula Johnson, Curator of

Maritime History at the Calvert Marine Museum, served as the author's "mentor" during both excursions to do field work, offering valuable insights and encouragement. The author is especially grateful for the numerous publications and introductions she directed him to. David A. Taylor, Folklife Specialist at the Library of Congress in Washington, D. C., is partly responsible for suggesting that the author pursue the topic of the racing log canoes. David's work on vernacular watercraft has been a major influence upon how the author began to understand boats as significant artifacts of material culture. David has also offered comments and suggestions on earlier papers, in addition to leads on comparative source material. His guidance has been invaluable to the author.

The author is also indebted to Dan North, President of the Chesapeake Bay Racing Log Canoe Association, for the chance to participate in a log canoe regatta. Dan, his wife, and the crew of the Jay Dee, were most helpful and gracious to the author. The foul weather gear, insights, and chance to ride the boards were most appreciated.

The author would also like to thank: the staff of the Calvert Marine Museum, for all of their help and assistance over the past two years; Dr. Fred Rolater, professor of History at Middle Tennessee State University, for reviewing and editing the manuscripts of the thesis and whose humor and suggestions provided encouragement; Benjamin H. Trask,

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The author would like to acknowledge the contributions of: Dr. James K. Huhta, Director of the Center for Historic Preservation, for encouraging him in the field of maritime preservation; Ms. Caneta Hankins, Projects Coordinator at the Center for Historic Preservation, for her help in arranging the internships which began this process; and the colleagues who aided in 'piratical depredations' and other innumerable ways: Timothy G. Zinn, Rachel Franklin, David and Theresa Brum, Joel Flint, Ken Rush, Scott Winnette, Peter S. V. Simmons, Kathan Dearman, Marc Simon, and Raymond Krupo.

The author would like to especially thank Mr. and Mrs. Nelson Forbes, his mother and father, for all of their valuable encouragement, support, and assistance in this

endeavor. He would also like to thank his brother, Mallory Forbes, for aiding him in his field work, during the summer of 1989. Many thanks also the author's fiancee, Candace Berry, for all of her support, encouragement, and friendship.

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To my Mother and Father

That was the three-minute gun. . .mark. . .we'll head her up and see where the wind is coming from. . .come in from the boards a bit. . .it's coming across the river light but steady. . .okay, the committee boat is on the favored end of the line. . .bearing off, ready on the boards, starboard side. . .can you see anyone underneath us?. . . Bird just tacked over to starboard so your okay. . .out a little bit on the boards, keep her flattened. . .one minute and thirty seconds until the gun. . .looks like most of the fleet is going to the top end of the line. . .we're still going to go off by the committee boat. . .little more wind coming up, ease your main a bit. . .move on out a little on the forward boards. . .how does it look below us?. . .your clear up to the committee boat. . .watch your boards, come back in a little. . .wind's died off some. . .can I have some more trim on the jib?. . .how's that?. . . okay, a bit more maybe. . .fine. . .ten seconds. . . Magic's just gone over on port, looks like we'll beat her to the line though. . .boards ready?. . .standby to tack, lets keep the boards out of the water as we come over. . .there's the gun. . .Hard a Lee. . .coming across. . .watch the sail. . .good tack, move on out the boards an flatten her a bit. . .Blossom and Lark are across. . .okay, we're clear, move on out a little, trim your main some. . .someone let me know when you see the first mark. . .

-start of a log canoe race

CHAPTER ONE

INTRODUCTION

The primary objective of this thesis is to document the continuing traditions of the racing log canoe of the Chesapeake Bay--and to detail what influences have impacted and perpetuated these craft. In order to accomplish this, several questions had to be answered:

1. What are the present design elements/systems of the racing canoes?
2. What is the evolutionary process from which the racing log canoes developed from the Indian dugouts?
3. What is the nature of the relationship between the racing log canoes and the Chesapeake Bay?
4. What is the nature of the relationship between the racing canoes and canoes in other areas of the world--both in prehistoric and historic times?
5. What is the nature of the relationship between the component/systems of racing canoes and modern sailing craft?

Although the primary concern is the relationship between the racing canoes and their immediate context, the

Chesapeake Bay, components within its design have precedents from other canoes and seacraft of different times and places. For this reason it is necessary to explore and analyze the racing canoe in its relationship to a wider world.

As with any material culture study, it is of utmost necessity to define the time and place relationship of the subject. The racing log canoes have existed as a type since about 1840. They evolved almost exclusively on the Eastern shore of Maryland, on and around the rivers of Talbot County, primarily in the Tilghmans Island area. Therefore, Chapter Two will focus on the Eastern shore area of Talbot County from the 1840's to the present.

As the racing log canoe is simply a development in an evolutionary process, it is necessary to further develop its context beyond the Talbot County area. The ancestral heritage of the racing log canoe dates prior to the arrival of the white Europeans to the Chesapeake, to the Indian dugout canoe. Chapter Three will focus on the evolutionary development of the log canoe in the Chesapeake Bay, from the Indian dugout to the racing canoe, roughly within the time frame of 1620 to 1900.

The ancestry of the racing log canoe, extends beyond the Chesapeake. Log canoes as watercraft have existed since prehistory, in many parts of the world. Many cultures today still use log canoe transportation. This is true for both

North and South America, as well as Scandinavia, Polynesia, and Indonesia. Chapter Four will compare and analyze canoe forms, component systems and uses in different areas of the globe, from prehistoric times to the present.

In researching the racing log canoe, the author encountered several limitations. Little direct scholarship existed on the racing log canoes. The sources cited in the bibliography are primarily documentary in nature. Many were written as newspaper or magazine articles. Yet they did shed light on the importance of the canoes as a material culture artifact. Another limitation was the lack of offset line drawings of present racing canoes. As much of the research was conducted during the racing season, the drafting of lines was not possible. Due to the rigorous hard work of racing one of these magnificent craft, the author also was unable to take detailed action photography.

Sources of Data

The author reviewed and analyzed many sources of data in preparation for this thesis. Books, both academic studies and more general readers, were a major source. Many of the works dealt with the history of the Chesapeake area; maritime history, including seacraft, navigation, construction, and use; and general works on the field of material culture.

Newspapers and periodicals provided a wealth of

information on the racing canoes. Most of the information, in fact, on the racing canoes was found in these sources. The articles described races, individual craft, great rivalries, building of canoes, and the atmosphere which surrounds the regattas.

Pamphlets and treatises provided anthropological and ethnographical information used for comparisons in Chapter Four.

Photographs and drawings provided a very good visual source of data. Most photographs and/or drawings were found in conjunction with articles, or included in books. Several of the author's own photographs and drawings are included in the text. Having been able to draw several of the plates for the text allowed for an even deeper understanding of the shape and design of the canoes.

Informants were also an essential part of the research for this study. Dan North was my principal informant on the racing canoes; he is also the skipper of the Jay Dee, on which I had the pleasure of crewing. David A. Taylor, Folklife Specialist at the Library of Congress, was my principal informant and inspirant in the area of "vernacular watercraft"; and he guided me to comparative studies of the canoes in a wider world.

Personal observation and participation on the part of the author were also invaluable sources of data. Being able to participate in a regatta, or even feel how the canoes

sail, is a very important part of any research on maritime cultural resources. There is a big difference in reading about a craft and looking at her lines, and having sailed upon her and understood what the craft can communicate. (A watercraft is always referred to as "her," or "she.")

Methodology

There is a certain spirituality and honesty about being on the water in a sailing craft; to be the mediating force between wind and water. The spirit of competition also exists, not only between skippers, but between one's self and one's environment. Having been involved in sailing and sailboat racing for a good part of his life, the author's interest in the log canoes stems from a deep-rooted adoration for the seas and the craft which sail upon them. It is from this admiration, focused through his training in historic preservation, that the author received the inspiration for this work.

The author's first opportunity to understand watercraft from a different perspective was through readings in material culture. Books and articles by Henry Glassie, James Deetz, and John B. Jackson had a profound impact in the way he understood sailing craft.[1] Having absorbed this

[1]Henry Glassie, Patterns in the Material Folk Culture of the Eastern United States (Philadelphia PA: University of Pennsylvania Press, 1968); James Deetz, In Small Things Forgotten (Garden City NY: Anchor Press-Doubleday, 1977); J. B. Jackson, Discovering the Vernacular Landscape (New Haven: Yale University

information, the author accepted an internship at the Calvert Marine Museum in Solomons, Maryland. He spent a little over two months working as a research intern during the summer of 1988 and became very interested in the indigenous sailing craft of the Bay, not only as wonderful sailing vessels but significant material culture artifacts.

Part of the internship was spent investigating possible topics for this thesis. In photographing the museum's small craft collection for a national database[2], the author became intrigued by several three- and five-log hulls in the collection. The hulls are of fore-and-aft design, meaning both the bow and the stern were of the same shape. Their shape recalled the great *drakars* of the Vikings. The author purchased a copy of Marion V. Brewington's quintessential work on the canoes[3], and Frederick Tilp's fine work detailing the maritime heritage of the Bay.[4] He also obtained a copy of Randall Peffer's Watermen, which describes the lives and work of the Chesapeake watermen.[5]

Press, 1984).

[2]The Union List Data Forms is a project being conducted by Woodenboat magazine. Each form contains the measurements, history, rig or propulsion, and materials of each small craft in a museums collection. It will be compiled into a national database.

[3]Marion V. Brewington, Chesapeake Bay Log Canoes and Bugeyes (Centreville, MD: Tidewater Publishers, 1963).

[4]Frederick Tilp, The Chesapeake Bay of Yore (Alexandria, VA: By the author, 1982).

[5]Randall Peffer, Watermen (Baltimore: The Johns-Hopkins

These three works brought to light what the log canoes meant to the Bay and established a secondary foundation for a thesis topic. Perhaps most importantly, the author read Boat Building in Winterton, Trinity Bay, Newfoundland, by David A. Taylor[6], which further refined the research topic. The author met Taylor by way of Paula Johnson of the Calvert Marine Museum, and visited him at his home in Washington, D.C. After having discussed common interests and possible subjects, Taylor suggested that the author pursue the log canoes, understanding them as artifacts of material culture and works of art. The internship ended with the beginning of a new school year, the genesis of this study beginning to take shape.

During the ensuing school year, the author applied the principles and patterns of material culture studies to watercraft in an attempt to view them from a different perspective. This culminated in the writing of two papers which are in some ways the basis of this thesis. Through a readings course with his thesis director, Dr. Carroll Van West, the author explored colonial Chesapeake histories[7] to

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University Press, 1979).

[6]David A. Taylor, Boat Building in Winterton, Trinity Bay, Newfoundland, Canadian Centre for Folk Culture Studies, paper no. 41. (Ottawa: National Museums of Canada, 1982).

[7]Several works which were read include: Edmund S. Morgan, American Slavery, American Freedom: The Ordeal of Colonial Virginia (New York: W. W. Norton, 1975); Mechal Sobel, The World They Made Together: Black and White Values in 18th Century Virginia (New Jersey: Princeton University

get a better contextual understanding of Maryland and Virginia. He also read many of the works of the noted maritime historian, Samuel Eliot Morison.[8]

The author's second trip to the Chesapeake came in August, 1989. It was solely for the purpose of gathering information about the log canoes. He wrote a letter to the Chesapeake Bay Log Sailing Canoe Association, requesting a race schedule and the possibility of participating in a regatta. He spent several days at the Calvert Marine Museum, doing further research in their files. In addition, he researched collections at the Maryland Historical Society, the Radcliffe Maritime Museum in Baltimore, and at the Chesapeake Bay Maritime Museum in St. Michaels. A letter of inquiry to Woodenboat magazine for any information it might have pertaining to the racing log canoes proved very fruitful. Dan North, President of the log sailing canoe association, invited the author to the regatta at the

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Press, 1987); Arthur P. Middleton, Tobacco Coast: A Maritime History of the Chesapeake Bay in the Colonial Era (Newport News: The Mariner's Museum, 1953); Allen Kulikoff, Tobacco and Slaves: The Development of Southern Cultures in the Chesapeake, 1680-1800 (Chapel Hill: University of North Carolina Press, for the Institute of Early American History and Culture, 1986); Robert B. St. George, Material Life in America 1600-1860 (Boston: Northeastern University Press, 1988).

[8]Morison is a very important American historian, and his approach to history has been very influential. Several of his works which were most profound include: Vistas of History, The Caribbean as Columbus Saw It, By Land and By Sea: Essays and Addresses by Samuel Eliot Morison, and Sailor Historian.

Tred Avon Yacht Club in Oxford, Maryland on August 12-13, enabling him to participate in the regatta and get a better understanding of the canoes and the excitement which surrounds them. Perhaps the best research collection was at the Mariners' Museum in Newport News, Virginia. Its small craft collection is especially fine, containing canoes from around the world, as well as from around the Chesapeake. The library contained some of the finest material on the canoes that the author was able to find. It was from this visit, primarily, that Chapter Four derives its genesis.

CHAPTER TWO

THE CHESAPEAKE BAY RACING LOG CANOE

The first part of chapter two examines the racing canoe in relation to the component systems of its design, namely the hull, the sail arrangement, and the system of counterbalance. This chapter will also analyze how these components synthesize and contribute to the performance of the canoe, or, in other words, how the canoe functions as a racing/sailing craft. The second part will focus on the history of the racing canoes, the history and structure of the regattas, how the canoes have evolved since the 1840s, and the rules by which the canoes are governed.

General Description

> Remember, Mr. Rocking Chair Skipper, it is no afternoon pleasure trip with cushions, a dry cockpit, etc., we are on. We are on the end of a board, flat on our bellies, sliding, eternally sliding in and out, in and out for 20 knots (not miles) or more in a breeze, maybe, that keeps us all guessing. How about off the wind--'wung out?' you may ask. Do we not then settle down, light our pipes and take it easy? Not by a jug full. Our canoe may be classed as a brute on the wind, and indeed she is a brute, but she is good natured about it, and best of all she is honest.[9]

The Chesapeake Bay racing log canoe is one of the most striking and impressive watercraft existing today. Having sleek, graceful hulls, enormous sail area, and crew members

[9]E. T. Valliant, "Chesapeake Racing Canoes," The Rudder, 1906, 457.

balancing out on springboards, the canoes are pure racing thoroughbreds. "With their pronounced 'powderhorn' sheers, and clipper bows carved and painted trailboards, they look like miniatures of the graceful centerboard schooner yachts of the 1870s."[10] (Fig. 1) Having their origins in the Indian dugout, they exist as the ultimate in the evolutionary process of the log canoe on the Bay. Their survival is as much a testament to their design and construction, as it is to the excitement and following they inspire.

Design and Construction

The racing log canoes have one of the most complex forms of design of any sailing craft today. The design is basically a synthesis of three systems[11]: the hull, the sail plan (or the rig as it is commonly known), and the counterbalance. The synthesis between the three components

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[10]Roger Vaughan, ". . .Or Else You Get Wet," Nautical Quarterly, Summer 1983, volume 22, 6.

[11]David Pye, in his work The Nature of Design (New York: Reinhold, 1964), defines a system as a group of things in which a change takes place. When energy in any of its several forms is put into a system of any kind, changes take place, both in the energy, which suffers transformation, and in the components of the system, where various redistributions of matter occur (14-15).

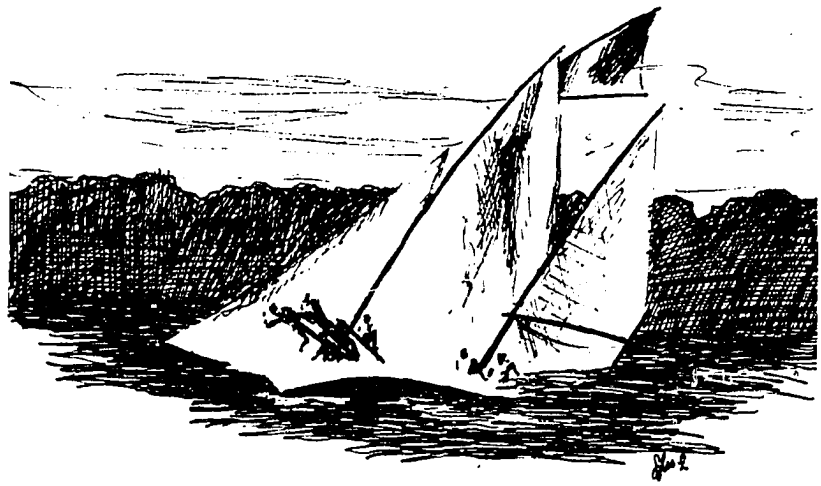

Figure 1. Chesapeake Bay racing log canoe
From a Robert Greiser Photograph for Woodenboat
November-December 1978, 10.

provide the canoes with their incomparable speed, and distinctive appearance. It is necessary to examine each of the components separately to best understand them as a complete, interrelated system.

The Hull

The hulls of the racing canoes range in length from the shortest, Island Bird, at 27'4"[12]; to the longest and possibly the fastest canoe, Jay Dee, at 35'0"[13]. They average between 5'6" and 8'6" in beam, and can carry about 2,000 square feet of canvas on two masts.[14]

The hull represents the greatest evolutionary link in the history of the Bay canoes, as its construction has changed little in the last 150-odd years. The traditional shape of the racing canoe is double-ended, that is, "having a pointed bow or stern"[15]. However, there are three notable exceptions to this tradition: two canoes built by John B. Harrison, Jay Dee and Flying Cloud, built in 1931 and 1932 respectively, with a transom or wine-glass stern; and a canoe built by Sidney Dickson, Spirit of Wye Town, built in

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[12]"The Sporting World of Log Canoes," The Classic Boat. By the editors of Time-Life, The Library of Boating series. (Alexandria VA: Time-Life, 1977), 156.

[13]Howard I. Chapelle, American Small Sailing Craft (New York: W. W. Norton, 1951), 303.

[14]Randall Peffer, "Log Canoe Racing," Sail, October 1975, 109.

[15]Patrick Royce, Sailing Illustrated (Marina del Rey CA: Western Marine Enterprises, 33rd edition, 1989), G9.

1976, which has a rounded stern.[16] But one thing that most of the canoes have in common is how the hull is constructed.

The hull of a racing log canoe is constructed from five logs, a process devised to widen the beam in relation to the overall length of the boat. This process is well documented[17], and only a concise description will be necessary here.

The tradition of canoe building involves a very old process, that of building by hand and eye. The tools used to construct the canoes are simple hand tools, but in the hands of a master, the adze and the axe can render sculpture (Fig. 2). Building by hand and eye is an art, as well as a science, that can only be learned through experience. The process is less reliant on drawn plans, and more on the desired shape of the builder, and the inherent limitations of the wood. The wood to be used for constructing the canoe

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[16]Vaughan, 11, 16-17.

[17]Kalani Armstrong, "The Chesapeake Bay Canoe, From Forest To Flood," Rudder, n.d., 126-8, 192; M. V. Brewington, Chesapeake Bay Log Canoes and Bugeyes (Centreville MD: Tidewater Publishers, 1963), 7-19; Robert O. Burgess, "Carving of a Log Canoe," National Fisherman, July 1971, 4-b, 5-b; _____, Chesapeake Sailing Craft part one, (Cambridge MD: Tidewater Publishers, 1975), 2-4; Howard I. Chapelle, American Small Sailing Craft (New York: W. W. Norton, 1951), 295-8; William H. Green, "Building, Rigging, and Racing a Log Canoe," Chesapeake Skipper, June 1948, 23, 26-7; Randall Peffer, "Cut and Look: Building a Chesapeake Bay Sailing Log Canoe," Woodenboat, Volume 1, Number 6, 27-33; Ralph Reppert, "How to Build a Log Canoe," Sun Magazine, 23 January 1972, 7-12, 27; G. O. Sheilds, "How to Make a Log Canoe," Popular Mechanics, February 1916, 2306-8.

is chosen from the forest by the builder. The first consideration in building a canoe hull is the choice of wood. "By far the most popular wood used is Maryland and Virginia yellow pine. . .the only other woods ever used were poplar, redwood and white pine."[18] It is the most common type of wood used in canoe construction because of its size, strength, and longevity. The builder looks primarily for thickness and length of each tree to match the desired length he has in mind for the canoe. But he also looks for shape in a tree. He wants the keel, or center log, to be as straight as possible. He also wants the garboard logs, which flank the keel log, to be as straight as possible. However, for the wing, or outer, logs, he looks for curvature. The curvature must fit as close as possible, on both sides for the length he is building (Fig. 3). When each of the five trees has been selected and felled, the builder is ready to begin construction.

The five logs used in the hull are arranged in a specific order. The center log is the keel log, and is the first to take shape. The keel log is flanked on either side by a garboard log. Each garboard log, then, is flanked by a wing log, completing the arrangement. The keel log is laid

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[18]Green, 23.

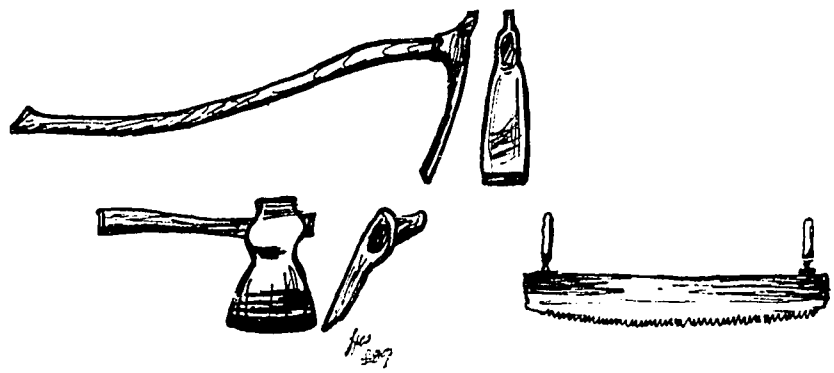

Figure 2. Canoe builder's tools.
From Lavish, Early Chesapeake Single-Log Canoes, 6-7

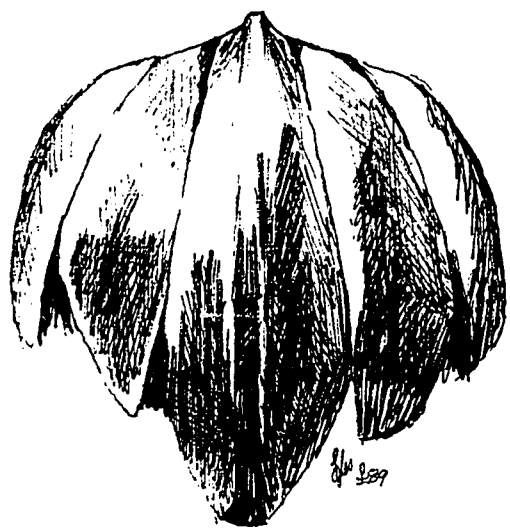

Figure 3. Hull of racing canoe during construction.
From a photograph (Brewington, 11)

out and cut to the desired length, then flipped upside-down. Using the adze, the builder roughly shapes the log with the proper amount of deadrise before turning it over again. A centerboard slot is then cut in the keel log.[19] Now, the garboard logs are placed parallel to the keel log and cut to length and shaped to fit on either side.[20] As the builder shapes and fits each garboard, he takes measurements at stations along the hull, that are carried over to the other side in order to keep the hull as symmetrical as possible.[21] Once the garboard logs have been temporarily secured in position to the keel, he then trims the wing logs to length to fit each garboard. Since the wing logs are naturally curved, a good amount of shaping may be necessary to fit them to the garboards. Once all of the logs have been shaped to fit together, the rough form of the canoe begins to emerge.

