

NAUTICAL ARCHAEOLOGY

GILBERT M. SMITH, MASTER BOATBUILDER
OF LONG ISLAND, NEW YORK

A Thesis

by

DARIA ELIZABETH MERWIN

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

MASTER OF ARTS

May 2000

Major Subject: Anthropology

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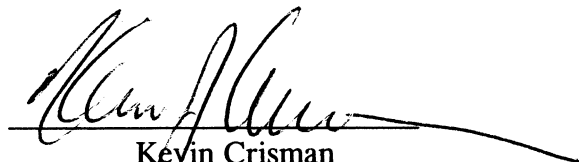
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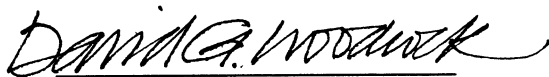
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ABSTRACT

Gilbert M. Smith, Master Boatbuilder of Long Island, New York. (May 2000)

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The second half of the 19th century in maritime America was an era marked by a rich variety of vernacular watercraft types adapted to a wide range of local needs and traditions. The Great South Bay, located off Long Island, New York, was home to several variants of small work and pleasure craft. This thesis is an examination of Long Island boatbuilding via a study of the career of the most prolific and best known local boatbuilder, Gilbert Monroe Smith (1843-1940).

It is estimated that Gil Smith built four hundred vessels from the 1860s through the 1930s, the twilight of wooden boat- and shipbuilding in coastal southern New England. Smith's work represents the culmination of decades of traditional boatbuilding. This tradition, along with environmental and economic constraints, helped to shape Smith's hulls.

ACKNOWLEDGMENTS

My study of Gil Smith's boats was the result of discussions with my father, Charles Merwin, and with Frank Turano of SUNY Stony Brook. Their memories of the most beautiful vessels ever to ply the Great South Bay off Long Island piqued my curiosity, and started my research.

Fred Hocker, formerly of Texas A&M University, encouraged me to pursue the study of small craft, and his comments on my presentation of some of this material at the 1997 Society for Historical Archaeology 30th Annual Meeting in Corpus Christi and on my research proposal were instructive. I am grateful to Donny Hamilton and Kevin Crisman of Texas A&M, who both graciously accepted last-minute changes to my thesis committee. Their comments, along with those of David Woodcock, have been very helpful. I would like to thank my colleagues at Texas A&M, including Liz Baldwin, John Bratten, Scott McLaughlin, Matthew Pridemore, David Stewart, and Rich Wills, for their friendship and good conversation.

Al Terry of the Long Island Maritime Museum and Marsha Hamilton of the Suffolk County Historical Society willingly shared their time and expertise. I have also benefitted from sitting in on some of the technical, but lively, discussions of the on-line Catboat Association mail list (<http://www.catboats.org>). It is heartening to know that the legacy of the Great South Bay catboat is alive and well, in cyberspace and on southern New England waters.

My boss and mentor at the Institute for Long Island Archaeology, David Bernstein, has always been supportive of my research. His understanding of the fine art of juggling academic and contract work obligations is most appreciated. My siblings, especially Alicia, have helped keep me focused.

Finally, I would like to thank my husband, Michael Lenardi. Not only did he lend his mastery of computer graphics to several of the illustrations in this thesis, but also his unflagging patience and good humor when all I could talk about was boats.

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INTRODUCTION

The waters surrounding Long Island, New York (Figure 1) have borne a variety of boats and ships for centuries. In Suffolk County, the eastern half of the island, boat- and shipbuilding were important industries since the earliest years of European settlement in the mid-17th century (Bayles 1874). The industry climaxed during the middle of the 19th century, though several yards operated into the 20th century. Wooden *shipbuilding* on Long Island is well-documented, especially for the boom years in the 19th century (e.g., Minuse 1983; Welch 1993). However, information about *boatbuilding* on eastern Long Island is fragmentary and sparse.

The objective of this thesis is two-fold: to present an historical overview of boatbuilding in eastern Long Island, and to examine in detail the career of the area's most prolific boatbuilder, Gilbert Monroe Smith (1843-1940).