At this point the builder separates the logs placing the keel log on its side. He temporarily fits the garboard and wing log for the exposed side to the keel in order that the bottom of the canoe may be given the proper deadrise and the chines rounded.[22] He repeats this process for the other

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[19]Chapelle, 296.

[20]Burgess, 5-b.

[21]Peffer, 27-8.

[22]Burgess, 4-b.

side, with measurements and constant evaluation by eye, to maintain symmetry. The canoe hull is now flipped right-side up and the interior is hollowed out using the adze. The hull is thicker on bottom, at the keel log it is from three to six inches thicker than anywhere else, and gets narrower out towards the wing logs.[23] With this complete, the builder is ready to join the logs permanently. "The logs are jammed into position as close as possible, then with a hand saw the builder starts at one end of a seam and follows through it to the other end," according to Brewington. "The process is repeated until the logs fit from end to end in a perfectly matched joint."[24] The builder next drills holes into the seam of the keel log and into corresponding points into the seam of the garboard log and joins the garboards to the keel usually with iron bolts. The wing logs are then lined to the garboards in the same manner.[25](Fig. 4) To complete the bottom of the hull, the ends of the garboard and wing logs, where they do not reach the bow or stern, must be finished out. This requires the fitting of scrap parts of the hewn log to be joined to the aft and forward end of each log, continuing the log to the end. At the end it is tapered and bolted where it meets its corresponding

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[23]Chapelle, 296.

[24]Brewington, 10.

[25]Ibid., 10. Burgess, 3. Chapelle, 296-7.

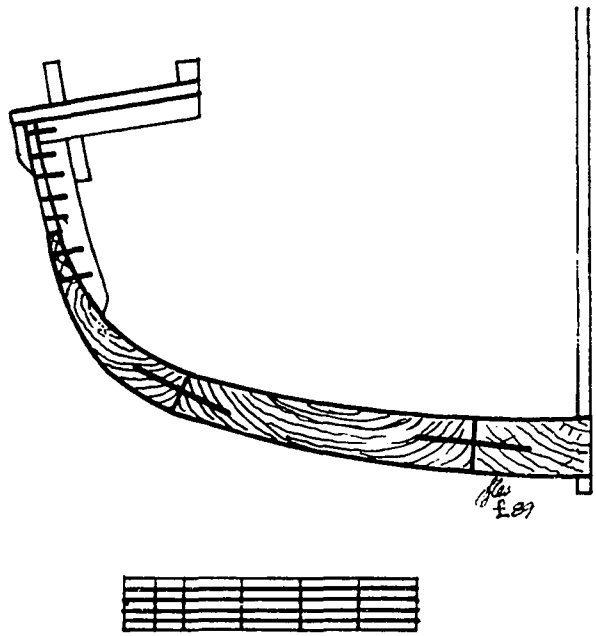

Figure 4. View of hull, showing location of logs and bolts.
Drawing of hull section of Margaret P. Hall, from drawing by H. W. Rust (Brewington, 140).

log from the opposite side. "Unless the canoe is made of extraordinarily large logs, a second tier of filler pieces is necessary to attain a proportionate depth," Brewington points out. "The builder tries to find two crooked trees whose bends will make a single top strake, thereby giving the canoe one continuous sweep of grain from stem to stern."[26] The builder finally smooths the hull down with a plane, both on the exterior and the interior. The bottom of the hull is now complete.

The next step in construction of the hull is to build the centerboard trunk around the previously prepared slot. The mast steps and seats must also be constructed into the hull. The addition of the washboard, or half-decking, finishes the hull. "The knees, natural crotches from the trees used in the canoe, are placed along the interior sides to support the washboards."[27] The washboards run the entire length of the hull, forming fore and aft decks where they meet.[28] With the knees nailed to the hull, the decking strips can be laid. The hull of the log canoe is now constructed and the canoe is ready for some finishing work as well as its masts and rigging. With the hull completed, the builder is now concerned with the most efficient layout

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[26]Brewington, 13.

[27]Burgess, 3.

[28]Chapelle, 297.

for his craft. The canoes have a very spartan layout for a boat of their size, space and hardware are used to their utmost efficiency.

Typical plan

The layout of two canoes, the Margaret P. Hall and the Jay Dee, are examples of the typical racing canoe plans. The author has sailed on the Jay Dee. A fine set of drawings on her, made in 1950, exist in Chapelle's American Small Sailing Craft.[29] The Margaret P. Hall, also possesses a very extensive set of drawings executed by the Historic American Merchant Marine Survey, which have been included in Brewington's Chesapeake Bay Log Canoes and Bugeyes.[30] (Figs. 5, 6)

The layout of the racing canoe is quite simple compared to other sailing craft of the same size. Of the normal equipment missing on these canoes are winches and deck cleats. Winches and cleats are used primarily in handling the sails. The winch serves to aid the crew handling the sheets and halyards of the sails. The lines are wrapped around the barrel of the winch, which takes the load, allowing the sails to be properly trimmed on any point of sail. Deck cleats serve to anchor sheets, halyards and other lines. There are cleats mounted on the masts to

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[29]Ibid., 303.

[30]Brewington, Plates XII A-XII G, 138-144.

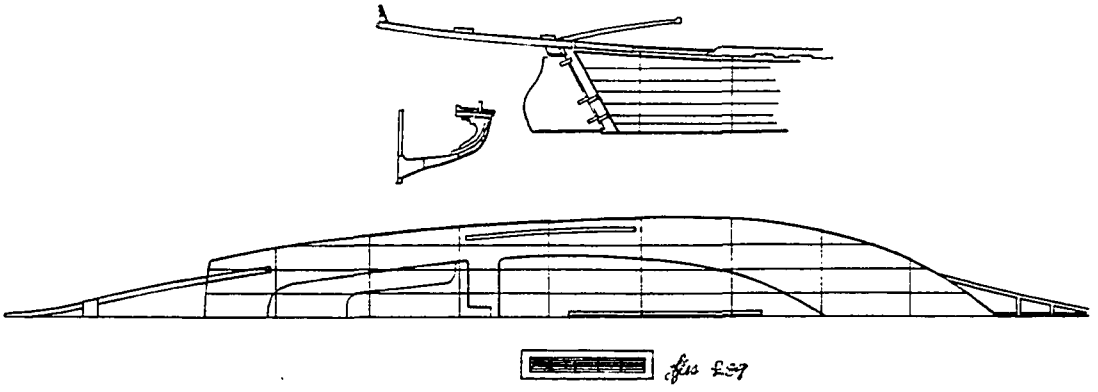

Figure 5. Layout of Jay Dee
From Howard I. Chapelle, American Small Sailing Craft, 303

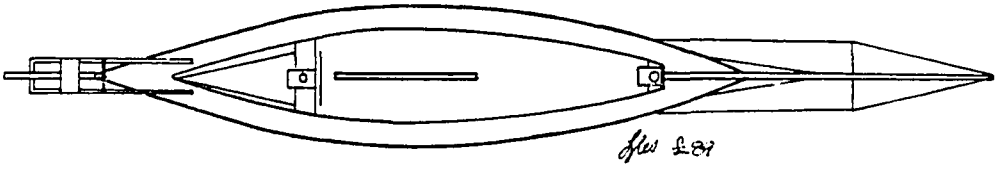

Figure 6. Layout of Margaret P. Hall.
From drawing by M. E. Shores (Brewington, 139).

anchor halyards, but rarely ever deck cleats (this will be further discussed in the next section dealing with the rig). Also not present are any compasses, depth gauges, aneometers, or other sailing aids usually found on craft these days. Thus, the racing canoes have a very clean and uncluttered design.

The only decking on the canoes is the washboard which is usually only 1'0"-1'3" wide, except where it forms the fore and aft decks. The rest of the canoe is open. On Jay Dee, and possibly on Margaret P. Hall, a small decked area exists around the aft mast, that is about 14"-16" wide. Located on the washboard, from the aft mast to about middle of the centerboard well, on the outside edge of the hull, are the outrigger chocks[31] or the rubrails. These rails, about 4" inches high, and about 1" thick, raise the outriggers off the deck and serve as the point from which they pivot. On the Jay Dee, the top part of the rail is bronze and takes a beating from the boards constantly being thrown across. To the forward end of the canoe is added a long bowsprit, usually between 6'0" and 12'0", depending on the size of the canoe. The centerboard well is where the centerboard is raised and lowered. On the Margaret P. Hall, the well lies further aft than it does on the Jay Dee. It is approximately centered in relation to where the greatest

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[31]Chapelle, 303.

amount of beam occurs in the hull. The widest beam on the Jay Dee, is more forward of midships than on the Margaret P. Hall. A rudder is attached to the sternpost, where two gudgeons receive corresponding pins on the rudder. Also constructed on the aft section is the outrigger. The crew member responsible for tending the mainsail works from about 6'0"-7'0" aft of the hull. The outrigger is firmly attached to the deck, and subsequently the hull, using iron straps. The foremast, the larger of the two, is located very close to the bow, approximately 5'3" on-center from the bow on Jay Dee[32]; and approximately 4'6" on-center from the bow on Margaret P. Hall.[33] The foremast is the only one of the two allowed, by rule, to be stayed.[34] Blocks of wood wedge the masts in place. On the Jay Dee, and several other canoes, the foremast is stayed to the hull. The masts support the enormous amount of sail canvas used on the racing canoes, which is the second component of the canoe system.

The Sailing Rig

"Their sails have been likened to the wings of birds, and indeed, the long, sleek ships appear to fly rather than to sail, their graceful bodies barely touching the waves," notes F. F. Kaiser.[35] Probably the most distinctive feature

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[32]Ibid., 303.

[33]Brewington, Plate XII A, 138.

[34]Vaughan, 7.

[35]Author F. F. Kaiser, quoted by Lila Line, "Chesapeake

of the racing canoes is the impressive amount of sail canvas, nearly 2,000 square feet, far more than on any other boat of the same size. The basic sail inventory consists of the triangular jibsail, and the leg-of-mutton shaped fore- and mainsails. To these are added kites, spinnakers, staysails, skysails, squaresails, and balloon jibs.[36] In lighter air, more canvas is added in order to be more competitive.

The three basic sails, and how they came to be on the log canoe, will be the first point of examination. The second point of examination will be to look at the additional sails and how they are used. As will be seen in greater detail in the next chapter, sails were not added to the log canoes until relatively late in their development. The original sail plan, in addition, was different from the plan that is used today.

The first sail plan for racing canoes was termed a "Bermuda rig," which, in its original form, consisted of two unstayed masts, raked sharply aft, each carrying a leg-of-mutton sail, without being attached to either a boom or a sprit.[37] (Fig. 7) Professor E. P. Morris believes the

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Bay Log Canoes," Chesapeake Bay Magazine, July 1984, 38.

[36]Valiant, 459.

[37]Brewington, 21. E. P. Morris, The Fore-and-Aft Rig in America (New Haven: Yale University Press, 1927), 106-9.

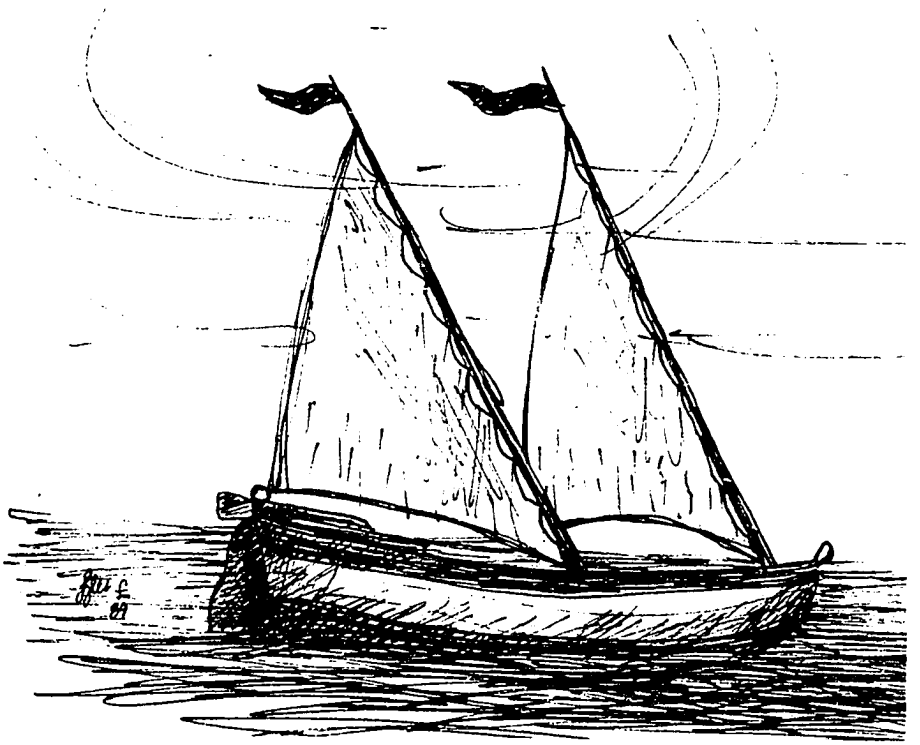

Figure 7. Bermuda rig, circa 1671.
From Morris, 107.

Bermuda rig developed from a traditional Dutch design on the island of Bermuda by a Dutch boat builder in 1671.[38] The rig may have also developed from the lateen rig, which has a long history on the Mediterranean, and found primarily on a xebec, or chebec.[39]

It is with this issue that the noted log canoe historian, Marion V. Brewington, disagrees. He maintains that the link with the Bermuda rig, as Morris describes, is difficult to confirm. He believes the sail rigs developed on the Maryland canoes much later than Morris does. "The known evidence indicates that sail did not come until late in the Eighteenth Century," he argues. "Just as the hull of the Maryland canoe has a number of variations, so has the rig. All of them undoubtedly originated from the same

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[38]Morris states that the boat builder was the survivor of a shipwreck. There, he built boats for the English, installing on them, a rig commonly seen in Dutch ports. Morris suggests that this rig made it to America by way of the tobacco trade with New England and Virginia. (Morris, 119-121).

[39]Royce, 276. The chebec was a craft used by the pirates of the Barbary Coast. The foremast was raked sharply forward, and the foresail was tied to a gaffboom and then raised by a halyard to the top of the mast. The gaffboom was raked aft. The main mast was also raked forward, but not as much, and the mainsail rigged in the same manner. Frederick Tilp states that, "it influenced the design of the Baltimore Clipper and succeeding types such as the pungy and bugeye. Maritime records indicate numerous xebecs were built on the Bay. Maryland Archives mention frequent visits of Royal African Company xebecs at Bladensburg and Annapolis, with slaves. American privateers found the xebec a remarkably fast vessel which carried an enormous spread of sail." Frederick Tilp, The Chesapeake Bay of Yore (Alexandria VA: By the author, 1982), 18.

sources"[40]

Sprits and clubs were eventually added to the foresail and mainsails, and a triangular jib added forward of the foremast. To incorporate the sprits and clubs, the shape of the foresail and mainsail had to be altered. Previously in the shape of a perfect triangle, the alteration severed off the aft angle making the leech of the sail parallel with the mast. A club was added to this part of the sail and supported by the sprit. The sprit was tied off tightly at the mast and inserted into the club by way of a pin which fit into a corresponding hole in the club. "This development took place about 1870-75 and the sail was known locally as a 'goose-wing'(Fig. 8). The name arose from the practice of clipping the points of the wings of live decoy geese."[41] The use of the sprit and club served to flatten the sail more when the wind kicked up.[42] "The club also has the effect of bringing the head and the foot of the sail in together when the sheet is hardened down," Ralph Wiley explains. "This results in a much better average trim for the entire height of the sail, and means that the sail is not sheeted nearly so hard as the conventional jib-headed

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[40]Brewington, 21-2.

[41]Ibid., 24.

[42]Ralph H. Wiley, "'Spreets' on the Eastern Shore: Tradition Vies With Science on the Chesapeake," Yachting, March 1936, 38.

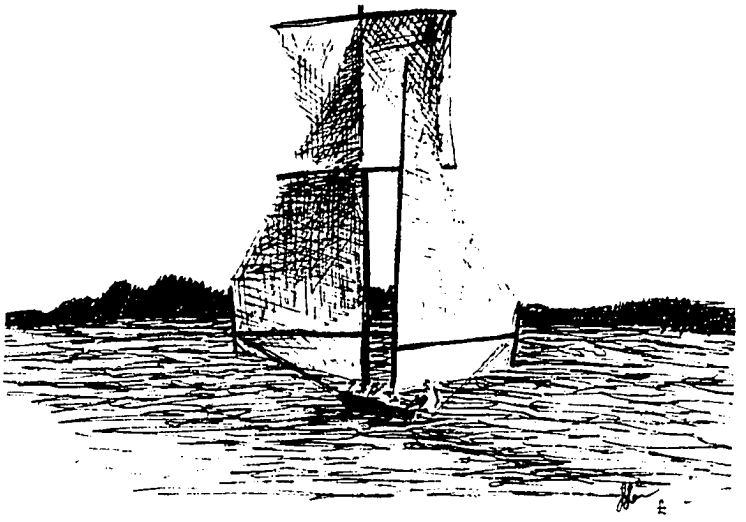

Figure 8. Example of "goose-wing" sail shape
From a M. E. Warren photograph, in "A Unique Tradition," 70

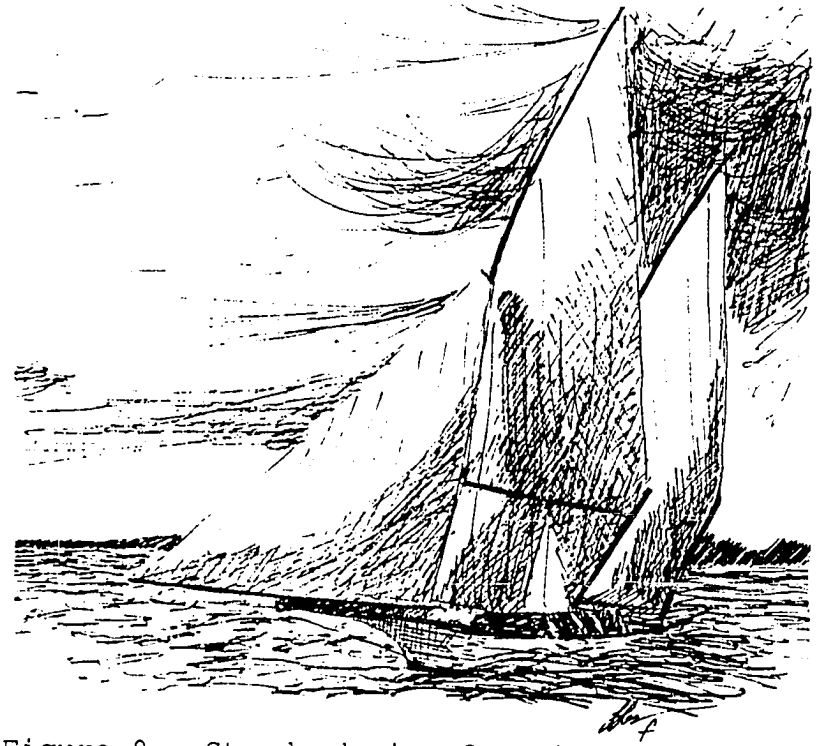

Figure 9. Standard rig of racing canoe
From a drawing by John Moll Jr.

sail."[43] When rigging the foresail and mainsail, the sprits are always placed on opposite sides of the sail. For instance, when the Jay Dee was being prepared for a race, the foresprit was placed on the starboard side of the sail and the mainsprit on the port side. Brewington adds, "On the fore the sprit was set on that side which would be to windward on the longest leg of a race; on the main the sprit was placed on the opposite side. This assures one properly airfoiled sail on either tack."[44]

The jibsail is a large triangular sail flown from the bowsprit and the foremast. As the foremast of the canoes may, or may not be anchored to the hull by a forestay and shrouds, the jib is held aloft by its halyard, and secured to the bowsprit by a balanced jibboom along the foot of the sail. The jibboom being balanced at the end of the bowsprit, causes half of the boom to extend beyond the bowsprit. "Imagine if you can a 34-foot canoe with a 27-foot jib club. The sail is set flying and the club, like the proverbial woman's tongue, is hung in the middle and is loose at both ends."[45] This type of jib was first used on the canoes in the late 1880's.[46] These three sails complete

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[43]Ibid., 115.

[44]Brewington, 87.

[45]Ibid., 116.

[46]Chapelle, 300.

the standard rig used on the canoes. However, several more sails are part of the inventory, used to grasp every breath of wind possible, and give the canoe more speed.

The auxiliary sails are used in light air conditions. More and larger sails are added if the winds are light, and can be doused if the breeze picks up. With the added canvas, the canoes become more top-heavy, and the possibility of capsizing increases. Each of the auxiliary sails is used at different times, to hopefully give the canoe the best advantage in the race.

The kite is a small triangular sail which is hoisted on the foremast. "Many of the kites are converted Sunfish sails, carried throughout the race."[47] When running off the wind on a reach, a staysail is rigged between the foresail and mainmast. On the Jay Dee, it is hoisted aloft from the mainmast, and the tack is secured under the washboards, just forward of the centerboard trunk. On a gybe, the tack is released, and passed aft in order to allow the foresail to be brought over, then it is passed forward and secured under the washboard. The large squaresails are used on one or both masts, and "are usually saved for the leeward legs."[48] The squaresails are only used in light air, and must be doused quickly if the wind picks up. The squaresail has a

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[47]"The Sporting World of Log Canoes," 162.

[48]Ibid., 162.

boom at the top and bottom of the sail, and is hoisted aloft on the backside of the mast. Of fuller cut and lighter material, the balloon jib is similar to a genoa and used in light air situations. The spinnaker is a large, lightweight sail used primarily for running downwind, or, on a broad reach. It is flown in light air as well.

Even without the auxiliary sails, the canoes are over canvased, meaning they carry more sail area than is necessary. The appearance of the canoes with sails set flying is a remarkable sight, one not soon forgotten. However, with the amount of sail area carried on the canoes, versus the size of the hull, a problem of counterbalancing exists. In sailing, to propel a craft, the sails act as an airfoil, such as the wing of an airplane. The airfoil, if created properly, will produce lift, thus pushing the craft forward. In order to counter the force of the wind on the sail, a equal or greater force of weight is needed. This is true only if the craft is headed to wind or on a reach, the fastest point of sail. In many sailboats a heavy lead keel, which extends from the bottom of the boat, is enough, even in rough weather. Also, in many sailboats, centerboards are used in the same way keels are. However, centerboards can be raised or lowered, keels are fixed. Thus, the centerboard alone may not be enough to balance the wind force. Ballast, then, is used as an aid in keeping the boat sailing properly. Human ballast, or crewmembers, keep their

weight on the weather side of the boat in a breeze, and to the leeward side in light air. In the following section, the author will detail how the system of counterbalance works, and serves as the mediating force between the shape of the hull and the amount of canvas displayed.

Counterbalance

Two forms of counterbalance are employed on the racing canoes. The first is the large centerboard, located along the keel log. The centerboard can be raised or lowered, depending on which point of wind the canoe is sailing. The centerboard helps reduce leeway during upwind sailing.[49] This means that without the board down, the force of the wind pushes the boat sideways instead forward. The centerboard provides lift as well, enabling the boat to point higher into the wind. In racing, the ability to point higher is sometimes an advantage. A boat which can point higher reduces the number of tacks that have to be made on the windward leg. Running down, or with the wind, the centerboard is raised, reducing drag, and allowing the craft to skim over the water. Dating to the 1850's, centerboards are one of the most important additions to small craft.[50]

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[49]Royce, 17.

[50]Chapelle, 38

[51]William H. Green, "Reviving a Dying Class: The History of the Chesapeake Bay Log Canoe," Yachting, August 1938, 38. and also in Vaughan, 10.

Robert Lambdin of St. Michaels, employed the first centerboard on a log canoe in 1857.[51] However, the centerboard alone cannot balance out the force created by the wind. In order to stabilize the craft, sailors use a system of outriggers.

The outriggers, also called springboards, are one of the most essential parts of the racing canoes.(Fig. 10) Crewmembers employ them to transfer their weight outboard of the boat in order to balance her.

> The springboards are heavy, 12' to 16' planks that butt against the inside of the hull to leeward under the washboards. They lever out against a rub rail on the weather washboard and stick out 7' or 8' over the water. Crewmen clamber out on these boards to balance the canoe while sailing.[52]

As the racing canoes sail best when they are heeled about 10 to 15 degrees, it becomes the crew weight, always moving in and out, trying to maintain the proper angle. Therefore, precision teamwork from the boardmembers is the key in racing these craft. Perhaps where this is most evident is in putting the canoes over on a new tack. In most small sailing craft, the tack is a fairly simple procedure. But on the racing canoes, the tack is a highly orchestrated maneuver, and whichever canoe is the quickest and most precise usually finishes well. Roger Vaughan best

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[52]Vaughan, 7. Also described in: Brewington, 27. Chapelle, 295. C. S. Manegold, "The Peculiar Appeal of the Log Canoe." Philadelphia Inquirer, 8 July 1984, 18. "The Sporting World of Log Canoes," 156.

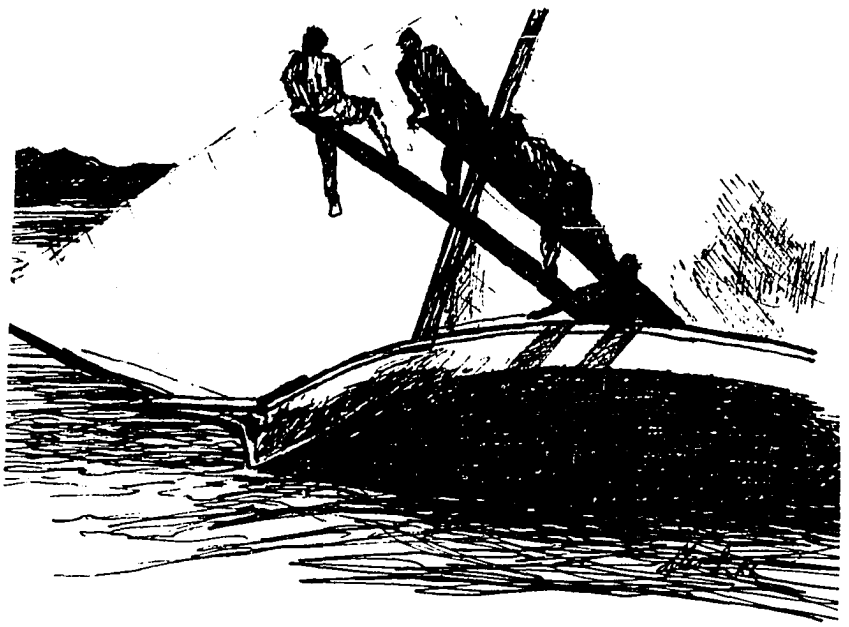

Figure 10. Crewmembers attempting to counterbalance the wind force upon the sails.
From a photograph by Eric Poggenpohl
(Vaughan, 7)

explains the tack, in relation to the boardsmen, stating:

> Part of the fun, not to mention exercise, in log canoe sailing is smooth crew work with the heavy planks that keep these hulls on their feet or close to it. In tacking or jibing, the three and sometimes four boards must be cleared of personnel, pulled out from where the fit against the underside of the covering boards as the boat comes through the wind (without catching the ends in the water), repositioned under the new rail, then reoccupied with scrambling crew members as the canoe fills on the new tack.[53]

Certainly, being a board member is not an easy job, but there is no better place to view a log canoe race than from on the end of a springboard. It is this component, then, that mediates between the hull and rig, allowing the canoes to reach amazing speeds. When one system is "out-of-balance" with the others, unless quickness prevails and the situation remedied, capsizing is likely. Most often it is sudden gusts of wind that catches skipper and crew off-guard, with too much canvas; other times it is poor crew work. Canoe racing is about balance, literally and figuratively. Balance must be maintained in order that each component of the "system" is kept functioning to its optimum. And, human ballast is one of the key components in this system.

The canoes offer one of the most exciting and unique experiences available from any sailing craft. There is a blend of tradition and technology, the by-product of which

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[53]Vaughan, 7.

is a pure racing thoroughbred.[54] The canoes are as awe-inspiring to watch as they are to sail. Few sailing craft exist which can match the skill, excitement, and artistry of the racing canoes. In the following section, the author will examine how the canoes perform under racing conditions, detailing how the three components function as a system.

Performance

"They are as much phenomena of the American Dream as they are sailboats. When they race," observed Randall Peffer, "well imagine that the 1928 Indianapolis 500 were staged on the L. A. Freeway and each racer were pursued by a festive pack of loyal fans."[55] There is never a boring moment, even in the slightest of breezes. Skipper and crew are always striving for the maximum speed from their craft. Every part of a race, the start, each tack, crossing tacks, rounding the marks, and covering the opponents is an orchestration between skipper, crew and craft. As E. T. Valliant so bluntly remarked, the racing canoe is not a craft for "Mr. Rocking Chair Skipper."[56] (Fig. 11)

The start of a canoe race is quite like the start of any other class of sailing craft: finding the favored end of

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[54]Chapelle, 304.

[55]Randall Peffer. "Log Canoe Racing." Sail, October 1975, 109.

[56]Valliant, 457.

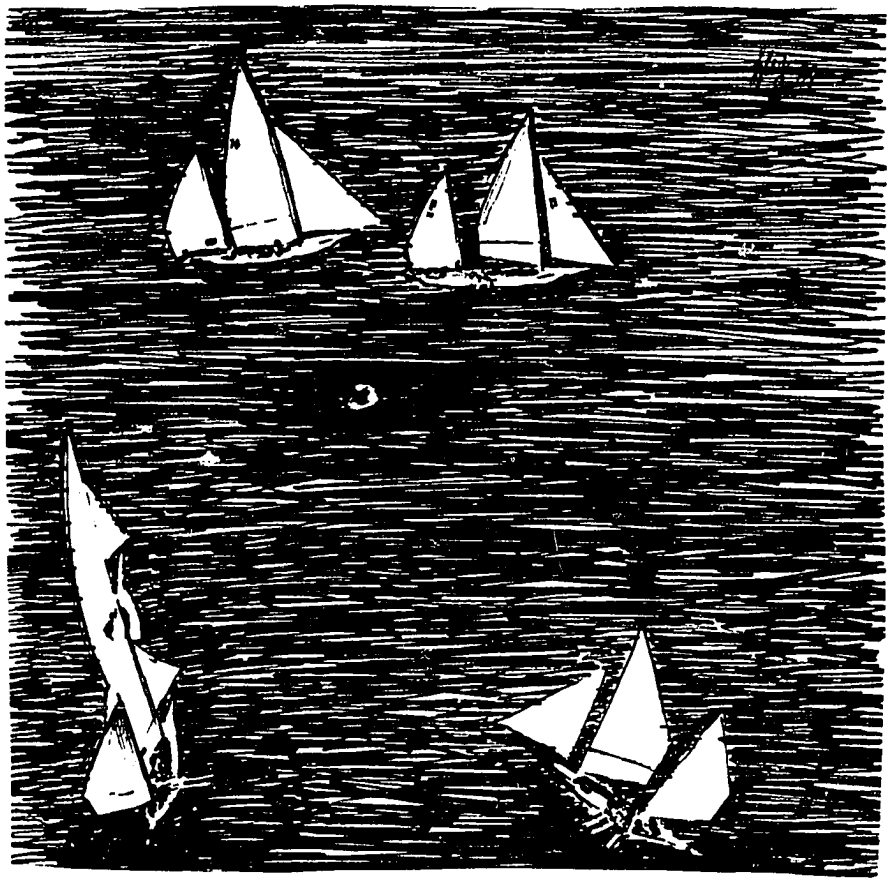

Figure 11. Canoes shown rounding the mark.
From a photograph (Preston, 259)

the starting line, jockeying for position, and getting the boat across the line clean and ahead of everyone else. The only difference is in the size of the boats. With ten or eleven craft, averaging around 35' in length with bowsprits and 14' in beam with outriggers, jockeying for position at the starting line can be a very harrowing experience. Once the start gun has sounded though, it is an all-out sprint to weather, and the first mark. Canoe performance to weather is impressive. The shape of the hull, and its shallow draft, allow the canoe to point up fairly high into the wind, much higher than other craft her size. As the canoes sail best with a slight heel of 10 to 15 degrees, it is the responsibility of the crew to maintain that angle by shifting the weight in- or outboard according to the wind. "A good crew knows instinctively when to move in and out on the boards. Although success or failure depends largely upon the rigging, crew, sails, and masts, experience plays the most important role."[57] William H. Green, founder of the Chesapeake Bay Log Canoe Sailing Association, describes canoe performance to windward:

> One of the characteristic features of the log canoe is its ability to curve into a favorable flow of wind with sails fluttering, continuing for an unbelievable distance without perceptibly losing speed. This facility is due to the momentum-sustaining weight of the boat and to a lesser degree to its slight underbody. It is a fascinating and thrilling sight to watch a skilled

> skipper and crew take a canoe to windward in a series of curves, falling away at just the proper time while the board riders are continually sliding in and out from side to side.[58]

In most instances, at least one tack will be necessary for the boat to make the first mark. A tack is the course, or direction, a boat is following. For instance, a boat on starboard tack has the wind coming over the starboard (right side, if facing forward) bow, beam, or quarter.[59] Tacking involves bringing the craft across the wind to a new course, and in a log canoe this is no simple feat.

Tacking the Jay Dee, as with any canoe, requires a gargantuan, but precisely executed, crew effort. To begin the tack, the crew came in off the boards and found a spot in the hull to stand. The Jay Dee carries four boards, and this particular day, there were two crew for every board. When the crew comes inboard, they face aft. With only about 12" between each board, there was not much room for eight people to heave the large boards across, much less stand. Upon command from the skipper, the leeward person pulled the board out from under the lee gunwale, while the person to windward kept it from going in the water. As the canoe comes across the wind, all four boards are tossed quickly to the other side, being careful not to let the boards dip into

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[57]Line, 38.

[58]Green, 27

[59]Royce, 98.

the water and slow the tack. Once the boards are across, the new leeward crew wedge the board under the lee gunwale and push the outward end aft. The new windward crew are already scrambling out to flatten the boat on her new tack. While all this is occurring, all of the sails are coming across the boat to their new positions, and filling. In rough weather, this exercise has got to be done very quickly in order to get weight outboard and flatten her, to avoid capsizing. The excitement is heightened even more when two canoes cross tacks in close quarters. Added to the din of boards being tossed, canvas luffing, the swearing, and orders being shouted are the shouts of who has right of way, or for the other craft to hold her course. All of these different events combine to create the excitement and lure of canoe racing.

Running off or downwind brings some rest from the rigors of tacking. Aboard Jay Dee, the sails were either split side-to-side or on one side, depending on the angle of the wind. The boards are laid across the beam of the boat, and the weight kept mainly to leeward. The staysail and others are hoisted to gain as much drive as possible. Several of the crew also head aft, to counterbalance the weight on the sails, pushing the bow into the water, and hence, slowing the boat. Beer, sodas, and candy bars are usually taken in during the downwind leg to provide the needed stamina for the final upwind leg to the finish. The

racing canoes offer an amazing experience for those who have the opportunity to sail them.

Racing History

The racing log canoe has had a very colorful and eventful racing past. With its origins in workboat races to market, canoe racing soon became the premier racing craft on the Chesapeake Bay. When the gasoline engine was added to workboats, it signified the end of the sailing era, and many of the canoes were left derelict, nearly to the point of extinction. However, a few enthusiasts of canoe racing were able to revive the regattas and the craft before the Second World War. The canoes have continued to thrive and, since the 1960's, become popular once again.

Origins

There is no fixed date on which canoe racing formally began, other than sometime in the middle of the nineteenth century.[60] Racing, for the most part, occurred

[60]There is a discrepancy about when the first organized races were held. Marion Brewington states that the first organized races were being held by 1840, off St. Michaels in the Miles River (Brewington, 27). However, one of the most prominent canoe builders, Robert D. Lambdin, writes that the first race was held in August, 1859, in the Miles River. It was sponsored by Thomas Oliver, who awarded a silver cup to the winning canoe and a tin cup to the canoe in last place. Five canoes were entered in the race, all of which were keel canoes, because the centerboard had not yet been employed. Lambdin later states that he bought the keel canoe, Mary, a 30' three log canoe from George Goodall of Washington D. C. in 1872. He had her hauled out of the water and installed the first centerboard on a canoe ("The Origins of Log Canoe Racing: A Memoir of Robert D. Lambdin," Chesapeake Tally, No. 2, Summer 1977, 2). There is also, then, discrepancy

spontaneously and informally. The races were not between the racing canoes, per se, but among the sailing canoe workboats. The log canoes were primarily used as boats for tonging oysters because of their shallow draft, and lack of freeboard. It is believed that racing began quite simply, between oystermen attempting to get their catch to market for the best prices.[61]

> Racing began a long time ago when everybody was still using these boats for oystering. At the end of the day, when everybody was ready to head in from the oyster beds, each boat would pin a dollar on their sail. They'd all bet. . .Then the guy who won would go around and pick up all the other guys' dollars. Plus, he'd get the best price for his catch.[62]

Racing to and from the oyster beds developed into a very heated competition. Eventually, races were held on the weekends, without the burdening weight of the oyster catch.

The first formally organized race was probably held in 1859, in the Miles River.[63] Five canoes participated in the

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with the date of 1859, because Lambdin, supposedly installed the first centerboard in a canoe, at St. Michaels, in 1857 (Green, "Reviving a Dying Class," 38).

[61]Brewington, 27. Gloria Chamberlain, "Designed of Speed and Built for Racing, the Log Canoe is a True Chesapeake Celebrity," Chesapeake Bay Magazine, May 1989, 61. C. S. Manegold, "The Particular Appeal of the Log Canoe," Philadelphia Inquirer, 8 July 1984, 22-3. "Chesapeake Log Canoes," Woodenboat, November-December 1978, 10. Vaughan, 22.

[62]Jim Smith, quoted by C. S. Manegold, 22-3.

[63]William H. Green, in 1936 wrote, About 1840, when sail became universal on the canoes, impromptu racing began on the way to and from the oyster grounds. Rivalry finally produced the first organized race on Miles River, in 1859,

race, Thomas Oliver's entry came from the Poquoson River area of Virginia while the rest were from around the St. Michaels and Talbot County area of Maryland. All of the canoes were about 30' in length except the Douglas, a canoe from St. Michaels. Oliver's canoe won the race, with the Douglas finishing a close second. As Thomas Oliver was the sponsor of the race, he awarded the silver cup to Samuel Harrison, who had sailed the Douglas.[64] The races were soon halted due to the Civil War, "but log-canoe boatloads of southern adherents kept sharp by racing Yankee gunboats to Confederate lines,"[65] and resumed when the conflict was resolved. Canoe races became a standard Fourth of July diversion, with competitions held on the Miles River, the Tred Avon River, or off Kent Island.[66] The races proved to be very exciting, for both competitor and spectator. Instead of the usual run-to-the-line start, the canoes began with a beach start:

> The contestants hauled the sterns of their canoes upon the beach; sail was taken in and furled, and the crews went ashore. On a signal, all hands rushed for their canoes, shoved off, fixed their rudders, made sail, and set out. The wild melee made by such a start can be readily imagined: upset canoes, tangled gear, and high language.[67]

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when a number of boats raced for a silver cup (Green, 38.) See also reference note 60.

[64]"The Origins of Log Canoe Racing," 2. Green, 38.

[65]Vaughan, 11.

[66]Green, 38-9.

The competition between canoes was fierce, and by the 1880's, led to the evolution of canoe into a model used solely for racing.[68] It would be in the last two decades of the nineteenth century that the canoes achieved their greatest popularity, and were firmly established as a premier racing class.

Heyday

The 1880's saw the development of the racing canoe as we know it today. "Racing was so popular that purely racing models were fashioned with much thinner logs and of lighter construction throughout."[69] To maintain a competitive edge, sailors tried almost anything. The rig was outrageously expanded from the normal amount on the workboat canoes. The beam, in relation to the overall length, was narrowed in order to make the hull knife through the water. The height of the masts were also raised in order to carry more canvas. "The thing that's so hard to realize now is that when these boats were first built, they didn't carry all that much sail," noted Jimmy Smith. "The Island Image, for example, when sailed as a workboat carried masts of 17 and 25 feet in height. Those same masts today measure 34 and 40 1/2 feet."[70]

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[67]Brewington, 27.

[68]Green, 39. Vaughan, 10.

[69]Green, 39.

[70]Jim Smith quoted by C. S. Manegold, (Manegold, 23).

In 1885, racing became more formally organized under the auspices of the Chesapeake Bay Yacht Club.[71] A system of handicapping for time was created, "allowing six seconds per foot of length of boat per mile of course."[72] This made the smaller canoes competitive with the larger ones. Today, short races hamper Jay Dee, because she owes so much time through handicapping to the smaller canoes. The wild starts of previous regattas were exchanged for a standing start. This became another form of handicapping which allowed the slower boats to start first, followed by the larger boats, and the first boat to cross the line was the winner.[73] The first trophy awarded by the yacht club was the Anchorage Cup in 1897. The Cup had to be won three times in order to permanently own it. Island Blossom was the first to finally win the Anchorage Cup in 1901.[74]

The competition in these last two decades of the nineteenth century, owed much to the rough back-to-market races between the workboats. Watermen had a need and desire to prove that his boat was superior to the rest.[75] This attitude, among each of the competing owners, skippers, crew

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[71]Brewington, 28.

[72]Brewington, 27. Green, 39.

[73]Ibid., 28.

[74]Ibid., 28. Green, 40.

[75]Jeffrey R. Welsh, "The Fascination of the Log Canoe," Baltimore Sun, 10 September 1978, 1.

and fans, usually led to more than friendly sailing races. The contest on the water was, in some cases, far from sporting. Occasionally, buckets were wired to the competitors canoe in order to slow him; or if he luffed to close, someone would cut his halyards.[76] N. T. Kenney writes,

> It often happened that mayhem and such was committed in a hard brush. When excitement was high, and the stone jug of rye had done its work and the springboard men were high in the air over the afterguard of a winning rival hard by to windward, then sometimes chunks of stone ballast flew, and spare clubs and sprits waved, and men came back with bloody heads.[77]

Log canoe racing was immensely popular with the watermen and with those who avidly followed the races. At its height, the racing was loaded with excitement. However, due to the conversion of many workboats to the gasoline engine around the turn of the century, canoe racing declined, and nearly disappeared.

The decline in the use of sail for fishing craft signaled the apparent end of canoe racing. But the excitement and the spectacle these craft provided in their Heyday would not be forgotten, and this spirit would eventually be revived.

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[76]Green, "Building, Rigging, and Racing a Log Canoe," 27.

[77]N. T. Kenney, "The Bay Canoe Comes Back," Rudder, October 1937, 54.

Decline

The decline of the racing canoes was due directly to the addition of gasoline-powered engines to workboats. Many of the racing canoes, and even more which were not racing craft, were still used as workboats.[78] In order to stay competitive in the fishing and oystering business, many of the canoes were outfitted with the engines. When the sail rig was at its peak in the 1850's, approximately 6,000 canoes sailed on the Bay.[79] Builder Robert Lambdin of St. Michaels, probably built 68 canoes between 1865 and 1894.[80] But by 1903, not a single log canoe was being produced, and would not be for several years.[81] From 1903 until 1924 the canoes would race only sporadically, and then, only in small numbers.

The great canoes, which had provided such a spectacle a few years earlier, were now almost extinct. Many had been converted to power, those that had not were left derelict to rot. Had it not been for several avid canoe sailors who persisted in reviving the class, they surely would have

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[78]Green, "Reviving a Dying Class," 40. Vaughan, 11. Welsh, 1. "Chesapeake Log Canoes," 10.

[79]Gloria Chamberlain, "Old Log Canoe Given New Life By Devoted Fan," National Fisherman, March 1978, 15-c.

[80]Brewington, 29-30. "The Origins of Chesapeake Canoe Racing," 1.

[81]Lila Line states that after the discontinuation of the races in 1903, there was not another sailing canoe built as a workboat until 1933 on Tilghmans Island (Line, 39).

passed into extinction.

Revival

Reviving the racing class was a slow but determined process. New interest in the 1920's and 1930's brought back not only the great canoes but the excitement of old and new rivalries.

Since 1913, when the Miles River Yacht Club was formed in St. Michaels, the remaining canoe sailors had continued racing in club sponsored regattas. Throughout the latter part of the decade, and into the twenties, the canoe fleet remained small, but began to expand. By 1924, the time was ripe for the Miles River Yacht Club to begin sponsoring regular canoe events.[82] The commodore of the yacht club at this time was Captain William H. Green,[83] who is credited with reviving the racing canoes.[84]

William Green was most instrumental in establishing the Governor's Cup, in 1927. To promote interest in canoe

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[82]Brewington, 28. Green, 40. Line, 39.

[83]The same William Green who penned the articles, "Building, Rigging, and Racing a Log Canoe," and "Reviving a Dying Class: The History of the Chesapeake Bay Log Sailing Canoe," cited in this work.