The evolution of local boat types is closely linked to environmental and economic constraints. In the case of at least one boatbuilder though, changes in design also reflect individual preference and skill. Gil Smith was Suffolk County's best known boatbuilder during the late 19th and early 20th centuries. It is estimated that Smith built

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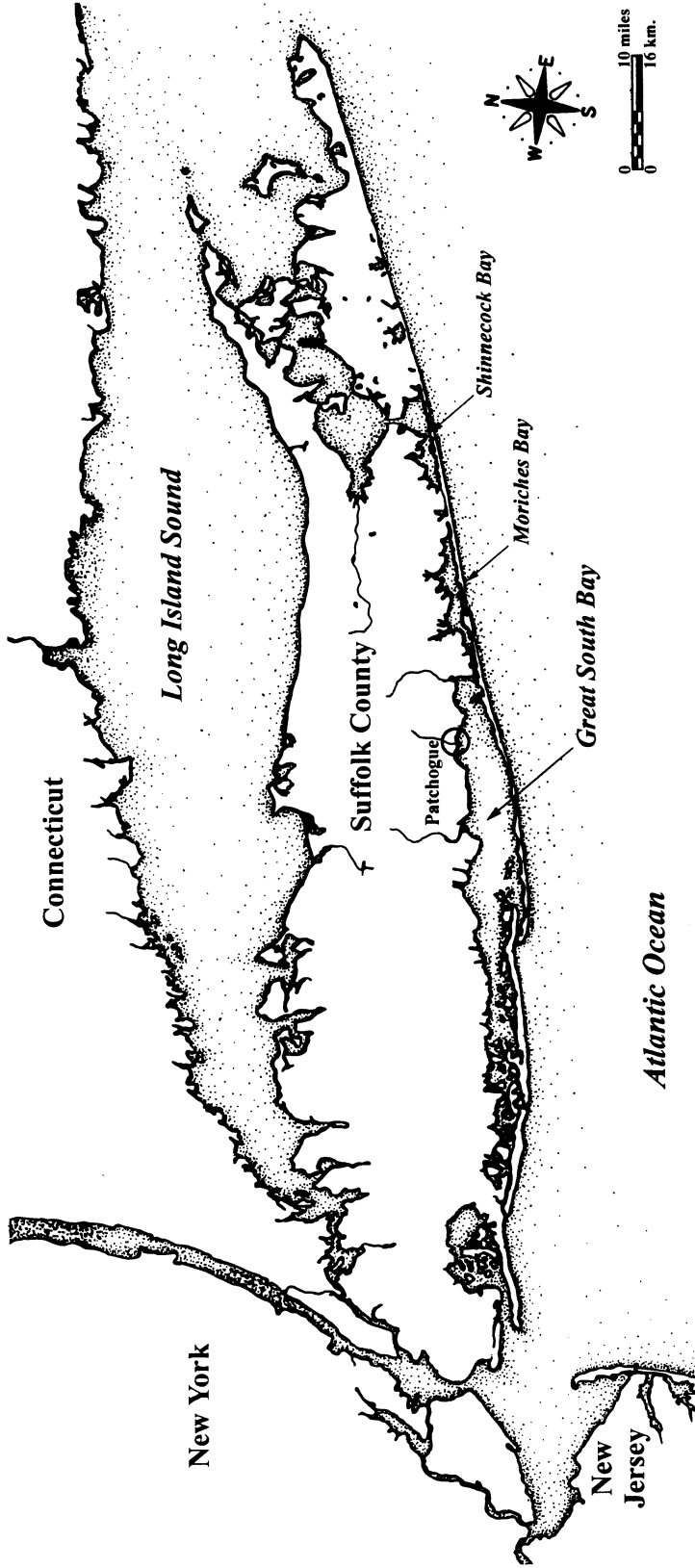


FIGURE 1. Map of Long Island, New York.

four hundred vessels over the course of his career spanning from the 1860s through the 1930s (Hix 1986). By examining the work of this one craftsman, and comparing his hulls to those of colleagues in the southern New England region, a fuller understanding of local boatbuilding can be garnered.