[84]The editor of Yachting wrote in the August 1936 issue, that, "Commodore Green merits the applause of all sailing enthusiasts, especially those in Maryland, for his part in the revival of the Chesapeake Bay log canoe. When, twenty years ago, he began his task, the log canoe was fast following the Baltimore Clipper and other famous vessels into oblivion. Today, log canoes are being raced, new ones being built, and the class has taken a new lease on life." (Green, 38).

racing, he organized a fund raising campaign to purchase a large silver bowl. The trophy was to be awarded every year, for a race held the first weekend in August. It was arranged that the Governor of Maryland would award the trophy each year.[85] "This stupendous bowl. . . would be awarded to the winner of one, specific, normal-length race. Even the America's Cup is four out of seven. But the Governor's Cup is a one-shot deal, the Super Bowl of Canoe Racing."[86] Magic, won the first Cup, awarded in 1927 by, then-Governor, Albert Ritchie.[87] This regatta sparked great interest, and was the first major step in renewing the canoes to their previous stature.

In 1931, John B. Harrison built the transom-sterned Jay Dee, drawing immediate criticism from canoe traditionalists. Apart from the non-traditional stern, Harrison had moved the beam further aft, enabling her to carry larger masts and a larger rig.[88] (Fig. 12) The following year, Harrison built Flying Cloud, the second of the transom-sterned canoes. Designed to be faster than her sister, Jay Dee, Cloud was not always successful.[89] (Fig. 13) Both craft were very

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[85]Brewington, 28. Burgess, 3. Green, 40. Line, 39. Vaughan, 11.

[86]Vaughan, 11.

[87]Green, 40. Vaughan 11.

[88]Chapelle, 301-2. Line, 38-9. Vaughan, 11

[89]Chapelle, 302.

quick, beating the smaller canoes handily. The transom-stern provided the two canoes with a much more efficient hull design. The flat stern allows for better rudder performance than on the sharp stern canoes. When combined with the larger rigs, the transom-sterned canoes were virtually unbeatable. Their subsequent inclusion into the fleet led directly to the creation of the Chesapeake Bay Log Canoe Association in 1933.

The traditionalists argued that the two craft were, in fact, log boats rather than a canoe.[90] The Association feared this kind of development, which they felt endangered the sport. Thus, rules were devised to discourage building of more craft like Jay Dee, and Flying Cloud. Both boats were banned from competing for the Governor's Cup. The new rules now clearly stated that, the boats "must conform to the identical appearance of the old original three or more log Chesapeake Bay Log Sailing Canoe and must be sharp at both ends, above, and below the waterline."[91] In 1934, the owner of Flying Cloud, changed to a sharp stern in order to compete for the Cup. Cloud brought the Cup home that same

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[90]John G. Earle, "The Chesapeake Bay Log Canoe Magic," Yachting, January 1934, 80.

[91]William H. Green includes a copy of the "Conditions For the Governor's Cup Race," in the article, "Building, Rigging, and Racing a Log Canoe," (Green, 26).

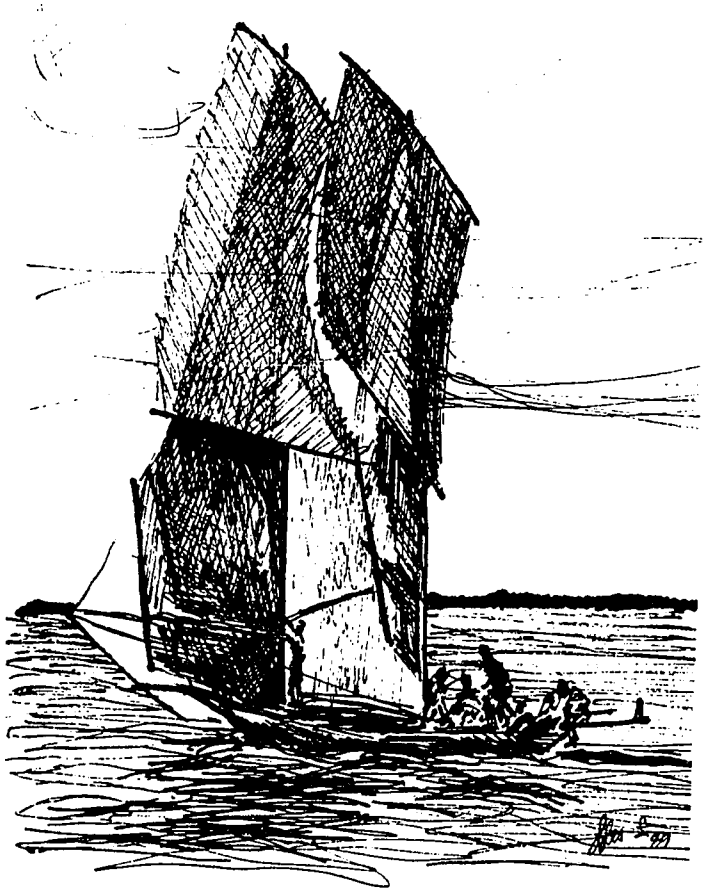

Figure 12. Jay Dee running downwind.
From a Hollyday photograph (Brewington, 86)

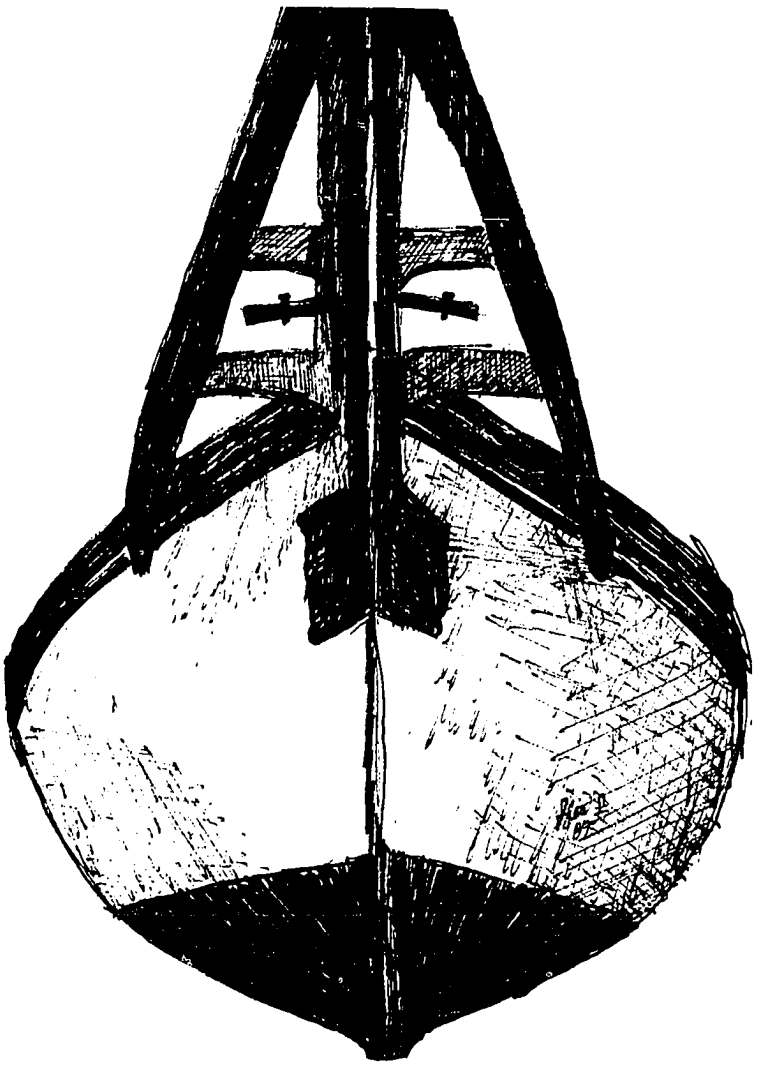

Figure 13. Bow of Flying Cloud.
From a photograph (Burgess, 7)

year.[92]

Two new trophies were created for the canoes, the Covington Prize, and the John B. Harrison trophy. Racing for the Covington Prize, named for Sidney Covington, builder of Island Blossom, Island Bird, and Island Belle, is limited to canoes built before 1917. The Harrison trophy, named for the builder of Jay Dee and Flying Cloud, is limited to canoes built after 1917.[93]

Canoe racing continued to grow as new rivalries were established and new canoes were built.[94] Racing was halted, however, with the beginning of the Second World War, and did not resume in Maryland until the late 1940's.

Virginia

That canoe racing is closely identified with the Eastern Shore of Maryland is due to the efforts to revive the craft in the 1920's. However, Virginians had also been racing canoes in the early days, even contesting the canoes from Maryland.[95] But, after the devastation caused by the

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[92]Mary Swaine, "'Flying Cloud' Being Restored," Soundings, October 1981, C4. Vaughan, 11.

[93]Brewington, 28. Line, 39.

[94]Harry Sinclair built Mystery in 1933, at Oxford (Vaughan, 11); and Edmee S., now owned by the Chesapeake Bay Maritime Museum, was built in the late 1930's.

[95]The first canoe race was sponsored by Virginian, Thomas Oliver, from Poquoson. His canoe actually won the race, held on the Miles River, even though he awarded the cup to the skipper of the Maryland canoe, Douglas. ("The Origins of Log Canoe Racing," 2).

gasoline powered engines, interest in reviving the canoes was not as strong as it was in Maryland. The Hampton Yacht Club sponsored events for the canoes in the latter part of the 1920's and into the 1930's. The Poquoson-style canoe, detailed in the following chapter, was the type used for racing in Virginia. Even though canoe racing was not as popular in Virginia, great rivalry between different canoe builders still existed. The height of the rivalry came in 1938 at the Log Canoe Championship. The August 13 regatta was held at the Tred Avon Yacht Club, in Oxford, between the Maryland canoe, Flying Cloud, and the Virginia entry, Tradition.[96] With the coming of the Second World War, the Virginia interest waned, and only a lone Poquoson canoe, Kaynoo, occasionally participated in races.[97]

Recent

The canoe races were slow to revive after the Second World War. William Green revitalized and redefined the Association in 1948,[98] but the fleet grew to only a handful of boats until the late 1960's, when widespread interest saved the canoes once again from demise. Old hulls were

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[96]Ralph H. Wiley, "Maryland vs. Virginia: The 1938 Log Canoe Championship," n.pub., August 1938, 49, 60.

[97]Burgess, 4. F. F. Kaiser, "Century-Old Log Canoe Stirs Memories of Ex-Owner," National Fisherman, February 1978, 12-c.

[98]N. T. Kenney, "Renaissance of the Chesapeake Log Canoe," The Chesapeake Skipper, April 1948, 13.

restored and given new life, and there were even plans for new canoes to be built.[99]

In the 1980's canoe interest has continued to expand. Each summer, the Association schedules ten weekend regattas for the canoes. Races are held at Rock Hall, St. Michaels, Oxford, and Cambridge. There are usually ten to twelve canoes that compete each year. The races still draw large crowds of spectators and fans. As the canoes sail the course, in tag is a large spectator fleet, armed with video and SLR cameras to record the great canoes. Perhaps one of the most interesting features of the racing class in the 1980's is the fact that canoes built in the 1800's are still performing today. Yet it is not simply that they are still racing, but that they remain competitive with the later built boats, partly due to the handicapping rule, but mainly because of their design integrity and longevity.

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[99]Oliver Duke built Oliver's Gift, in 1941; William Hanlon built Faith Hanlon, in 1976 (Welsh, 1); John Chamberlain built Tenaceous, in the late 1970's (Chamberlain, 63); and Sidney Dickson built Spirit of Wye Town, in 1976 (Reppert, 12, 27). Nearly a dozen more were restored, including: Rover, Sandy, and Persistence. There is also a set of logs, hewn by Oliver Duke, waiting to be assembled, to be named William H. Green (Welsh, 1).

CHAPTER THREE

THE RACING LOG CANOE AND ITS EVOLUTION ON THE CHESAPEAKE BAY

This chapter will examine the heritage and evolution of the log canoe, from the aboriginal canoes used by the Bay Indian tribes to the sailing canoes used for the purpose of commercial fishing. It will also look briefly at how the canoe diversified and served as the basis for other types of watercraft used on the Bay. Understanding the evolution of the racing canoe relates directly to the changing economic, technological, social, and cultural needs and uses of the canoe over time and the ability of the craft to meet those particular needs and uses. This chapter is divided into three sections. The first section will deal with the origins of the log canoe on the Bay, and early developments. The second section will deal with the development of the multi-log canoes on the Bay, focusing on three particular types that were developed. The final section will deal with how the log canoe diversified and influenced the shape, form, and construction of other Bay craft. Through this chapter, the author hopes to present the taxonomy of the log canoes as they have developed on the Bay and provide a context for better understanding of the tradition and design of the racing canoe.

Origins.

On the Bay, the log canoe has its origins as an aboriginal craft. It is not known when the Indians first developed the boat. Dugouts were seemingly prolific, and the Indians, quite adept in handling them. The dugout of the Indians was a very crude craft (Fig. 14). It was, simply, a section of the trunk of a tree which had been hollowed by hand. Thomas Hariot, a scientific advisor to Sir Walter Raleigh, made the first description of these craft in 1584.[100] In his report, Hariot makes accounts of the different types of wood available for boat building and briefly describes how the Indians built their canoes.

> *Rakiock*, a kind of trees so called that are sweet wood; of which the inhabitants that were near unto us do commonly make their boats of canoes of the form of troughs, only with the help of fire, hatchets of stone, and shells. We have known some so great, being made in that sort of one tree, that they have carried well twenty men at once, besides much baggage.[101]

Several more entries, following Hariot's visit, were written by visitors to the New World. In each account, the process is basically the same from Maryland to North Carolina.[102] The following description is based on several

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[100]Brewington, 1. also Richard Hakluyt, "Hariot's Brief and True Report," Voyages to the Virginia Colonies (London: Century Hutchinson Ltd., 1986), 107-136.

[101]Hakluyt, 124-5.

[102]Christoper Newport and Bartholemew Gosnold sailed with John Smith, describe a "Cannow which was made out of the whole tree, which was five and fortie feet long" (Armstrong, 126). William Strachey described the methods of

accounts.

The first step was to select the tree to be used and to fell it. The Chesapeake was very plentiful in large trees that could be used for shipbuilding. The tree was felled by starting a fire at its base, controlling the flame with mud, dirt, or water. Once the tree was felled, work began where it lay. The tree was chosen was for its width and length, and, as the trees were very heavy, only ones standing near shore or within a very short distance were chosen. Work began on the tree usually where it came to rest. The next step was to burn the ends of the trunk to the decided length and to remove the remaining branches from the trunk. The Indians used oyster shells and scraped the bark from the trunk. Once the bark was removed, the process of burning and scraping was used to form the interior of the canoe. The Indians lit a fire along the length of the trunk,

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the Indians around Jamestown In 1610; Richard Hakluyt also includes a description of Indians in North Carolina in the Principle Navigations, Voyages, Traffiques and Discoveries of the English Nation, Vol. XIII, Part VI (Alexander Lavish and George Surgent, Early Chesapeake Single-Log Canoes: A Brief History and Introduction to Building Techniques, Solomons MD: Calvert Marine Museum, n.d.). However, many historians feel that the most descriptive account is provided by Theodore De Bry, in his Grands Voyages, written in 1590 (Brewington, 1); Burgess, "Dugout Log Canoes," Virginia Cavalcade, Winter 1966, 14; _____, "Carving of a Log Canoe," Naticnal Fisherman, July 1971, 4-b, 5-b; _____, "Log Canoes," Chesapeake Sailing Craft (Cambridge MD: Tidewater Publishers, 1975), 1-2. Captain John Smith is also noted as having described the Indian vessels (Brewington, 1-2); Burgess, Chesapeake Sailing Craft, 1-2; Raphael Semmes, Captains and Mariners of Early Maryland (Baltimore MD: The Johns-Hopkins University Press, 1937), 80-81; Tilp, 8.

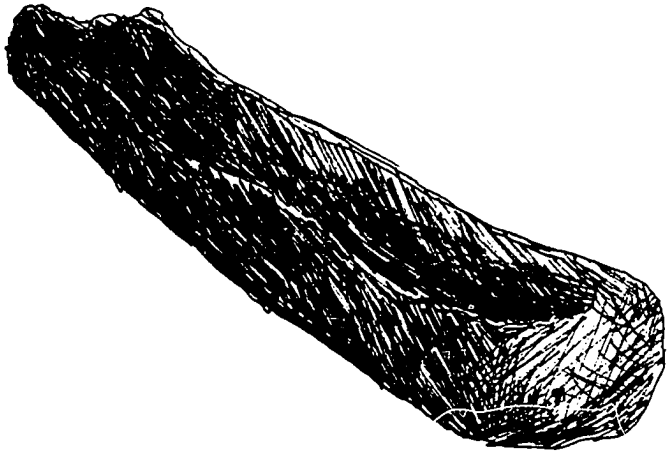

Figure 14. Indian dugout.
From photograph (Burgess, 15).

controlling the flame from spreading beyond the desired width. The fire was soon extinguished with water or dirt, and the coals and ash were scraped off using either oyster shells or stone. Once the scraping was complete, the area was again set afire. This process continued until the desired depth was attained. The burn and scrape method was also used to shape the ends of the canoe, making them blunt. When completed, the huge canoes would usually hold between 25 and 40 men, depending on the length. To propel the canoes, the Indians used either long poles or paddles.

As the number of white settlements began to grow in the seventeenth century, it became necessary to have some form of transportation and communication between villages. Upon their arrival and settlement on the Chesapeake, the colonists were isolated, except by watercraft, not only from England, but from other settlements as well. They had come ill-prepared to build boats, having no boat builders in the initial settlements, and had to adopt the Indian dugout in order to survive.[103] This adoption was not the preferred choice for the settlers, as Brewington states, "surely few of the dominant race ever admit that some poor savage's implement is better than their own. Its use was brought on by sheer necessity."[104] Not only did this provide a means

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[103]Brewington, 2-3.

[104]Ibid., 2.

of communication and transportation for the colonists, it also allowed them to begin fishing the Bay for an increased food supply. This, then, was the introduction of the canoe to the colonists, and it would soon lead to the next stage in its evolution.

Boat builders were among the many new settlers coming into the Chesapeake. And with the beginning of the tobacco industry, the need for and improved transportation system arose, thus providing the impetus for the first development of the canoe by the white man on the Bay. Where the Indians had used fire, oyster shells, and stone to forge the canoe, the boat builders brought with them tools of the shipbuilding trade, especially the axe and the adze. These tools would allow them to work the hull of the canoe faster and also allow them to tailor the shape of the craft.[105] The first innovation to the canoe was in shaping the ends. Previously the canoe had a rounded or blunt end. The boatwrights began giving shape to the bow and stern, increasing the performance and maneuverability of the canoe.[106] William A. Davis states that the bottom of the canoe was shaped by eye, planed smooth, and that seats were added to the interior. He also states that the colonists devised a way to keep the ends of the canoe from cracking

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[105]Burgess, 5-b. Lavish, 6.

[106]Brewington, 3. Burgess, 5-b. Lavish, 6.

and splitting, caused by being dried out by the sun. "To remedy this a knee, made from a fork formed by two limbs, or a crooked limb, was fitted inside of each end, and bolted to the sides with white oak or locust treenails."[107]

The canoe figured very heavily in the daily lives of the colonists and in the tobacco economy. The colonists were able to travel the creeks and riverways of the Bay, clear land for tobacco production, and have a means of transporting it to market. The growing tobacco market forced the next evolutionary design of the canoe.

As the canoes were built of one tree, being limited in size, especially in beam, according to the size of the tree, transporting large loads of tobacco was nearly impossible. It also made the canoes quite unstable and unwieldy. The double canoe, or "tobacco canoe" was developed (Fig. 15). It consisted of two canoe hulls, as equal in length as possible, which were placed beside each other and lashed together with strong cord.[108] Historian Frederick Tilp states that the Reverend Robert Rose of the James River devised this craft. Reverend Rose aligned the two canoe hulls beside each other and using crossbeams and heavy cord, lashed the two together. The system afforded two advantages, the first being stability for transporting the

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[107]William A. Davis, "The Chesapeake Bay Canoe: Its Evolution From the Dugout," The Rudder, April 1909, 350.

[108]Brewington, 3.

hogsheads of tobacco downstream to market; and the second was that for the return journey the canoes could be separated and were more easily managed heading upstream.[109]

Another attempt to increase the beam of the dugout was tried in the punt. The punt is a small dugout canoe which was used primarily for fishing and hunting. The punt is much smaller in length and beam than the dugouts previously mentioned, ranging from 12' to 15' in length; and 2' to 4' in beam.[110] Seeking to increase the beam of the single-log punt, the builders first filled the hull with hot water. The water was kept hot by the adding of heated stones until the sides of the hull could be spread apart. Once the beam was increased sufficiently, spreaders were mounted into the hull to maintain the shape. When the punt dried, it was ready for service.[111] However, William Davis suggests that the punts, with their increased beam, were harder to propel by oar or pole and were soon outfitted with a sail. The inclusion of a sail led to the need for counterbalance, thus, the addition of a keel.[112]

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[109]Tilp also states that the craft were operated usually by slaves who guided the canoes downstream to the ships heading for England, and traded for "salted fish, molasses, rum, and other goods from the West Indies, or England (Tilp, 26).

[110]Brewington, 4. Tilp, 22.

[111]Ibid.

[112]Davis, 352.

The tobacco canoe and the punt still did not meet the need for a craft with more beam and stability. They did, however, serve as the impetus for the development of multi-log construction, in which the canoes would reach their most prolific era. Also, there were two other factors which led to the creation of the multi-log canoes. The first was the scarcity of large trees;[113] the second was the availability of pitch and tar to seal joints and the ability of the colonists to create watertight joints.[114] As will be seen in the next section, when the tobacco industry declines and is replaced, in large part, by the fishing industry, the log canoes are the best-suited craft to fulfill this economic function.

Multi-log canoes

Multi-log construction was arguably the most significant development in the log canoes. It extended the existence of the log boats by making the smaller trees, which were in abundance, usable. It also allowed for craft with wider beam and more stability.

The two-log canoe developed as the first step in multi-log construction. "The step from the punt to the two-piece canoe could, at first, be only distinguished by the difference in size, but as the size of the canoe increased,

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[113]Tilp, 8.

[114]Brewington, 4-5. Davis, 350. Tilp, 8.

a difference in the construction of them was introduced."[115] The process to construct the canoe involved two logs, similar in size which were squared and aligned next to each other. The overall shape of the canoe was roughed out in both logs to keep the shape symmetrical. The logs were then hollowed out separately by adze and then readied to be permanently joined. Once each log had been smoothed down, they were lashed together tightly and joined either with treenails or with oak tenons fitted into prepared mortises, thus completing the canoe.[116] The two-log canoe saw great growth and a canoe built of three logs soon followed it. The use of more and more logs increased the size of the canoe as well as the time and complexity of construction. Randall Peffer relates the legend of the creator of the first two- and three-log canoes, a man by the name of Aaron, living in the Poquoson area of Virginia. "In the late Seventeenth century [Aaron] built the first two-log canoes

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[115]Davis, 352.