Environmental Setting

Fish-shaped Long Island is the southeastern projection of New York State. It is approximately 125 miles (200 km.) long, with an average width of 15 miles (25 km.), and contains several natural protected bays and harbors (Figure 1). The physiography of the island is the result of deposition associated with the most recent Wisconsin glacialiation, and subsequent erosion. The maximum extent of the ice sheet, attained some 18,000 years ago, left a spine-like ridge through the center of the island called the Ronkonkoma terminal moraine. The eastern terminus of the Ronkonkoma moraine is the South Fork of Long Island. The north shore, including the North Fork, is the island's most recent glacial feature, formed by the Harbor Hill recessional moraine, approximately 15,000 years ago. Glacial outwash of unstratified till was deposited between the moraine, and also to the south of the Ronkonkoma moraine. Thus, the south shore of Long Island is characterized by flat, sandy beaches while the north shore has an irregular coastline of hills and boulder fields (Sirkin 1995).

Coastal topography was the most important factor in determining the location of various types of maritime industries on Long Island. The north shore contains several

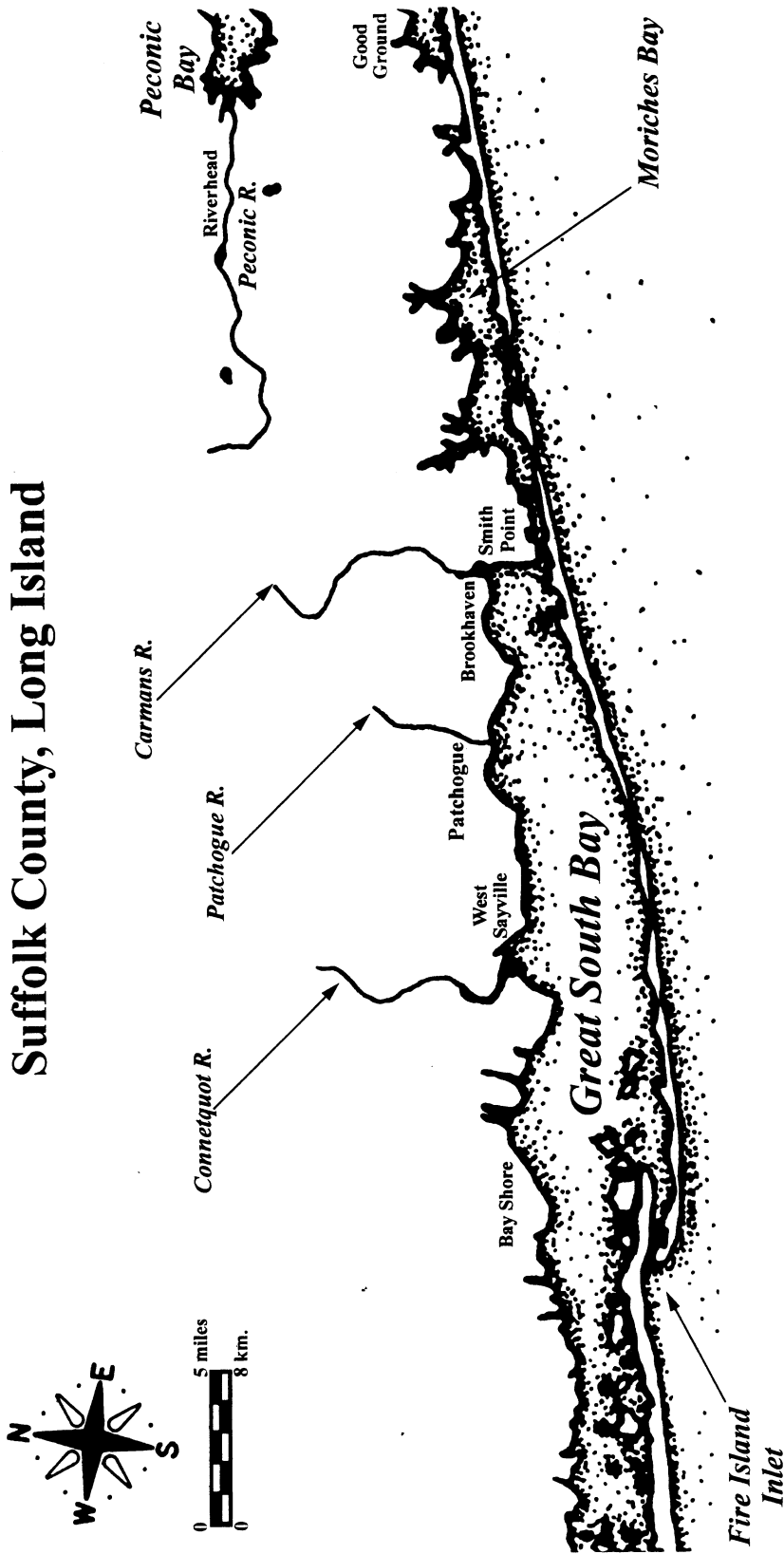
protected deep water harbors, while the south shore consists of shallow lagoon-like embayments. As a result, construction of large ships was the business of north shore yards, while smaller boats with minimal draft (depth) were produced at south shore yards. The Great South Bay off the south shore was home to many boatyards over the past three centuries.

The Great South Bay is roughly bounded by Fire Island Inlet to the west, and Smith Point to the east (Figure 2). It measures approximately 25 miles (40 km.) long, with a maximum width of 6 miles (10 km.). The north side of the bay is lined by the coastal villages of Brightwaters, Bay Shore, Islip, Great River, Oakdale, West Sayville, Sayville, Bayport, Blue Point, Patchogue, Bellport, and Brookhaven. The bay is enclosed on its south by a barrier bar, the Fire Island National Seashore.

The Great South Bay is shallow throughout, with an average depth of 6 feet (2 m.) at high tide. The shallow nature of the bay has been perhaps the most important constraining factor in hull shape of local watercraft.

Numerous creeks and streams empty into the Great South Bay. Among the larger perennial streams are Champlin Creek, Connetquot River, Patchogue River, Swan River, and Carmans River. Most of these north-south waterways are navigable by small craft. Early colonists recognized the suitability of Long Island's many streams for water-powered mills, and it was not long before the streambanks also hosted maritime-related industries.

Suffolk County, Long Island



Atlantic Ocean

FIGURE 2. The Great South Bay, located on the south shore of Long Island.

Maritime History of Long Island

The following discussion provides a brief overview of the maritime history of Long Island, from the prehistoric period through the end of the 19th century. A glossary of nautical terms used is provided in Appendix A.

To date, virtually no archaeological evidence for boatbuilding by Native Americans living on Long Island prior to European contact has been encountered. There is however circumstantial evidence for boat use around the island, including artifacts made from Connecticut and Rhode Island soapstone found on Long Island sites, fish bone of deep-water species preserved in middens, and a cultural affinity between the stone tools of Long Island and coastal Connecticut, Rhode Island, and southeastern Massachusetts, where water would be the most obvious connection (cf. Ritchie 1965:148, 166).

Early European explorers and colonists (e.g., Wood 1865 [1634]; Danckaerts 1913 [1679-1680]) left written accounts describing the distributional ranges of two different watercraft types, the northern bark canoe and the southern dugout canoe. The ranges of these types overlapped in southern New England. Other types of watercraft may have been used, including log rafts and boats made of woven reeds. However, documentary evidence suggests that the dugout canoe may have been the most common craft used by Native Americans on Long Island. After his 1524 tour of southern New England, Verrazzano attested to the presence of dugout canoes here, describing them as

“little boats with a single log of wood, hollowed out with admirable skill... and they go to sea without any danger, and as swiftly as they please” (Verrazzano 1841 [1524]).