[116]Brewington states that the mortice holes were "an inch high, three inches wide, and four inches deep into the face of the log, and the tenons were nailed into place using locust pins (Brewington, 4-5). Robert Burgess writes that the two-log construction began in the late Seventeenth century (Burgess, 14). William Davis suggests that the sail still figured prominently in the design, writing that the type of sail found on the punt was brought over to the canoe, and a small jigger sail added forward. He then states that as the canoe length was extended, the fore-sail became larger thus, providing another explanation for the particular rig system found on the canoes. Davis dates these canoes vaguely in the mid-nineteenth century (Davis, 352-3).

by trunnel fastening two half-hull logs. Shortly after the two-log canoe made the scene, Aaron did it again--this time with three logs."[117] The late seventeenth century date of this development is not surprising. The colonial Chesapeake economy had reached new levels of sophistication and maturity with tobacco production fueling the economic expansion. Moreover, the easily accessible large trees of the shoreline had disappeared, forcing the colonists to build with smaller timber resources as they continued to over-exploit the natural resources of the Bay. Finally, the food needs of the region's expanding population made it profitable for watermen to develop a fishing and oystering business.(Figs. 15, 16)

The utilization of three logs in canoe construction was a logical progression in the evolution process. Three logs expanded the beam of the canoe, and provided greater deadrise in the shape of the hull.

Construction of the three-log canoe begins with the shaping of the center, or keel log. The bottom of the log takes shape first, being flat amidships, and rising at both bow and stern. To this are added wing logs, one on either side. Both wing logs are shaped and fitted to each other, and especially to the center log. Once the canoe has its overall shape, the interior is hollowed out. The bottom of

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[117]Randall Peffer, "Cut and Look: Building a Chesapeake Bay Sailing Log Canoe," Woodenboat, Vol. 1, No. 6, 28.

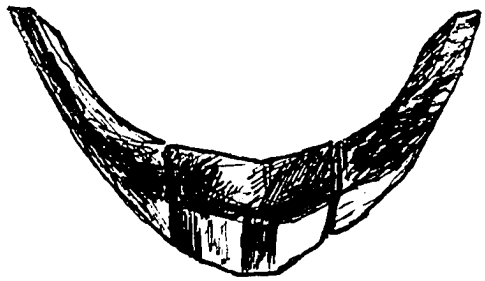

Figure 15. Section of a three-log canoe.
From a photograph by the author of a canoe in the collection of the Calvert Marine Museum

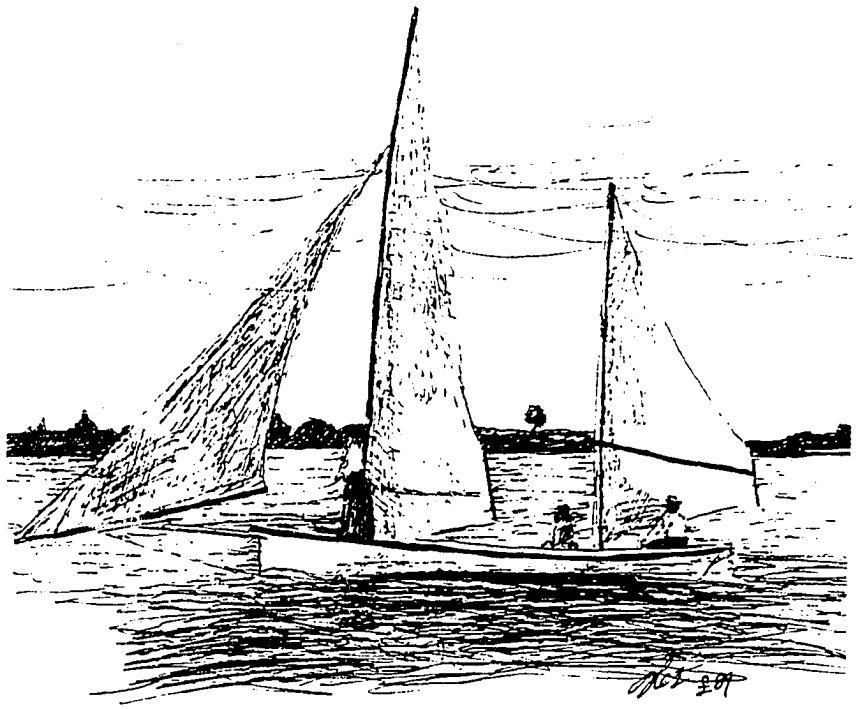

Figure 16. Log canoe being used for transportation.
From a historic photograph in the collection of the Chesapeake Bay Maritime Museum

the canoe is the thickest, roughly 3", and thins out towards the wings. With the logs pressed together, a handsaw is run down both seams in order to assure a tight fit. The wing logs are then permanently bolted, using iron bolts, to the keel log.[118] Kalani Armstrong writes of the construction, "It will easily be seen that no small skill is required to get an accurate curve of the wings, and it is at this point that the correct eye and long training of a successful builder may be expected to show themselves."[119]

Once the hull was complete, the craftsman added a centerboard, which could be raised and lowered as needed. "The centerboard will be put in six inches forward of the middle of the canoe and running forward one-quarter of the length of the canoe."[120] When the board was raised, the canoe would only draw about a foot of water.[121] This made it a perfect vessel for fishing and oystering in shallow water. The three-log canoe carried a single mast supporting a jib and a mainsail. They were also outfitted with oars and poles. The mast carried no standing rigging that would

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[118]Interestingly, only two authors describe the construction of the three-log canoes. (Armstrong, 126-7. Davis, 353.) In order to best appreciate and understand the complexity of five-log construction, and how it developed from the first multi-log canoes, three-log construction must be addressed.

[119]Armstrong, 126.

[120]Davis, 355.

[121]Armstrong, 127.

be a hindrance while oystering.[122]

It was the fishing and the oystering business where the canoes achieved great notoriety and became such a common sight on the Chesapeake. From September until the following May, the canoes were engaged in tonging for oysters. Upon reaching the oyster beds and furling the sails, the watermen used a large pair of tongs to scoop the oysters from their beds.(Fig. 17) Owing to the low freeboard of the canoes, tonging was relatively easy; and the log hulls stood up very well to the unmerciful damage done by the oyster shell. "The tongers, nearly all of whom are negroes, being well satisfied if they can make fifteen or twenty bushels to a man."[123] In the summer months, the canoes were found over the entire bay catching fish, and heading for market at each day's end.[124]

Thus, due to its design and durability, the three-log canoe became one of the most prolific sights on the Bay. The three-log canoe met the economic needs of the times by being one of the best-suited craft in the booming fishing economy of the Bay. However, soon five-log canoes would outnumber it.

The five-log canoe was a very important stage in the

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[122]Armstrong, 127-8. Davis, 355.

[123]Ibid., 128.

[124]Ibid., 128.

process of evolution and became one of the most prolific sailing crafts to work the Bay. The design and durability of the three-log canoe was carried over and improved upon. The addition of two more wing logs gave the canoe a wider beam, allowing more room for the day's catch. The keel log remained the central log, flanked on either side by garboards (previously the wing logs). The garboards were then each topped by a wing log.

One of the most important features of the five-log canoe is that three indigenous types arose on the Bay. One type developed on the Western shore of Virginia, called the Poquoson canoe, deriving its name from its origins in the Poquoson area of the York River. The other two developed on the Eastern shore of Maryland. The Pocomoke canoe type developed and drew its name from the Pocomoke River area. The Tilghmans Island canoe developed and was concentrated around Tilghmans Island in the upper Bay area.[125]

This section will examine each type briefly in order to ascertain similarities and differences between the three, and also to better understand how the racing canoes evolved from this group. As a concise description of the construction of a five-log canoe appears in Chapter Two, there is no need for one here. The basic method applies to

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[125]Brewington, 7. Burgess, "Dugout Log Canoes," 16. Chapelle, American Small Sailing Craft, 291-2. Peffer, 28. Dickson J. Preston, Talbot County: A History (Centreville MD: Tidewater Publishers, 1983), 243; Tilp, 8.

Figure 17. Tonging for oysters.
From a photograph by Bates Littlehales (Kenney, "Chesapeake Country," 372)

all three types presented here, with the understanding that each canoe builder had his own methods for building the canoe.

The Poquoson Canoe

The Poquoson canoe was a double-ender, originally having two masts, each carrying a leg-of-mutton sail (Fig. 18). By the late 1890's, they were sloop rigged, with one mast supporting a mainsail and a jib; and a bowsprit was added.[126] When it was converted to the sloop rig, the mast was raked sharply aft and remained unstayed. The sail was supported by a sprit, attached at the tack of the sail and to the mast. The centerboard was incorporated in the canoe by the 1880's.[127] Robert Burgess comments that, "a 'Poquoson-built' canoe was the aristocrat of the Chesapeake Bay log canoes.[128]

The Pocomoke Canoe

The Pocomoke, or Nanticoke, canoe differed in form and rig from the canoe of the Poquoson area. This canoe "was a low-sided and usually narrow double-ender with a curved, raking stem; The hull was made distinctive also by the use of a lap-strake, or rising strake, which forms most of the topsides above the water line."[129] (Fig. 19) The Pocomoke

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[126]Chapelle, 292. Tilp, 8.

[127]Chapelle, 292.

[128]Burgess, "Dugout Log Canoes," 16.

canoe had a very different rig also. The rig consisted of two masts, raked aft, each carrying a leg-of-mutton sail. The foremast was slightly taller than the main, or aft, mast. There is no bowsprit or a large, triangular jibsail present. However, in the bow is a small mast, raked forward carrying a "stick-up" jib.[130] Howard Chapelle felt that this rig was quite efficient, "for its luff was always straight, and, when properly sheeted, it stood very well indeed."[131] A sprit, attached on alternating sides, supported each sail. It was a common canoe type in and around the Pocomoke area, up to the Choptank River, where the Tilghmans Island canoe was favored.

The Tilghmans Island canoe

The Tilghmans Island canoe is the only one to have developed in the upper Bay area. This was a two-masted canoe, each supporting a leg-of-mutton sail. Both masts were raked slightly aft, the foremast being taller than the mainmast. A bowsprit and a jib were both present, giving this canoe the appearance of a schooner.[132] On the bow were what Brewington and Chapelle call a "long head." The long head provided an area for men when working at the bowsprit on larger ships and seems to be only for decoration on the

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[129]Chapelle, 292.

[130]Brewington, 24. Chapelle, 292-3. Tilp, 8.

[131]Chapelle, 293.

[132]Brewington, 18. Chapelle, 293. Tilp, 8.

canoe.[133] There were many boat builders in the Tilghmans Island and Kent Island area around the time of the Civil War. It is believed that the first log canoe built in the area was the Sharp's Island, built in 1856 by Thomas Bruff at Sharp's Island.[134] The racing canoe would evolve from the Tilghmans Island canoe.

Due to the narrowness of their hulls, and being of shallow draft, the canoes were the fastest craft working the Bay. They were also very sturdy craft that stood up to the punishment of hauling the daily catches, as well as being able to withstand easily the sometimes-fierce weather of the Chesapeake. "The shoveling of oysters and fish was easier (crabs went directly into barrels) because of the smooth hull interior without frames for interference: this made log canoes the preferred workboats."[135]

Around Talbot County, which includes the islands of Kent and Tilghmans, the seafood industry was a significant part of the economy. Oystering ran from September to May; it was followed by fishing and crabbing in the summer months. The hunting of waterfowl was very popular in the Talbot area, both as a form of recreation and a commercial enterprise. Geographically and environmentally, the Talbot

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[133]Brewington, 18. Chapelle, 293.

[134]Preston, 243.

[135]Tilp, 8.

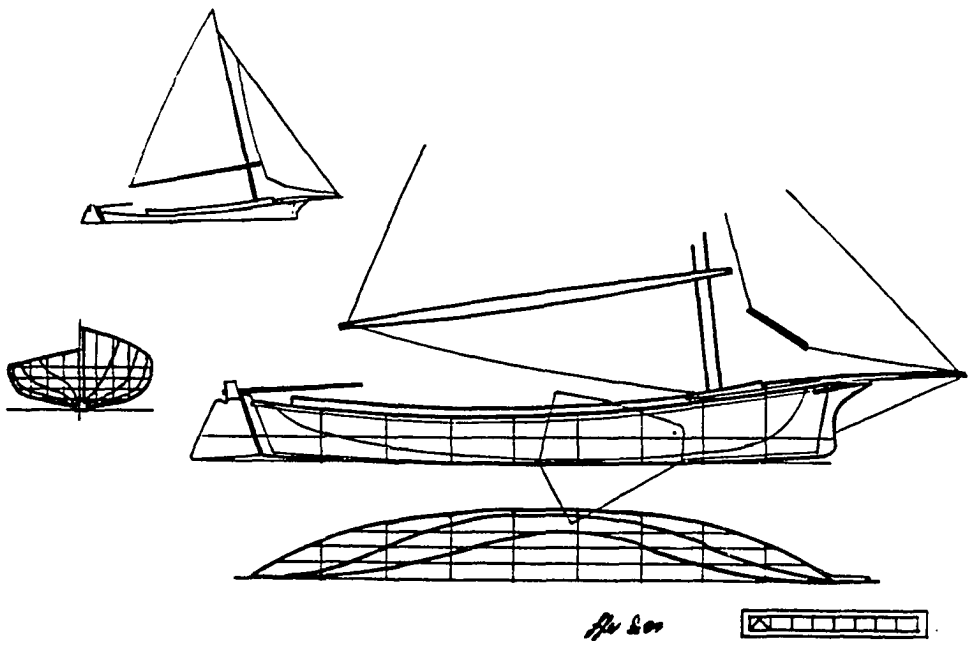

Figure 18. The Poquoson canoe.
From offsets by Howard Chapelle (Chapelle, American Small Sailing Craft, 294.

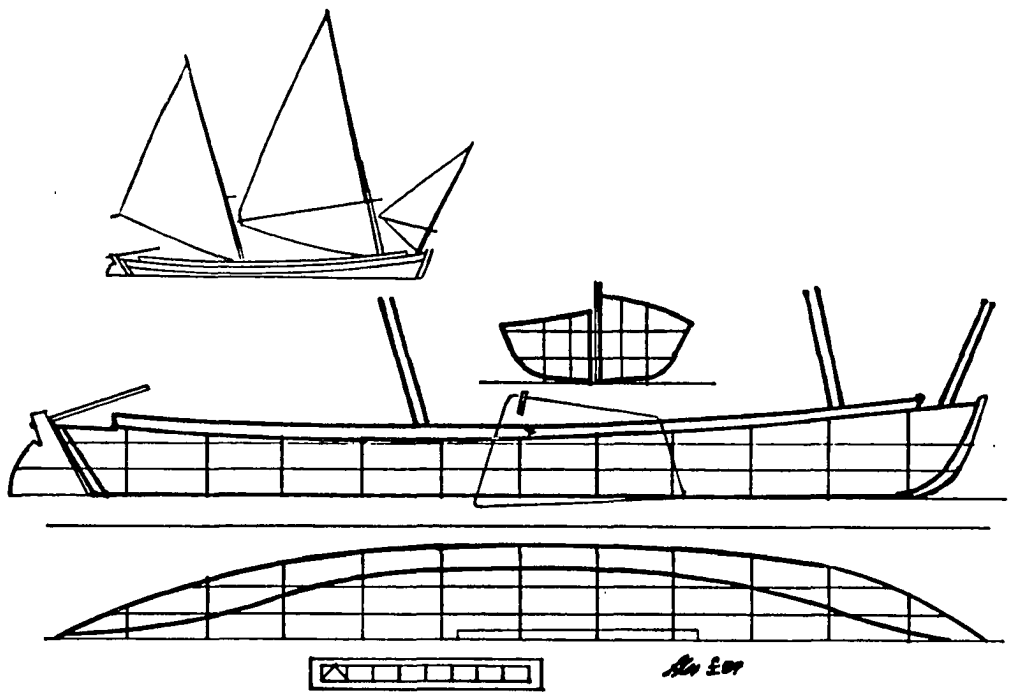

Figure 19. The Pocomoke canoe.
From offsets by Howard Chapelle (Chapelle, 298)

area was historically conducive to the evolution of the log canoe. The Indians had used the dugouts both for fishing and hunting and had passed on that legacy to the white settlers.[136] "Its [Talbot County] low shoreline provided countless creeks, coves, and tidal rivers which offered haven to the shallow draft or ocean going ships of the seventeenth century; making the loading and unloading of ships a simple process."[137] With soil that was good for the production of tobacco, the economy created the need for transporting the product to market. Upon the decline in tobacco production, the seafood industry became the mainstay of the economy. Thus, the need for a dependable and cost-effective workboat was amply met in the evolving log canoe. Henry Glassie believes that "the dugout canoe functioned as an element in a system that provided the economic base for a water-oriented community and linked the community to the outside."[138] He further states that as the market changed, or, the economy of the community changed, that the tools of the waterman, namely his craft, had to change also in order to remain competitive.[139]

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[136]Preston, 15, 44.

[137]Ibid., 13

[138]Henry Glassie, The Nature of the New World Artifact: The Instance of the Dugout Canoe," Festschrift Fur Robert Wildhaber, Edited by Walter Escher, Theo Ganner, and Haus Trumpy, (Basel: Verlag G. Krebs AG for Rudolf Habelt Verlag GmbH, 1973), 168.

The log canoe and its development are closely tied to the Eastern shore area around Talbot County and from its strong working heritage, the racing canoes evolved. As an artifact of material culture, the racing canoe exists as the only surviving link, not only to the working canoes, but also to the aboriginal and early log canoes of the Bay. Although many examples of working canoes are to be found in museums around the Chesapeake, the racing canoes are still active in the Eastern shore area from whence they originated. That they can be interpreted, in situ, allows the racing canoe to be understood as part of an evolutionary process which began before the first white explorer arrived in the New World.

Influence

The influence of the log canoes upon other Chesapeake craft is widespread. The design and construction of the double-ender hull, figured prominently in both the bugeye and the brogan, two indigenous workboat types.[140] The

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[139]Ibid., 169.

[140]Brewington states that "the continuity of the design from the canoe through the coasting canoe to the brogan is obvious. Construction methods were also exactly the same in each. The characteristics which distinguish the brogan from the canoe were solely size and interior arrangement," (Brewington, 38). Marion Brewington wrote a very fine analysis and description of the bugeye, which comprises the second part of Chesapeake Bay Log Canoes and Bugeyes. Both the bugeye and the brogan had a hull of either, seven- or nine-log construction. This allowed for a longer and wider craft than the canoes, for oystering and fishing. Howard I. Chapelle states that the brogan was basically of frame

design of the sail rig was also carried over to these two craft.[141]

The sprit/club system is found on several other Bay craft such as the flattie, the sharpie, and several types of crabbing skiffs. The flattie rig was a single mast which was raked aft, and carried a leg-of-mutton sail. The sail was supported by a sprit, attached to the clew of the sail and at the mast. In some cases, a small stick-up jib was in the extreme bow. The jibmast was canted sharply forward and carried a small sprit.[142] The sharpie rig usually consisted of two masts, one in the extreme bow, and the other in the aft one-third of the boat. Both masts carried the leg-of-mutton sail, supported by a sprit, and occasionally a club. A jib was held aloft only by its halyard and was attached to a jib boom. These craft differed from the flatties and the canoes in that the masts usually rotated for running

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around the Tilghmans Island area (Chapelle, 294). He further states that the bugeye developed from the canoe construction, at the close of the Civil War (Ibid., 294). Frederick Tilp suggests that the impetus for the creation of the brogan was the heavy competition from New England schooners, which were dredging the Bay oystergrounds. "[The canoe] owner quickly found that it was too small a boat to carry a profitable load, and a new and even larger type of craft was the remedy that suggested itself (Tilp, 46).

[141]Both the brogan and the bugeye had two masts, raked aft, that each carried a leg-of-mutton sail. Both a jib and a bowsprit were present on the craft. However, instead of a sprit/club arrangement, the sails were attached to a swinging boom. On both craft, the foremast was taller than the mainmast; the bugeye having the larger masts, as it was a larger craft (Brewington, 59-62. Tilp, 46, 52.)

[142]Tilp, 44.

downwind.[143] The skiffs are small, plank-built craft used by individuals for crabbing. Most carried only one mast, placed in the bow and carried a small leg-of-mutton sail. Frederick Tilp describes six regional types, all of which carry the sprit. Two types of the skiff carry a jib sail, the Cambridge and the Hooper Isle; one type carries the stick-up jib, the flattie; and one carries a two masted rig, the Cambridge two-sail. These craft usually average less than twenty feet in length and were used in the many sheltered shoal areas around the Bay.[144]

The author does not imply that the log canoes were the sole influence on these other craft, but the opportunity was very likely.

In this chapter, the author has examined the heritage and evolution of the log canoe on the Chesapeake Bay. The focus was primarily on the canoe and what influences caused its development. The evolutionary process spanned more than three hundred years, affording several stages of development. The author also examined the relationship between the canoe, the environment in which it existed, and the people it served, providing a broader context to interpret and understand the racing log canoe better.

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[143]Ibid., 58.

[144]Ibid., 66.

CHAPTER FOUR

THE RACING LOG CANOE IN A WIDER WORLD

In this chapter the author will examine the nature of the log canoe in a wider world. The racing canoe of the Chesapeake Bay is not, simply, an anomaly which exists without precedents in maritime history. Log craft have been used and developed in many countries, and at many different times. It will be the focus of this chapter to investigate canoe systems and components that are comparable to the log canoes of the Chesapeake Bay. The first part of this chapter will investigate the log canoes and dugouts of the Atlantic and Pacific areas, chiefly during prehistoric times. The author will briefly analyze log craft and their components from Scandinavia and other sections of Europe, from the Atlantic region and, from the Pacific region, an analysis of the log craft of Polynesia, Hawaii, Indonesia, and Africa. The second section of this chapter will examine canoes and log craft in North and South America. For the Northern hemisphere, the author will briefly detail the Canadian and Indian whaling/war canoes; the pirouges of Louisiana; and a different type of racing canoe. For the Southern hemisphere, an examination of balancing devices in the West Indies will be a main focus. The final section of this chapter will address the modern canoes, primarily in North America. The author will address new materials used in

construction, and how canoes are used today. Also, the author investigates two modern sailing craft which redefine the components of the racing log canoe.

This chapter derives its genesis from an article written by Henry Glassie in 1972.[145] In the article, Glassie is concerned with the taxonomy and development of the dugout in America. He examines the dugout as a folk artifact, drawing from it information about the many influences which gave rise to its evolution. He believes that the canoe is a system of component parts which convey sets of ideas about the culture that created and used it.[146] On another level Glassie, reiterating Claude Levi-Strauss, is interested in the canoe as a mediation between the opposing forces of nature and culture.

> The canoe lies conceptually as well as materially, as a sign as well as an object--between nature and man: it is the natural (a tree) transformed into the cultural (a boat); by means of this conversion of natural substances, nature is further transformed by the facilitation of motion through space.[147]

It is the interrelation of different cultures at work on the canoe, which make it such an important folk artifact. From this analysis, the author became intrigued at the

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[145]Henry Glassie, "The Nature of the New World Artifact: The Instance of the Dugout Canoe," Festschrift Fur Robert Wildhaber. Edited by Walter Escher, Theo Ganner, and Haus Trumpy. (Basel: Verlag G. Krebs AG for Rudolf Habelt GmbH, 1973).

[146]Ibid., 163.

[147]Ibid., 166.

relationship of the racing canoes in a wider context. Primarily using the Chesapeake Bay racing log canoe as reference, comparisons are drawn between components and systems developed through other experiences, than those of the Chesapeake Bay.

The Atlantic Experience

The dugout log craft are among some of the oldest known wooden craft. It is believed that only boats made of animal skins and bark predate the dugout.[148] The dugouts developed in areas which were forested, and where the culture had developed tools that could carve out a craft.[149] In Scandinavia, it is argued whether the dugout or the earlier skin boats were the basis for the great planked vessels of the Vikings.

The dugout, or *eike*, existed in Scandinavian waters since the Stone Age.[150] The dugout was simply carved out of the trunk of a tree, and propelled by oars or by poling. A. W. Brogger observed that the log craft were distinctly lake and river craft, and that it was very unlikely they ever

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[148]Enzo Angeluuci and Attilo Cucari, Ships (New York: McGraw-Hill, 1964), 9; F. W. Brogger and Haakon Shetlig, The Viking Ships, Their Ancestry and Evolution (Oslo: Dreyers Forlag, 1971), 20, 24; Paul Johnstone, The Sea-Craft of Prehistory (Cambridge: Harvard University Press, 1980), 45-46.

[149]Johnstone, 46.

[150]Brogger, 18.

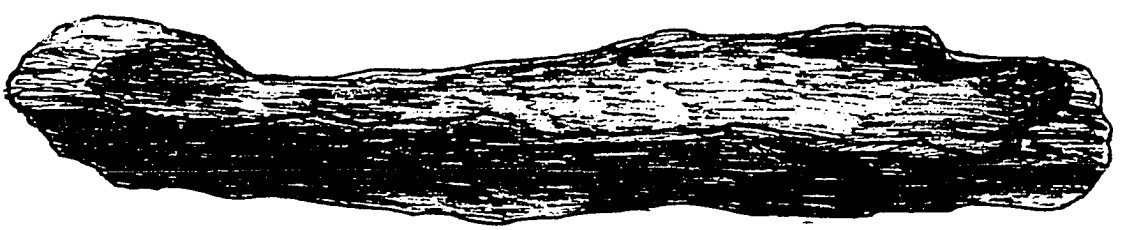

Figure 20. Dugout from Pesse, Netherlands dated to circa 6315 B. C. (Johnstone, 46).

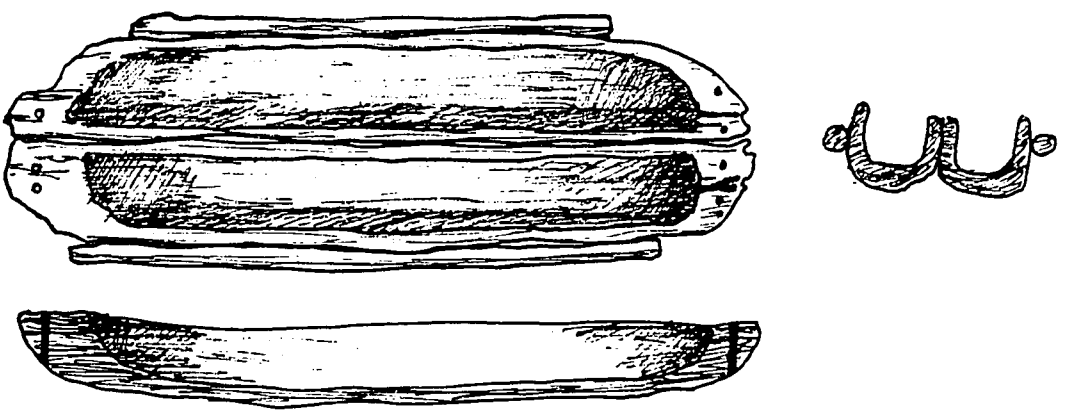

Figure 21. Double dugout canoe with stabilizers, From Surnvinmaki, Finland (Johnstone, 49)

ventured out on the open seas. They were used on interior lakes and inland waterways, functioning as a form of communication; and only in these regions did any development occur.[151] Only where the craft could meet the needs of its users, as a fishing craft or for transportation, did it develop beyond its most primitive stages (Fig. 20). The sea surrounds much of Scandinavia, and most of the settlements are coastal. The log craft could develop in very few places. A sea going craft better met the needs of the majority of Scandinavians, and saw greater development.[152] In comparison, the canoes of the Chesapeake Bay are confined to use within the Bay, rarely if ever, venturing beyond the Capes into the Atlantic. However, they were able to adapt to changing demands and meet the needs of the Chesapeake society in some form.

At some point in the development of the Scandinavian craft, counterbalance was a modification that may have had an impact on later craft. Both Brogger and Johnstone mention that some from of outrigger or higher freeboard was used for stabilization. However, Johnstone comments that "True outriggers are not known in European waters."[153] They also state that a type of double-canoe was devised, creating

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[151]Ibid., 19, 22.

[152]Ibid., 23; Johnstone, 48-9.

[153]Johnstone, 140.

a more manageable craft.[154] (Fig. 21) The same principle applies to the creation of the tobacco canoe that developed as a subtype on the Chesapeake.

Paul Johnstone makes the observation that in Finland and the Baltic state of Estonia, various methods of heating, expanded dugouts.[155] The Chesapeake punt was a small single log dugout that had its beam increased when it was softened with boiling water and rocks.

In Britain, evidence of dugout craft was quite plentiful, especially in Scotland and Ireland. Evidence shows that they were used primarily on the highland lakes and lowland estuaries.[156] The dugouts are also known in other parts of Europe. In Poland, a dugout craft consisting of five canoes lashed together can still be found in use on the Vistula River.[157] Other dugouts and multiple log craft are known to have existed in Spain, Switzerland, Denmark, Albania, Russia, France, Germany, and Greece.[158]

Most of the canoes in the Atlantic region evolved beyond the dugout or the multiple log craft. The craft were

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[154]Brogger, 20.

[155]Johnstone, 49-50.

[156]Ibid., 140.

[157]Known as the Dunajec craft, deriving its name from an estuary of the Vistula, the Dunajec. It is a very stable and maneuverable due to its flexible lashings (Ibid., 48).

[158]Brogger, 18; Johnstone, 49, 60-66.

only used for inshore and river transportation. Development was hampered by creation of more versatile craft, built as ocean going vessels. However, in the Pacific region, just the opposite is true. In Polynesia and Hawaii especially, the canoe has been used in ocean transportation for centuries.

The Pacific Experience

In the Pacific region, two cultures, the Polynesian and the Hawaiian, have used and developed the log canoe over many centuries. One of the most important aspects of the Pacific canoes was the high state of evolution, many being designed solely for specific purposes. It is in the Pacific region that the canoe is perhaps most fully evolved and utilized.

> They were most ingeniously designed and constructed to serve their several different purposes so that taken as a whole they comprise a maritime body more varied and particularized than that of any other nonindustrial culture, simply because the Polynesians were seafaring to a degree to which no other culture had ever adapted.[159]

To best understand the development of the Polynesian canoes, one must first be acquainted with the culture. The Polynesians are a seafaring and migratory people. Through archaeological evidence, it is believed that the ocean migrations originated with people in what is today,

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[159]Edward Dodd, Polynesian Seafaring (New York: Dodd-Mead, 1972), 66.

Southeast Asia, thousands of years ago.[160] Over the following centuries, people migrated to the many islands in the South Pacific. The migration to the distant islands was accomplished only with the development of tools, and with ocean-going watercraft. Both Holmes and Johnstone observe that the migration by canoe began in New Guinea, about 4,500 years ago, through Melanesia, reaching Fiji around 1,200 B. C.[161] By the time of the birth of Christ, Polynesia had already achieved great diversification, both linguistically and culturally.[162] Approximately some three hundred years before Columbus discovered the New World, Polynesians had settled most of the southern Pacific region. Even more remarkable, is the migration routes were over uncharted and previously unexplored seas. Many journeys between islands were of great distances, and all were made in canoes before any navigational aids, compasses and sextants, had been invented by the Europeans.

Tommy Holmes best explains why the Polynesians were so more advanced than their European counterparts:

> The European tended to view the ocean as an adversary. As though to overpower the ocean while maintaining a bond to terra firma, Europeans almost blindly transposed concepts of land-based architecture to a very dissimilar marine

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[160]Tommy Holmes, The Hawaiian Canoe (Hanalei, Kauai HA: Editions Limited, 1981), 3.

[161]Ibid., 3; Johnstone, 201-3.

[162]Holmes, 3.

> environment. Their awkward craft reflected the Europeans' lack of communion with the world Polynesians called home--the ocean. Early Pacific peoples designed craft that were sea kindly, calculated for speed and in some cases so hydrodynamically advanced that it would not be until the 1800's that man would build faster sailboats.[163]

Although there are many variations of canoes, even in design and construction, among the peoples of Polynesia, the author will briefly focus on the major types and their component systems. This will provide a very unique perspective for better understanding and appreciating the racing canoe of the Chesapeake Bay.

Polynesian canoes

According to Edward Dodd, there are seven general types of Polynesian canoes, each designed to meet specific needs. The first type is a small dugout, called the *vaa* (Fig. 22). The *vaa*, averaging between ten and twenty feet in length, was primarily used for reef and coastal fishing. It is a single log dugout, stabilized by an outrigger. The *vaa* is rowed, usually not equipped with a sail rig.[164]

The second type Dodd mentions, is the *vaa ta'ie*, a sailing outrigger canoe (Fig. 23). The canoe averaged about twenty five feet in length, and was used for offshore fishing and travel between islands. It was equipped with a

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[163]Ibid., 9.

[164]Dodd, 68.

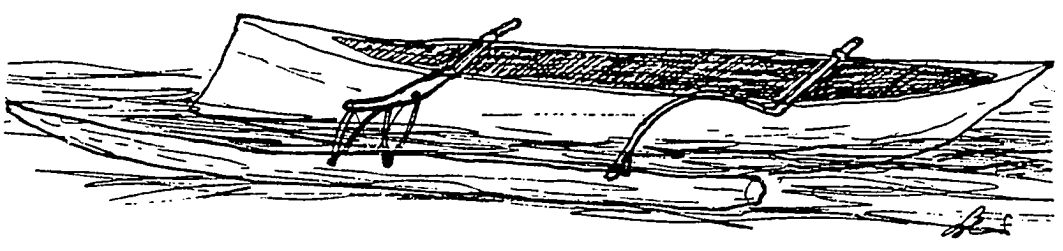

Figure 22. The *vaa*. From a drawing by James Hornell (Dodd, 68)

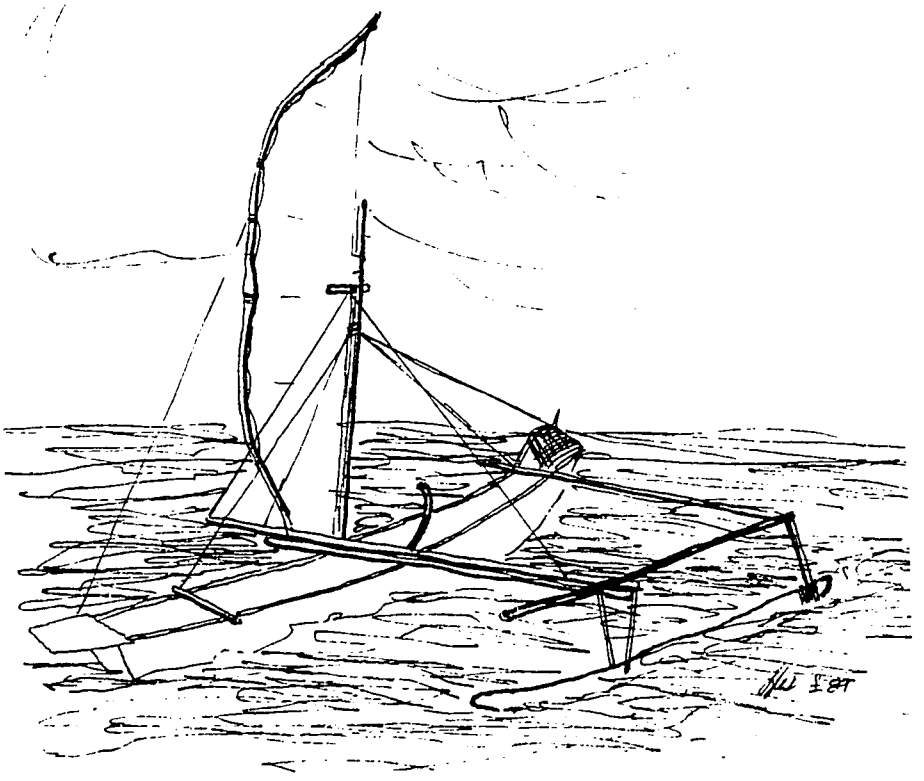

Figure 23. The *vaa ta'ie*. From a drawing by Paris (Dodd, 68)

small mast and an outrigger.[165]

The third type is a larger sailing canoe used for long distance voyages, and the most refined of the Polynesian craft. The larger canoe averaged forty feet in length, and was used for transportation among groups of islands. Dodd comments that they were not as proficient at long ocean voyages as the double canoes.[166] The *tahifa* is a double canoe, averaging about thirty feet in length. This fourth type was used for inshore transportation, usually passengers or cargo, and for short trips between islands. It consisted of two hulls lashed closely together. The stern of the canoe was flat as it rose from the waterline. Which allowed for protection from following waves. It was propelled either by pole, or occasionally they were equipped with either one or two masts with lateen sails. The *tahifa* was considered the general workboat of the fleet.[167]

The fifth canoe type is the Maori war canoe. Inhabitants of the island of New Zealand, which was forested with gigantic trees, the Maori used two types in particular, *totara*, and *kauri*, for constructing the canoes.[168] The

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[165]Ibid., 68.

[166]Ibid., 69.

[167]Ibid., 70.

[168]Paul Johnstone notes that the felling of the trees, and the entire construction process, was part of a highly ritualistic ceremony. Thus, each of the Maori canoes were considered sacred (Johnstone, 206).

Maori canoe was hewn from a single log of either totara or *kauri* wood. The war canoes had neither sail nor outriggers. Each canoe could carry nearly a hundred warriors, who rowed the craft with oars.[169] The Maori construction process is much like that of the Indians of the Chesapeake. Fires were lit all along the length of the tree trunk, the burned areas being easily removed. The tribe also employed the method of building by hand and checking by eye. Especially in the use of the adze the Maori methods are more advanced than those on the Chesapeake. The adze was used to shape not only the interior of the canoe, but also the bow and stern of the craft. Large carved bow and stern pieces were joined to the canoe hull. These pieces were mainly decorative, providing no military or navigational advantage.[170] The Maori also employed a method of self-bailing, not seen even on the present-day racing canoes of the Chesapeake. The bilges were drained through carved spaces in the hull, sealed with a wooden plug.[171] When the canoe was moving at a good pace, the plugs could be removed, allowing the bilgewater to be literally sucked out.

The sixth type of Polynesian canoe that Dodd mentions is *pahi tamai*, a double war canoe. These double canoes were

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[169]Dodd, 70.

[170]Johnstone, 206-9.

[171]Ibid., 209.

some of the largest canoes built in Polynesia. Like the war canoe of the Maori, the *pahi tamai* were propelled by oar. The bows and sterns rose from the waterline, offering some protection during battle. And, most of them had a raised platform for the chief.[172]

The final Polynesian canoe type were the *pahi tere*, the great ocean-going canoes. Little is known of these canoes, except that their nearest relation are the large Hawaiian double canoes. The *pahi tere* were most likely equipped for both sail and rowing.[173]

System components

Besides the comparative qualities noted above, there are other instances among craft of the Pacific region, that must be analyzed in relation to the Chesapeake Bay experience. In addition to hull design and construction, two particular components deserve mention: the sail rig, and counterbalance. Both components, although unique to their region and culture, offer some interesting comparisons.

The sail, or sails, and rigging were both simple in design on canoes of the Pacific region. The rig usually consisted of either one or two masts, each carrying one sail. Knowledge of the jib sail was not known in the Pacific until the first European explorers, and does not

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[172]Dodd, 71.

[173]Ibid., 71-2.

seem to have ever been employed. William Ellis wrote in 1829, describing the rigging of Polynesian canoes:

> In navigating their double canoes, the natives frequently use two sails, but in their single vessels only one. The masts are moveable, and only are raised when the sails are used. They are slightly fixed upon a step placed across the canoe, and fastened by strong ropes of braces extending to both sides, and to the stem and stern. The shape of the sails of the island-canoes is singular, the side attached to the mast is straight, the other part resembling the section of an oval, cut in the longest direction. The ropes from the corners of the sails are not usually fastened, but held in the hands of the natives. The rigging is neither varied nor complex.[174]

A common type of sail found on Tongan double canoes, is similar to the Mediterranean lateen rig. The sail is triangular in shape and attached to a sprit on both of its long sides. The two sprits were lashed together near the bow, and widened as they went aft. The sail was mounted on a small mast which was raked forward. The sail could be dropped quickly, pivoting at the bow, closing like scissors.[175] (Fig. 24) The same basic sail design is found on some Micronesian canoes. However, whereas on the Tongan sail, the short side of the triangle was almost straight, it is "scooped out" on these canoes. This canoe does not have a mast, as is found on most other sailing canoes. The sail pivots from where it is anchored at the bow, and is

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[174]Ibid., 137.

[175]Ibid., 78-9.

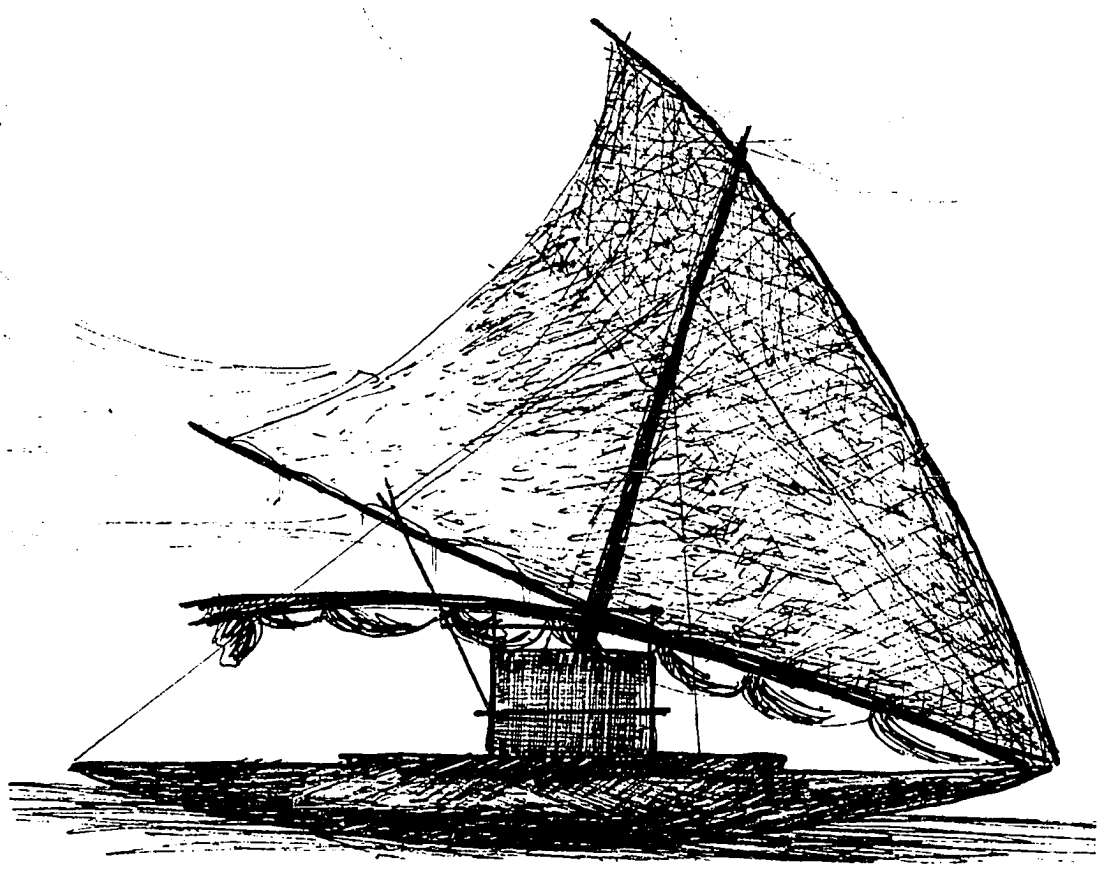

Figure 24. Tongan canoe shown with sail furled and flying. From a drawing by Dumont D'Urville (Dodd, 79)

supported by two poles that are braced to the hull. The Micronesian canoes are known to have been some of the most ingeniously crafted canoes.[176]

An example of a canoe used in the Celebes Archipelago depicts a canoe with a square sail. The sail is mounted on a mast set in the forward one-third of the boat. The mast is stayed to several places in the canoe.[177] In New Guinea, a canoe called *caracor* has a tripod style mast carrying a large triangular sail.[178] This type of mast is probably a subtype developed to suit conditions around New Guinea.

Counterbalance is one of the most unique features of the Pacific craft. Outriggers and stabilizers were common on nearly all of the canoes. As the canoes were quite narrow in relation to their length, some system had to be devised in order to stabilize the craft. In the Pacific, the problem of counterbalancing was solved in several different manners.

Noted anthropologist James Hornell contends that there are two basic types of balancing devices, stabilizing and counterpoise.[179] Stabilizing devices are primarily used on craft with a rounded hull, such as the dugout canoes. One

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[176]Ibid., 135.

[177]Angelucci, 15.

[178]Ibid., 15.

[179]James Hornell, "Balancing Devices in Canoes and Sailing Craft," Ethnos, No. 1, 1945, 1.

of the more common methods for stabilizing the dugout was connecting two hulls either by lashing or with crossbeams, creating the double canoe. The double canoes were extensively used in Polynesia, much like the tobacco boats on the Chesapeake Bay. Another method of stabilization was to attach a buoyant material, such as bamboo or balsa, to the sides of the canoe. These type of devices, Hornell believes were the first stage of the outrigger.[180] Over time, extending the stabilizer further from the hull increased its ability to maintain balance. Poles were extended to one side of the craft and attached to the float. The level of the float could be raised or lowered to best stabilize the particular hull. Many different variations were developed based on this design, some being quite elaborate.[181] In Indonesian waters a double outrigger was developed, with extended floats on both sides of the craft.[182]

Counterpoise devices allowed the sailing craft to carry a greater amount of sail than normal without capsizing. The springboards of the Chesapeake racing canoes can be considered counterpoise devices. Hornell details two type of craft which employ the balancing boards similar to those

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[180]Ibid., 2.