North of Long Island, Europeans apparently adopted Native American bark canoes for exploration, and later for use in the fur trade (Leshikar 1988:14). In the early years of the southern New England and Mid-Atlantic colonies, dugout canoes were probably used often because they were easily acquired by barter or force. In Virginia, English woodworkers modified the local dugout to satisfy the European notion of what constituted a good boat. Here the dugout was transformed by enlargement, and by sharper ends, flatter bottoms, and even keels for improved handling and stability. Eventually, several logs were joined to form a single hull, and rigging for sail power was added. Descendants of these early modified dugouts survive today in the Chesapeake Bay area as bugeyes and racing canoes (Chapelle 1935:276).

On Long Island, it seems likely that small craft such as European bateaux (relatively heavily built flat-bottomed boats with raked ends) were used during the Colonial period, and Native Americans appear to have readily adopted the colonists' material culture. Early in the post-Contact period, eastern Long Island Native Americans were widely known as skillful whalers (Salwen 1978:162; Strong 1989). Pre-Contact Native Americans were most likely were already familiar with whales, as the animals were occasionally scavenged when one washed ashore. Full-scale hunting of whales was spurred on by a demanding European market. As the English dispossessed them of their land, some Native Americans turned to the water as a means

of support. In 1700, Martha Tunstall Smith owned a whaling station at Smith Point manned by a crew of Native Americans. Their catch was an average of twenty whales each winter (Reeves 1885:66). As late as 1855, 51 of 53 adult males living in the Shinnecock community were listed as mariners and fishermen in the New York State Census (cited in Strong 1989:39).

The English colonists themselves probably looked to the mother country for boats in the early years. The ships that brought the colonists across the Atlantic often carried, or were accompanied by, one or more small vessels, such as a shallop or longboat (Steffy 1988:114). As the number of ship carpenters, blacksmiths, sailmakers, and other craftsmen increased, and the initial struggle for survival in the New World subsided, more watercraft were constructed.

The Dutch colonists of New Amsterdam may claim the earliest European vessel built in the Long Island area. When Adriaen Block's ship *Tyger* accidentally burned in New Amsterdam, the Dutch with the help of Native Americans built the vessel *Onrust* (*Restless*) from the remains. The 44 foot (13.4 m.) *Onrust* was launched in the spring of 1614, and was used to explore Long Island, coastal Connecticut, Block Island, Rhode Island, and Cape Cod to Massachusetts Bay (Williamson 1959). The English colonists of Long Island probably started producing their own watercraft during the first half of the seventeenth century, not long after the launching of the *Onrust*.

As discussed above, the coastal geography of Long Island was perhaps the most important factor in determining the location of various types of maritime industries.

The North Shore is indented with several protected deep water harbors, while the South Shore consists of shallow lagoon-like embayments. As a result, construction of large ships was the business of North Shore yards, while smaller boats with minimal draft were produced on the South Shore. Colonists on both shores relied upon watercraft for trade, travel, communication, and fishing.

One deep North Shore harbor that hosted early Colonial shipbuilding is Oyster Bay. As early as 1681, the Town of Oyster Bay granted John Newman a lot for "the building of vessels and for laying his timber in" (Willits et al. 1916). At least one dozen ships were built and launched at Oyster Bay between 1745 and 1775. These ships included packet sloops for transporting passengers and light cargo, single-masted gaff-rigged sloops for coastal trading, two-masted fore-and-aft rigged schooners, and square-rigged brigs (Rossano 1989). Smaller fishing boats were also most likely constructed at Oyster Bay.

Vernacular small craft have been produced along the Great South Bay off the South Shore of Long Island for the past three centuries. Early in the Colonial period boatbuilders here produced canoes, scows, and small flat-bottomed boats for use on the shallow bay and the rivers that empty into it (Reeves 1885:62). These small vessels were used for the exchange of farm products and news between the small villages on the bay.

Eastern Long Island settlements were founded in the mid-17th century as offshoots of already established New England colonies. Most of the English founders of

Southold arrived from New Haven in 1640, while in the same year a group from Lynn, Massachusetts settled in Southampton (Bailey 1949). Waterborne traffic between the mainland and Long Island villages was conducted regularly over Long Island Sound in small craft. Principal exports from the island were surplus farm produce, whale and fish products, and later brick, sand, gravel, and firewood. Highly valued imports to Long Island included manufactured goods from England such as ceramic tablewares, and molasses and rum from the West Indies (Reeves 1885:62).