[181]Ibid., 5-7.

[182]Ibid., 4, 8; Angelucci, 15.

found on the Chesapeake. In the area of southern India and northern Ceylon, large planks, either movable or secured, maintain balance. On the canoe from India the board is secured with a shroud at each end. In heavy winds, both shrouds can be attached on the weather side of the board. The board can then be extended further outboard of the hull. In the Ceylon canoe the *kadisu*, or balance board, is used to support crewmembers who move outboard on the weather side to balance out the force of wind on the sails.[183] Edward Dodd observes that the Polynesian sailors whose job it was to ride the outriggers, required great knowledge of seamanship.

> He had to be in the right spot at the right moment and he had to hop to it to be there, particularly when tacking into the wind or when heeled over by a sudden gust. In other words he had to be a gymnast as well as a seaman. [William] Ellis likens the acrobatics of a canoe to a bird flying, counterpoising its wings and feathers, its weights and tail flicks. Sometimes for the sport of it they would fly a huge kite to speed their bonny boats over the rippling waters of the lagoon.[184]

This description is very similar to that of the racing canoes of the Chesapeake. Thus, for the long sea voyages and even intercoastal fishing, the outrigger was quite important to the canoes of the Pacific region.

The canoes of the Polynesians were developed to a high degree. Whereas they were, in some form, all ocean-going

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[183]Hornell, 12-14.

[184]William Ellis wrote a four volume work entitled Polynesian Researches, in 1831. Dodd states that it is a good work on sailing and material culture (Dodd, 139, 181).

vessels, none of the canoes found on the Chesapeake ventured beyond its confines. The Polynesians were far more developed, both in construction and decoration, than even the craft created by the colonists on the Chesapeake. The Polynesians valued the canoes as sacred and thus, more closely interrelated with their culture. On the Chesapeake Bay, although the canoes are indicative of cultural values, they do not attain the stature within the culture that canoes of Polynesia do. The same can be said of the Hawaiian canoes. Like Polynesia, the Hawaiian canoes are of a highly developed form and possess stature among the culture. Otherwise, some very similar patterns exist between the Hawaiian canoes and those of the Chesapeake Bay. In Hawaii, the canoes developed from the working boats, used for fishing, transportation, and exploration into a racing subtype. Although canoe racing in Hawaii is much different than on the Chesapeake, there are many similarities.

The Hawaiian Canoe

Tommy Holmes incomparable work, The Hawaiian Canoe, provides an interesting parallel to the canoes of the Chesapeake. From this work, the author will focus on the evolution of the Hawaiian racing canoe, from its workboat heritage and how it is comparable to the experience on the Chesapeake.

The Hawaiian canoes descended from the great ocean-going canoes of the Polynesian migration. Single and double

canoes were used for transportation and communication between the islands and also used for in- and offshore fishing. The canoes were usually equipped for both rowing and sail, thus providing it the versatility to perform many different tasks. The canoes were built from *koa* trees, which were plentiful and well suited for canoe building.[185]

Canoes had to be designed and built to function in the particular local environment of Hawaii. As the single canoes were narrow in beam, an outrigger, the *ama* (float) and *'iako* (extended poles), was used on the port side. On the bow a cover or small splashguard, *kaupo'i*, served to keep water out of the hull. On the stern was a larger upturned splashguard, *kuapo'i o mua*, to protect from following seas.[186] The sail rig was most often a single mast, carrying a "crab claw" shaped sail (*pe'a*). "The Hawaiian 'crab claw' sail was three-sided, with its apex down near the bottom of the mast," Holmes notes. "It was laced at intervals to the mast and spar (*paepae*). The lower end of the spar, 'which functioned as a boom sprit,' was tied to the mast near its foot."[187] After the arrival of the white man, the Hawaiians quickly adopted the schooner

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[185]Even though *koa* was the main type of wood used in hull construction, many other types of wood are used for other sections (Holmes, 17-24).

[186]Ibid., 45.

[187]Ibid., 52.

and cutter rig for their canoes. By 1800, the sprit-sails of the Europeans largely had replaced the traditional crab claw sail.[188]

Very little changed in the way the canoes were constructed until the 1930's. The form and shape of the Hawaiian canoe had been well defined over its two-thousand year evolution. But, in the 1930's the traditional koa fishing canoes were no longer being built. As they were declining in number, "canoe builders from South Kona ushered in a new era in the design of the Hawaiian canoe, streamlining the traditional fishing canoe. From that time on canoes were built primarily, if not exclusively for racing."[189] Thus, the traditional Hawaiian fishing canoe evolved into a racing design. The reason for this evolution, in Hawaii and on the Chesapeake, is that the particular design of the canoe, and interrelation of its component systems, were so successful that evolution was a logical next step. Both workboat types were so well adapted to their task and to their environment, they were far and above any other design to develop into a racing craft.

It is believed that the Hawaiian racing canoe originated from the *kialoa*, "a light and swift canoe."[190]

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[188]Ibid., 54.

[189]Ibid., 93.

[190]Ibid., 70, 130.

Although there is not much known about the ancient forms of the racing canoe, it is believed to have been a one- or two-man fishing craft very narrow and quick to the fishing grounds and well suited for racing. Racing began among the ordinary fishing craft, which were later made lighter and faster. Two types of races developed in Hawaii: paddling and sailing. The canoes could be rigged for both. The sailing races were quite popular events, reaching their height in the 1930's. However, by the 1950's the sailing races were extinct. The boat design was of one sail, in the stern of the canoe, and a hiking platform extending from the starboard side provided counterbalancing.[191]

It is the paddling canoes, though, that have remained popular, continuing to thrive under the auspices of the Hawaiian Canoe Racing Association.[192] (Fig. 25) Eventually, organized canoe clubs took part in scheduled events. Regattas took the form of either a race from one island to another or on a shorter triangular course. Each *kialoa* was dugout of *koa*, averaged around 30-35 feet in length, and carried six men who paddled, alternating from port to starboard. One of the most prestigious of canoe races is the Moloka'i-O'ahu Race. The idea originated in 1939, as a forty-mile-ocean race. The first race was finally held in

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[191]Ibid., 137.

[192]Ibid., 132-4, 141.

Figure 25. The six-man racing canoe, Malia. From a photograph (Holmes, 181)

1952, with three canoe clubs participating. A. E. Mienvielle, who came up with the idea, convinced the Aloha Week Committee into sponsoring the race. The race lasted nearly nine hours, and was won by the six-man team from the Moloka'i. The Moloka'i-O'ahu Race has steadily grown in popularity, and in 1977 boasted 45 canoe entries in the race.[193]

Thus, the Hawaiian canoe is significant in comparison to the racing log canoe of the Chesapeake, for how it developed from workboat traditions. Although the races are structured different, and the craft are somewhat dissimilar, the patterns of development are almost mirror images. Each craft developed from available materials; were shaped by hand and adapted, over time, to best suit the local environment and its given task. The boat met those factors so well that evolution into pure racing craft was possible. Although any craft can be a racing craft when pitted against another, it is rare when a craft performs so well in relation to its designed purpose, and local conditions, that it evolves into its highest form of development as a racing craft.

In the following section of this chapter, the author will examine log canoe forms which have developed, in North and South America. He will investigate comparative features

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[193]Ibid., 146.

and systems with those of the Chesapeake Bay.

North America

The author will discuss three examples of log canoes: the whaling/war canoe of the Pacific Northwest, the pirouge from the Louisiana area, and the decked racing canoes of the North-eastern United States and Canada. The first two types are dugouts, used for the utilitarian purposes of transportation, communication, fishing, and in the case of the war canoe, battle. The third example is purely a racing design. Although these canoes are not dugout, or multi log construction, many parallels exist between them and the racing canoes of the Chesapeake.

The dugout canoes of the Pacific Northwest, were used mainly for gaining sustenance and furs from the sea. The region's terrain is rough and densely forested, making overland travel difficult. Thus, the need for a multi-functional form of waterborne transportation and communication was great.[194] Cedar, being in abundance and of great height, was the wood of choice in building the hull. After they had felled the tree, the Indians using shells, or stone tools to hollow the cedar trunk easily.[195]

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[194]Robert F. Heizer, "Fishermen and Foragers of the West," The World of the American Indian, edited by Jules B. Billard. (Washington: The National Geographic Society, 1974), 206.

[195]Verne Huser, "Native American Water Craft and How They Have Been Used," Canoe, Vol. 17, No. 3, July 1989, 19.

"Majestic cedars wanted to be used. That was why, by Indian reasoning, cedar wood was so soft and straight-grained, so readily split into house planks or carved into totem poles, tools, or utensils," notes Heizer. "Dense forest yielded the knot-free giant for a fine canoe, its size determined by use."[196] When it was hollowed out, the Indians filled the hull with water and heated it with hot stones, until the wood was pliable enough to be widened. As with most dugouts, the beam was narrow in relation to the length, and like the punt on the Chesapeake, the cedar canoe gained beam in the same manner. When the desired beam was reached, wood stretcher pieces were inserted and made fast to the hull. The bow and stern both had upturned additions, to keep water out of the hull, and protect from following seas.[197] Like the war canoes of the Maori, the cedar canoes of the Northwest were decorated with sacred symbols. Many of the cedar canoes had totemic carvings on the bow and stern.

When whaling, the canoes were usually had an eight-man crew. They would head out to sea in May "when the seas were calm and the California gray whales were running."[198] The canoe would blend in with the whales, taking care not to alarm them, and as a whale paused on the surface, he was

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[196]Heizer, 208.

[197]Huser, 19.

[198]Heizer, 211.

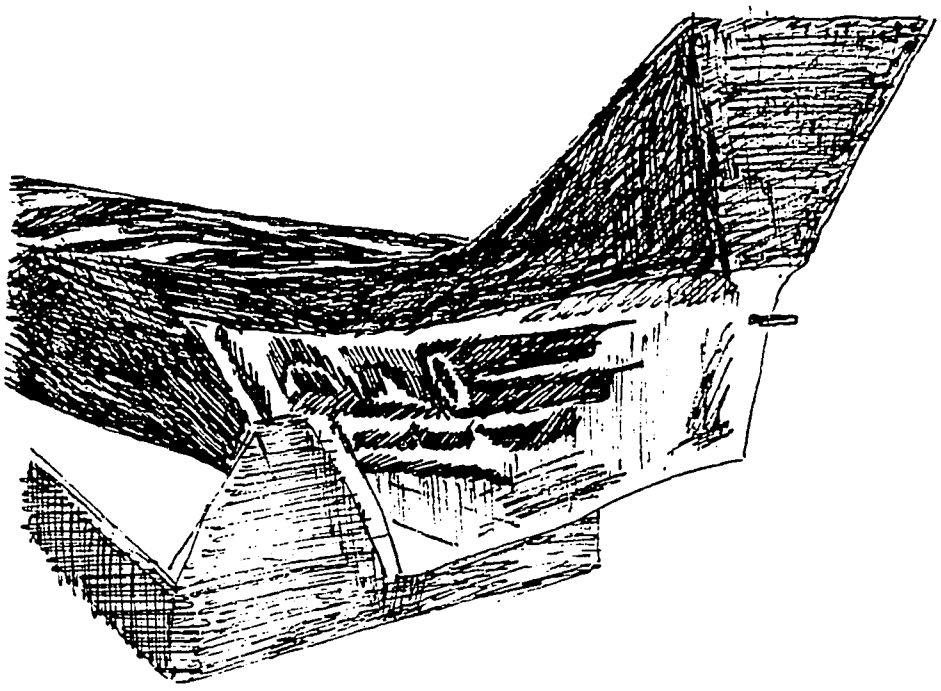

Figure 26. Whaling/war canoe from Queen Charlotte Islands, British Columbia. In the collection of the Mariner's Museum.

harpooned. As the whale floundered, the canoe retreated to keep from being broken up by the tail flukes. As the whale slowly died, more harpoons were sunk into his skin. Finally, the great whale was towed back to the village.[199]

The Mariner's Museum, in Newport News, Virginia, has a cedar whaling/war canoe in their Small Craft collection. The canoe measures 46'7" in length and 4'9" in beam. It is from the Queen Charlotte Islands of British Columbia, Canada (Fig. 26).

The pirouge is a small, single log dugout developed by the Indians in the Mississippi Basin. It is used primarily for fishing in the bayous and backwaters of Louisiana.[200] The pirouge is hewn from a single cypress log, averaging about 13 feet in length. They are designed for one or two people, and propelled by paddle or pole.[201] The pirouge served as transportation and communication on the intricate network of waterways in Louisiana, and can still be found in some areas. They also played a major role in the local economies of the Mississippi River fishing communities.[202]

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[199]Ibid., 211-14.

[200]Malcolm L. Comeaux, "Origins and Evolution of Mississippi River Fishing Craft," Pioneer America, 10, 1974, 87-8.

[201]Henry Glassie, "The Nature of The New World Artifact: The Instance of the Dugout Canoe," 160-1.

[202]Comeaux, 74-6; Henry Glassie, Patterns in the Material Folk Culture of the Eastern United States (Philadelphia: University of Pennsylvania Press, 1968), 124.

The final type to be examined from North America are the decked sailing canoes of the Northeastern United States and Canada. Organized and governed under the auspices of the American Canoe Association, this type of racing canoe saw great popularity from about 1880 until the late 1930's.[203] These canoes are designed as purely racing craft, but probably did not develop from workboat traditions. These canoes are of several models, sail plans, and classes. In particular the Association governs two classes: canvas-covered sailing canoes and the International class decked sailing canoes (Fig. 27).

The canvas-covered sailing canoes range between 17'0" and 18'1/2" in length; no less than 2'9" in beam; no more than 105 square feet of sail area; and a crew of one or two depending upon the subclass. According to sail rig, this class is divided into three sub-groups: A, B, or C. Class A canoes have a single mast roughly 20'0" tall, carrying a triangular mainsail and a jib. The mainsail is attached to a boom. Three shrouds anchor the mast to the hull.[204]

Class B canoes are rigged in one of two variations: a two-masted yawl rig; or a single mast sloop rig. The yawl rig consists of a foremast in the extreme bow, carrying a

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[203]O. S. Tyson, The Sailing Canoes: A Brief History Together with an Outline of Types and Classes, Designs, Specifications, and Rules (published under the auspices of the American Canoe Association, 1935), 28.

[204]Ibid., 13, 16.

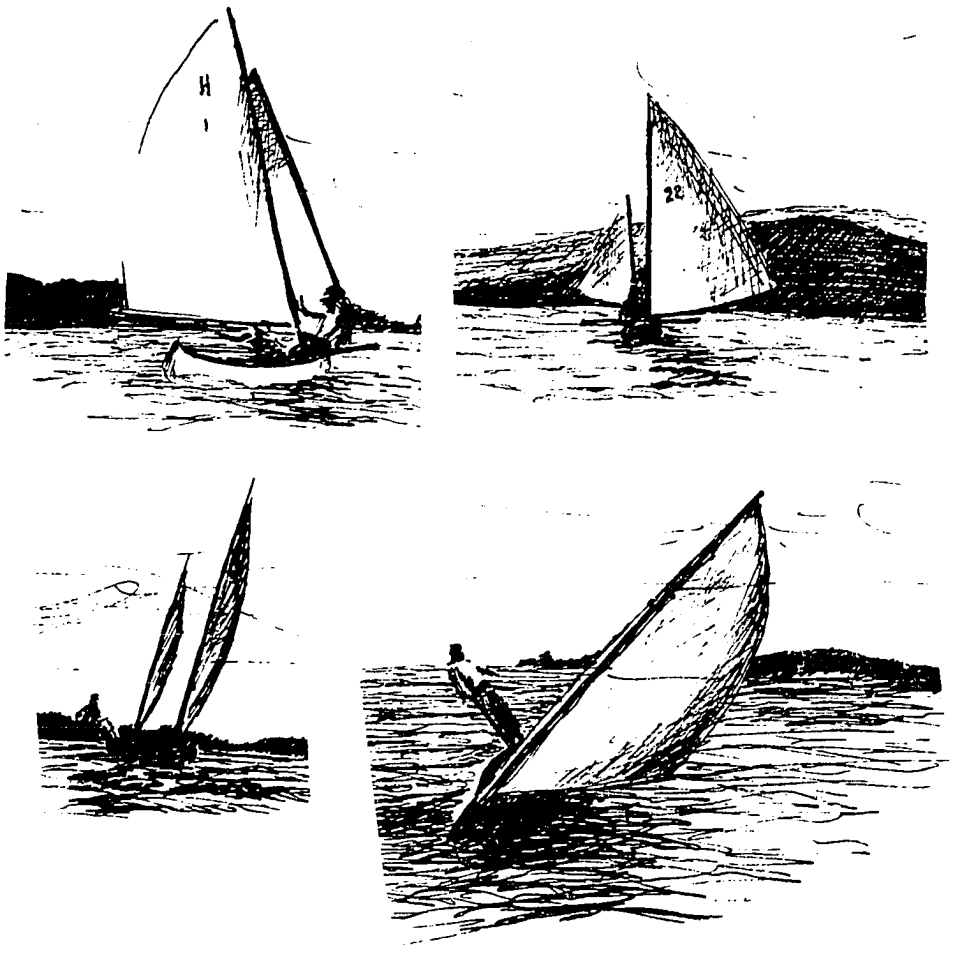

Figure 27. Canvased-covered and decked sailing canoes. From photographs (Tyson, 14, 20)

triangular foresail; and a smaller mainsail aft of midships, carrying a triangular mainsail. The sloop rig consists of one mast carrying a jib and a mainsail. The sloop rig also carries a small spinnaker for running down or off the wind.[205]

Class C canoes are limited to no more than 55 square feet of sail, thus giving it the smallest rig of the canvas canoes. The 14'4" mast carries a triangular mainsail and a small jib. The mast is mounted just forward of midships.[206]

The hulls of the canvas covered canoes are in the more traditional form of a canoe. The hulls are of wood and are decked with taut canvas. They are double-enders with the bow and stern being rounded. To counterbalance the windforce on the sails, leeboards are on either side of the canoe, functioning much like a keel or centerboard.[207] There is also an outrigger, or springboards, to transfer crew weight outboard, stabilizing the canoe.

The International class is an all wood, decked canoe, designed for international competition. While allowing for some individuality, the rules governing the International class are quite specific as far as maximum and minimum measurements. The hull must be sharp at both ends, and be

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[205]Ibid., 15, 17.

[206]Ibid., 15, 27.

[207]Ibid., 16-17.

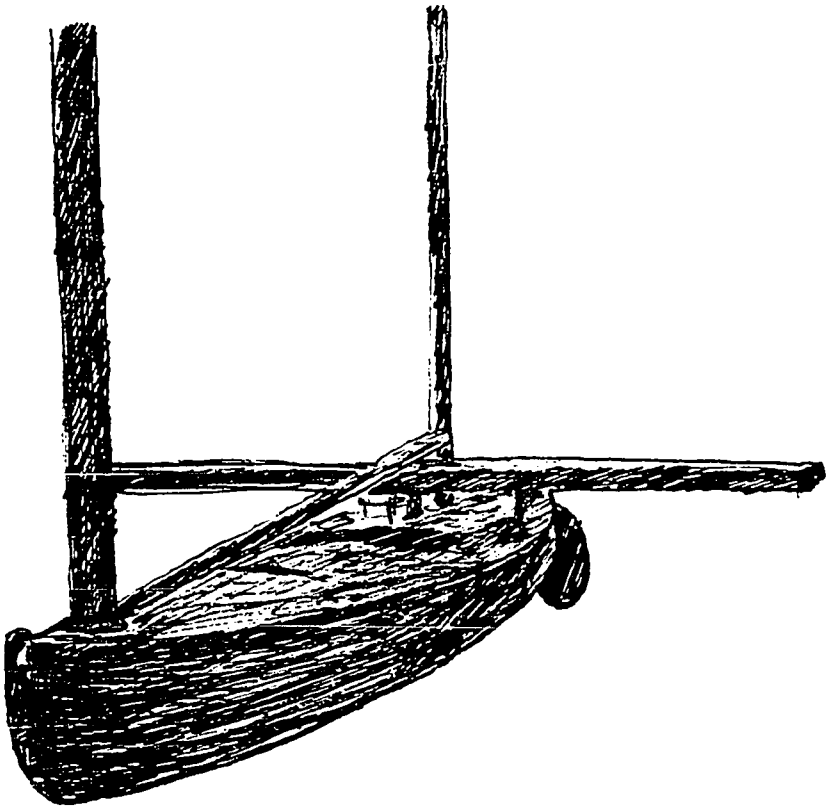

Figure 28. Much Quicker, decked sailing canoe. In the collection of the Mariner's Museum.

between 16-17 feet in length. The maximum beam is 43 inches, and the minimum is 37 inches. Only wood can be used in construction, although aluminum can be used for the fittings. The centerboard can drop no further than 3'3" below the bottom of the canoe. The sliding outrigger seat cannot extend further than four feet from the hull. And, the canoe cannot carry more than 107 square feet of sail area.[208] The International class were predominantly of the yawl rig, consisting of a foremast and mainmast each carrying a triangular sail; yet, there were some sloop rigged craft in this class. Each year, these canoes raced for a perpetual trophy known as the International Challenge Cup. "It was successfully defended by the United States in 1886, 1888, 1890-2, 1895, 1913-14, and was won by England in 1934."[209] The Championship regatta consisted of three races. The first two races were six-mile around-the-bouy races; and the third was a long windward/leeward race.[210]

These racing canoes are much smaller and slightly different in form than those of the Chesapeake, but they are nonetheless sailing canoes. The same component systems in the Chesapeake racing log canoes is present in these craft. The Mariner's Museum has a fine example of an International

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[208]Ibid., 19-21.

[209]Ibid., 28.

[210]Ibid., 29.

class decked canoe in its Small Craft Collection.[211] (Fig. 28)

West Indies and South America

In this section, the author will examine one type of log craft from Brazil and briefly investigate the use of the log canoe in the Caribbean. There is a form of log craft, which probably did not occur on the Chesapeake Bay, which is a common type in Brazil. The *jangada* is basically a multi-log sailing raft, constructed with wooden pins. It has a form of sliding centerboard, and a paddle used for steering.[212] The hull usually consists of five logs which taper in from stern to bow. The logs are smoothed and curving slightly aft, enabling the raft to ply more efficiently through the water.[213]

The sail is a small triangular sail, lashed at intervals to the mast; and to a narrow boom at the clew of the sail. The mast is in the forward one-third of the craft, and is held in place by a "sawhorse" type of stand. The mast is able to be canted to port or starboard, forward or

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[211]The Much Quicker was built by H. Lansing Quick of Yonkers, New York, circa 1906. She is constructed of white cedar, the hull being of lapstrake construction. She is 16'0" in length, 2'6" in beam, draws 1'3", and carries 90 square feet of sail on two masts. She is also equipped with a sliding outrigger seat.

[212]Angelucci, 13.

[213]Ibid., 13; Johnstone, 227-8.

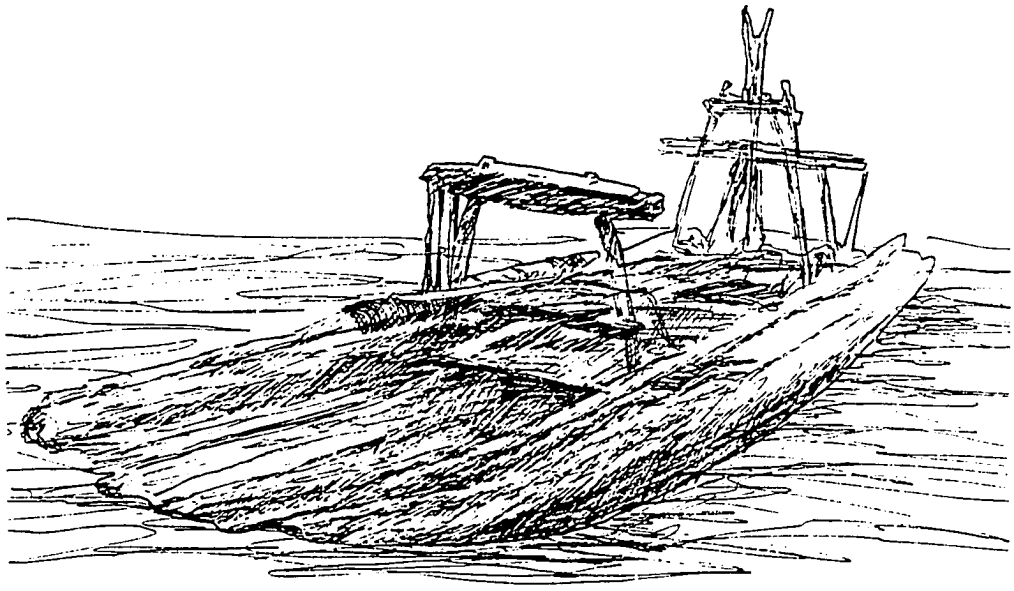

Figure 29. The *jangada*. From the collection of the Mariner's Museum

aft depending on the weather conditions. Paul Johnstone attributes the addition of the sail and the centerboard to the Europeans.[214] The *jangada* is used primarily as an in- and offshore fishing craft in Brazil (Fig. 29).

The dugout canoe has had considerable impact in the Caribbean, mainly functioning as a means of transportation between islands.[215] It is known that the aboriginal canoes existed in great numbers upon the arrival of Columbus in the Caribbean. However, it is not known if the canoes "were built up with planks from the dugout," which Marshall McKusick believes would signify a more advanced type.[216]

Sailing canoes were hewn from a single log. Once it had been hollowed, the natives filled it with water and boiled it with hot rocks. Then, the water was poured out and the sides of the canoe were pulled further apart. Crosspieces were nailed into place to preserve the desired width. This same process is used on the Chesapeake punt and the whaling canoe of the Pacific Northwest. The sides were then planked to a desired amount of freeboard, as found on

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[214]Angelucci, 13.

[215]Marshall B. McKusick, "Aboriginal Canoes in the West Indies," Yale University Publications in Anthropology, No. 63, 1970, 3.

[216]However, Mckusick states that "it is difficult to conceive of a successful sailing canoe built entirely from a single hollowed log and lacking planking for use in these rough channel waters" (Ibid., 4-5).

the working and racing log canoes of the Chesapeake.[217] Mckusick and Pierre Verin translated the 1867 Caribbean writings of Jean Baptiste Du Tertre. Du Tertre described two types of canoe, a pirouge and a *coulialas*. The pirouge is described as simply two planks attached to a log base.

The pirouges were quite large having a beam averaging six or seven feet and about forty feet in length. They can carry 50 people and are propelled by oar. The *coulialas* were never longer than twenty feet and had an average beam of nearly four feet. They were double-enders propelled by oar, and large enough for only one or two men.[218]

The canoes of the Caribbean were used both for transportation and fishing. There were many different sizes of canoes, depending on the size of tree and the specific function it would fulfill. They were propelled by both oar and sail. All share common features with the canoes of the Chesapeake Bay.

In the following section, the author will look at two modern sailboats which share many of the same component features as the acing log canoes, but are constructed in a very different manner with different materials.

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[217]Ibid., 5-6.

[218]Jean Baptiste Du Tertre's descriptions were included as part of a work translated by McKusick and Verin entitled, Translation of French Documents Relating to the Island Cairb Culture. Du Tertre's description is included in Mckusick's "Aboriginal Canoes in the West Indies," 6.

Modern redefinition

The component systems of the Chesapeake Bay racing log canoe are redefined in modern materials and construction. Two sailboats, the Australian 18 skiff; and the Inland Lake Scows, are good examples of this redefinition. The two sailboats offer a sailing experience as exciting as that of the racing canoe. This is due in large part to similar relationships between the component systems of the craft, namely the hull, rig, and counterbalance.

The Australian 18 skiff is perhaps one of the fastest sailing craft to be developed. The hull of the skiff is eighteen feet in length and about six feet in beam. The bow is sharp, with no curvature or rake, and the stern is flat and transom shaped. The hull is constructed out of a lightweight, but strong composite fiberglass. Whereas the racing canoe hulls are extremely heavy, the 18's hull is very lightweight (Fig. 30).

The skiff has only one mast, curved at the top, and carries a large mainsail. The mast is tightly anchored to the hull with shrouds. A small jib is flown from the mast and a long bowsprit, extending from the bow. For running downwind and on broad reaches, a huge spinnaker is set flying. With the tremendous amount of sail area and very light hull, large racks are used for transferring crew weight outboard of the hull.

The rack is "V" shaped, and extends from the centerline

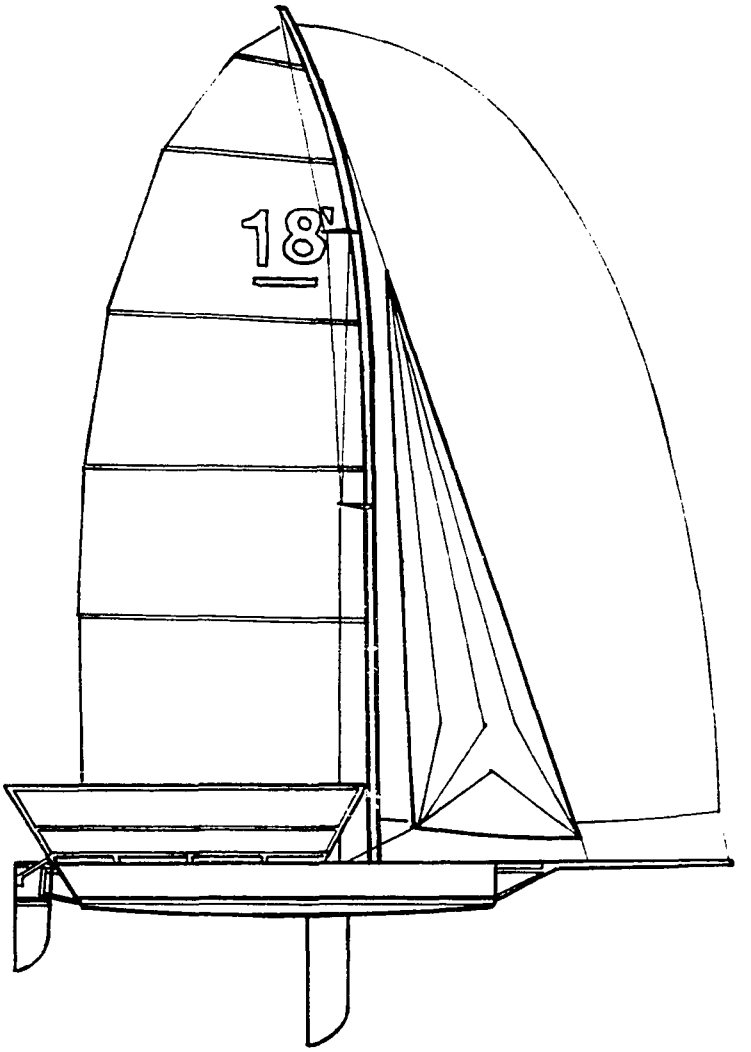

Figure 30. The Australian 18 skiff. From a drawing (Regate International, 18)

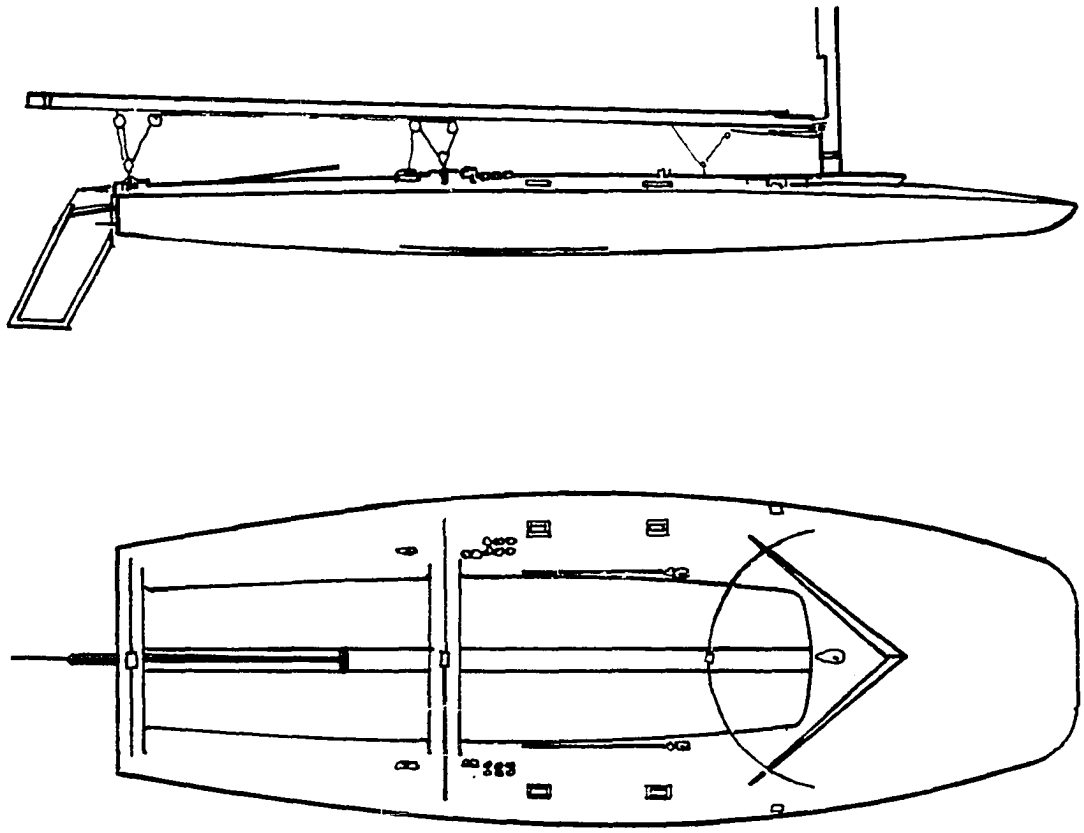

Figure 31. The C-class scow. From a drawing by Melges Boat Works (Esterly, 112)

of the skiff some seven feet beyond each side. The racks are covered with a taut netting which allows the crew to move around without falling through. The crew of three, supported by trapeze wires on the mast, sail the skiff from the racks. In heavy wind conditions, the crew is usually standing on the edge of the rack, in order to keep the boat stabilized. Also aiding in counterbalance is a centerboard placed just aft of the mast.

The Australian 18's compete in regattas around the world, but their home is in Sydney Australia. The 18's are blindingly fast, reaching speeds over 20 knots. They are comparable in handling to the racing canoes, because they have the same basic relationship between the component systems.[219]

The Inland Lake Scows are renowned racing machines among sailors. They range in length from the shortest, the class MC scow at 16', to the 38' class A scow. "The earliest [scows] date back before the turn of the century, long, long before planing hulls and multi-hulls became popular."[220] The scows are flat bottomed boats with a transom-stern and a blunt bow (Fig. 31). None of the scows have much depth, as they are designed to move across the

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[219]"Speed Sailing," Sail, February 1987, 66-7; "18 Pieds Bethwaite," Regate International, Numero 4, Juin-Juillet 1988, 18.

[220]Diana Eames Esterly, Early One-Design Sailboats (New York: Charles Scribner's Sons, 1979), 106.

water rather than plying through it. The C-class scow is 20' in length and seven feet in beam, the greatest beam being at midships on all classes. The E-class scow is 28' in length, and the A-class scow is 38' in length. The scows are mainly concentrated on the rivers and waterways of Illinois, Minnesota, and Wisconsin but are sailed in many parts of the United States.

The scows have two different rigs. The C-class scows are cat rigged, a single mast carrying a 260 square-foot mainsail and no jib. All of the other scows are sloop rigged, one mast carrying a mainsail, jib, and a spinnaker. The mast on the scows is secured to the hull with three permanent stays and two running backstays, which can be released and tightened on alternating tacks. The mast can also be raked aft to depower the sail in heavy wind and raked forward for running downwind.

The mainstay of counterbalance is crew weight. In rough weather, up to five or six crew are needed to stabilize the C-class scow, in light air, only two or three are needed. On the A-class scow, as many as 10 or 12 crew may be needed to keep from capsizing. As the scows are not equipped with outriggers or spring boards, the bilgeboards and hiking straps are utilized. There are two bilgeboards on each of the scows, just forward of midships and canted outboard about 15 degrees. They serve the same function as a keel or centerboard. When the boat is heeled, crew

members can stand out on the weather bilgeboard, transferring their weight outboard, and settling the craft. Other crew members can anchor their feet under hiking straps and lean outboard of the hull.[221]

Like the racing log canoes, the scows are best sailed at a slight angle, allowing for less wetted surface. Also like the canoes, the scows are really designed for inland waters and sheltered areas where "seas cannot build up."[222] Again, like the Australian skiff, the scows have the same basic interrelation of component systems as the racing canoes. It is this specific relationship between the design of the hull; the above-average amount of sail area; and ability to get crew weight outboard the hull that create these spectacular craft.

In this chapter, the author has examined the Chesapeake Bay log canoe in context with a wider world He has compared the experiences of canoe design, construction, evolution, and use of different areas of the world, at different times, with the experience on the Chesapeake. Thus, providing a deeper understanding and appreciation of the heritage and design of the racing log canoe; and that ancient traditions, are, in fact still alive on the Chesapeake Bay.

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[221]Ibid., 108-113.

[222]Ibid., 109.

CONCLUSION

The primary objective of this thesis was to document the continuing traditions of the Chesapeake Bay racing log canoe--detailing the influences have impacted and perpetuated the craft. Several questions served as the impetus for this work:

1. What are the present design components/systems of the racing canoes?
2. What is the evolutionary process from which the racing canoes developed from the Indian dugouts on the Chesapeake?
3. What is the nature of the relationship between the racing log canoes and the Chesapeake Bay?
4. What is the nature of the relationship between the racing canoes and canoes in other areas of the world--both in prehistoric and historic times?
5. What is the nature of the relationship between the components/systems of the racing log canoes and those of modern sailing craft?

A major theme of this thesis is to analyze and interpret the racing log canoes as significant artifacts of material culture. In order to accomplish this, the author analyzed the canoes from three different perspectives. The first perspective was a detailed analysis of the design and construction of the racing log canoe. Included in this

perspective was a detailed history of the racing canoe as a specific type. The second analysis of the racing canoe involved its evolution from the Indian dugout on the Chesapeake Bay; and the nature of the relationship between the artifact (the canoe) and the influences which impact its design, construction, and use. The final perspective involved analyzing aspects of the Chesapeake log canoes in relation to patterns of similar experiences in other parts of the world at different times. Thus, these approaches produced a multi-tiered context for better understanding and interpretation of the racing log canoes.

In Chapter Two, the author first, detailed and analyzed the design and construction of the racing log canoe. He examined the process of hull construction and design. The sail rig, and then the system of counterbalance were separately detailed. The author then discussed how the three component functioned as a complete system. The second part of this analysis was a concise history of the racing canoe as a specific type on the Bay.

In Chapter Three, the author examined the evolution of the log canoe on the Chesapeake Bay. The objective of this chapter was two-fold: first, to understand the process from which the racing canoe evolved as a specific type; and second, to understand the influences (be they economic, cultural, geographical, or social) which influenced the evolution of the log canoe. The analysis provided a greater

understanding of the relationship between the artifact of material culture (the canoe) and its contextual environment (the Chesapeake Bay).

In Chapter Four, the author further develops the context of the log canoe by investigating different patterns and experiences, comparable to those in the Chesapeake. He began by examining the nature of the log canoe in the Atlantic and Pacific regions, detailing similar patterns of construction, design, evolution, and use of the log canoes. The author then examined log craft from both North and South America; and concluded with an investigation of how the basic components of the racing log canoe, have been reinterpreted in two sailboats of modern designs and materials.

It has been the objective of the author to provide a detailed analysis of the Chesapeake Bay racing log canoes. As significant artifacts of material culture, both to Chesapeake and maritime history, their heritage and contributions can no longer be ignored. Also, for aesthetic reasons, it is important that the traditions as well as the racing canoes themselves be perpetuated, so that future generations can marvel at them. Thus, the purpose of this thesis has been to analyze and interpret a significant maritime cultural resource and to depict the importance of material culture in human lives.

APPENDIX I

The Racing Canoes

Magic

LOA: 34'7" **B:** 6'7" **D:** 1'11" **SA (ft^2):** 970 **Shape:** DE
Builder: Charles Tarr **Built:** 1894 **Location:** St. Michaels
GC: ten including: 1927, 1932, 1933 **FM:** 50'0 **MM:** 32'0
Aft QB: 3'$3^{3/4}$"

•

Jay Dee

LOA: 35'0" **B:** 8'4" **D:** 1'11" **Shape:** TS
Builder: John B. Harrison **Built:** 1931
Location: Tilghmans Island **Aft QB:** 6' $10^{1/2}$"

•

Flying Cloud

Builder: John B. Harrison **Built:** 1932
Location: Tilghmans Island **Shape:** TS **GC:** 1934

•

Billie P. Hall

Builder: Charles Tarr **Built:** 1903
Location: St. Michaels **Shape:** DE

•

Island Bird

Builder: W. S. Covington **Built:** 1880
Location: Tilghmans Island **Shape:** DE **GC:** six

•

Island Blossom

LOA: 33'0" **Builder:** W. S. Covington **Built:** 1893
Location: Tilghmans Island **GC:** seven
Anchorage Cup: 1901 **FM:** 44'0" **MM:** 40'0"

•

Mystery

Builder: Henry Sinclair **Built:** 1933 **Location:** Oxford
GC: 1962

•

Silver Heel

Built: c.1900 **Location:** Kent Island

Daisy Belle

•

Oliver's Gift

Builder: Oliver Duke **Built:** 1941

•

Noddy

Builder: Oliver Duke

•

Sandy

•

S. C. Dobson

•

Persistence

LOA: 32'0"

•

Rover

•

Island Image

Built: 1885 **LOA:** 28'6
FM: 40'0" **MM:** 34'0"

•

Eagle

•

Mary Ann

•

Island Lark

Builder: James Lowrey **FM:** 44'0" **MM:** 38'0"

•

Spirit of Wye Town

Builder: Sidney H. Dickson **Built:** 1976 **LOA:** 26'6"
B: 5'0" **Location:** St. Michaels **FM:** 39'0" **MM:** 34'0"
SA (ft^2): 700

•

Kaynoo

LOA: 22'0 **Builder:** Henry Freeman **Built:** 1876
SA (ft^2): 260 **Location:** Poquoson VA
Two log canoe

•

Mayflower

Builder: Wesley Stevens **Built:** 1880 **Location:** Rock Hall
GC: 1942

•

Belle M. Crane

LOA: 38'0" **Builder:** Greenbury Coffin **Built:** 1897
Location: St. Michaels

•

Faith Hanlon

Builder: William Hanlon **Built:** 1976 **LOA:** 30'0"

•

Tenaceous

Builder: John Chamberlin **Location:** Bozman **Built:** 1970's

•

War Eagle

LOA: 25'0" **Built:** c.1850's **Location:** Talbot Co.

•

Mary

LOA: 30'0" **Builder:** Thomas Kirby **Built:** c.1870's
(Keel canoe)

•

Dashaway

LOA: 27'11 1/2" **Builder:** Robert D. Lambdin **Built:** 1877
Location: St. Michaels

•

Chesapeake

Builder: Robert D. Lambdin **Built:** 1893
Location: St. Michaels

•

Daisy

LOA: 40'0" **B:** 8'0" **Builder:** Robert D. Lambdin
Built: 1891 **Location:** St. Michaels
(three masted)

•

Shoo Fly

•

Valiant Lady

•

Margaret P. Hall

LOA: 32'5" **B:** 6'8" **D:** 2'1" **Builder:** Charles Tarr
Built: 1893 **Location:** St. Michaels

•

Maybelle

Builder: Greenbury Coffin **Location:** St. Michaels

•

Island Belle

Builder: W. S. Covington **Location:** Tilghmans Island

•

Golden Rod

Builder: Crit Harper **Location:** St. Michaels

•

Niemeyer

Builder: John Hadden **Location:** Baltimore

•

May

Built: c.1850's **LOA:** 30'0"

•

Douglas

Builder: Samuel Harrison **Built:** c.1850's
Location: St. Michaels

•

Ogle Jr.

Builder: Ogle Tilghman **Location:** Bennetts Point **LOA:** 30'0"

•

Mary Rider

LOA: 27'0" **Builder:** Jim Lowrey **Built:** 1877
Location: Tilghmans Island
GC: 1928, 1929, 1930

•

Witch of the Waves

•

Belle Helen

•

Togwogh

•

Reba Maine

•

Pig Witch

LOA: 22'0"

•

Lively Lady

LOA: 21'0"

•

Bay Ridge

•

Sam

•

Island Bride

Builder: W. S. Covington

•

Edmee S.

Built: late 1930s

•

William H. Green

logs hewn by Oliver Duke, still to be assembled

The information listed above is, of course, incomplete and subject to change. This information was compiled from numerous sources, and may in fact be incorrect, in some cases.

LEGEND

Loa: Length over all measurement
B: Beam; measurement at the widest part of the hull
D: Draft; how much water is displaced by the hull
Builder: Who constructed the canoe
Built: Date the canoe was constructed
Location: Where the canoe was built or where the builder was located
Shape: The shape of the hull from a topside view; **DE:** double end, the shape of most of the canoes; **TS:** transom-sterned, where the canoe has a flat stern
SA (ft^2): Square footage of working sail area
GC: Govenors Cup; when it was won and how many times
FM: foremast height
MM: mainmast height
Aft QB: aft quarter-beam measurement

APPENDIX II

APPENDIX III

APPENDIX IV

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