By the mid-17th century, most Long Island ports were visited regularly by ships from both the northern and southern colonies and the West Indies. Prominent families controlled much of the mercantile activity around the island with minimal involvement of the British Colonial government. This situation changed markedly in the years immediately preceding the American Revolution, culminating with the virtual cessation of all maritime trade during the war, between 1776 and 1783.

Waterborne activities during the War for American Independence are fairly well documented through newspaper accounts, and personal letters and diaries. The waters around Long Island, and especially New York Harbor, were among the first the British sought to control. New York was ideally located to control both the northern and southern colonies, and the harbor was a year-round port which was already a major hub of coastwise and trans-Atlantic trade. At the Battle of Long Island in August of 1776, the British defeated rebel forces and gained control over New York and its harbor for the remainder of the American Revolution.

Early in the war, British soldiers were ordered to destroy every ship and boat, wharf, warehouse, and all naval stores on Long Island, to prevent the patriots from raising a navy (Sands 1988:149). The British efforts were not entirely successful, and guerrilla-like warfare was conducted on the waters surrounding Long Island, primarily with small fleets of whaleboats. These small craft, which originated as ship's boats, were used for espionage, smuggling, and even kidnaping, although their main activity was raiding (Collins 1944). Whaleboats had pointed ends, low gunwales, and were often planked with lapstrakes. Propelled by sail or rowed, they were fast, silent, and could be hauled overland and easily hidden. The advantages of the whaleboat ensured that it would be in use for decades after the Revolution, and even after the demise of the whaling industry on Long Island. The direct descendant of the 18th-century whaleboat was the lifeboat used until early this century.

After the British fleet left New York waters in 1783, Long Islanders were faced with the task of rebuilding the island's economy. Once again they turned to the sea for their livelihood. Harborworks were re-established, and by 1797, a shipyard owned by John Willse was operational in Port Jefferson Harbor (Welch 1991:36). While the War of 1812 dampened the resurgence of maritime trade, as British privateers constantly threatened American ships along the eastern seaboard, shipbuilding was spurred by the conflict and Long Island builders contributed to the United States Navy during the early years of the 19th century. Three gunboats built at Smith Point in 1806 were used by Stephen Decatur at Tripoli, while at least one gunboat was built by Thomas Bell of Port

Jefferson to defend American traders during the War of 1812 (Reeves 1885). Still, the purpose of the majority of vessels built on eastern Long Island was comparatively mundane: they were fishing boats.

Fishing is an important component of Long Island's maritime heritage.

Prehistoric middens along the coast preserve fish and shellfish remains of long-ago meals. Early European colonists such as Daniel Denton (1845 [1670]:5) noted the abundance of these foods, and they provided an incentive for coastal settlement. The waters surrounding the island are home to dozens of useful species including alewives (also known as menhaden or mossbunker), sea bass, black fish, cod, flounder, mackerel, perch, porgy, eel, oyster, clam, scallop, mussel, crab, lobster, and whale.

The menhaden industry dates to the late 18th century on Long Island. One early account describes the catch of 250,000 fish from one haul of the seine at Town Harbor, Southold in 1797 (Reeves 1885:72). Whole menhaden were originally used as fertilizer, but it was found that oil derived from the fish was more marketable, as it was used for tanning and dressing leather, rope making, and as a paint base. The first tryworks to extract menhaden oil was established on Peconic Bay in 1847 or 1848 (Reeves 1885:73).

Of course, fish were also taken from Long Island waters for food. By 1795, Greenport and Orient fishermen were engaged in the cod fishery off Newfoundland, and local boatbuilders turned out fishing smacks (a coastal sloop with wells for storing live fish or fish on ice) from their yards. A typical seasonal round for a crew of six

aboard a fishing smack during the 1830s was as follows: in March, cod were taken off Montauk and in Block Island Sound to be sold in New York City; by early May, the smack would be at Sandy Hook to catch mackerel; in mid-June, the crew returned to Montauk and the Block Island and Vineyard sounds for sea bass; and by early October, the sea bass were succeeded by cod at the same location (Reeves 1885:69).

Shellfishing also provided a livelihood for generations of Long Islanders, and oystering in the Great South Bay had started as early as 1679 (Radcliffe 1949:4). However, organization of the shellfishing industry was the work of Dutch immigrants who settled at West Sayville on the bay in the mid- to late 19th century. The close-knit Dutch community played an important role in the development of the oyster industry, when West Sayville dominated the business with its famed Blue Point oysters (Taylor 1983, 1989). Approximately five hundred sailboats worked one thousand acres of oyster beds at the bottom of the Great South Bay around 1880 (Morrison 1996:37).

The boom years for shellfishing in the Great South and Peconic Bays during the late 19th century were curtailed when pollution and over-fishing resulted in the virtual decimation of native shellfish colonies (Radcliffe 1949:4-5). Attempts to revive the flagging industry with aquaculture using seed oysters from Connecticut met with varying degrees of success (Taylor 1983). The problems of pollution and over-fishing persist to this day.

American shipbuilding experienced a golden age during the middle of the 19th century, spurred by advantageous trade conditions, cheap raw materials, and a suitable

labor force. Long Island shipbuilding and seafaring reflected this national trend, so that in 1880 an estimated one-third of the adult male population of Suffolk County (approximately 3,000 individuals) was involved with some aspect of maritime commerce (Reeves 1885:64).

Nineteenth-century shipbuilding on eastern Long Island is well-documented (see especially Welch 1991, 1993), whereas boatbuilding here is not. While boats initially may seem mundane compared to ships, it is their smaller size that permitted builders to experiment with design and construction techniques. Failure simply was not an option for builders of large ocean-going ships; any potential problem with a small boat was far less costly. Thus, boatbuilders were better prepared to adapt to the economic challenges of the mid- to late 19th century than their shipbuilding peers.

The opening of inland canals to barge traffic, and the replacement of sail with steam for coastal trade and travel, had a negative effect on the agricultural and shipping industries on Long Island. Perhaps the most significant impact on local ship- and boatbuilding was made by the completion of the railroad in 1844. The opening of the railroad marked the beginning of the twilight of commercial watercraft built and used around Long Island, and shipbuilding declined dramatically after the 1870s. At first, the railroad was used to carry people and perishable goods, while bulk cargoes such as hay, coal, and wood continued to be transported over water. Small craft, once common on all waterways around the island, became increasingly marginalized.

Boatbuilding on the Great South Bay

The Great South Bay off the south shore of Long Island (Figure 2) has served as the incubator for several varieties of small watercraft. Environmental constraints resulted in a shallow draft hull. The need for stability led to the development of a wide hull form, a feature also required for economic reasons, as the boats often served as utilitarian floating platforms for fishing or duck hunting. In addition, the quest for speed further influenced hull shape, especially during the late 19th and early 20th centuries, as the burgeoning leisure class provided a new market for pleasure craft.

At least three boat types are indigenous to the south shore of Long Island: the South Bay scooter, the Seaford skiff, and the Narrasketuck sloop. Other types, such as the sharpie and Great South Bay catboat, are variations of southern New England themes.

The South Bay scooter (Figure 3), named for its speed, is almost an amphibious craft whose beginning dates to the 1870s (Marquardt 1986; Skinner 1986). The scooter evolved from a simple gunning punt, with a flat bottom, pointed bow, and rounded stern and hull profile. The new vessel was created to fill a need felt by two groups: winter duck hunters and life saving (later Coast Guard) personnel.

During the winter, the Great South Bay frequently freezes, but rarely does it freeze completely. Tides and marshy sections of the bay often create pockets of open water, or "air holes," within the ice sheet. These air holes made navigating the bay on ice alone nearly impossible.

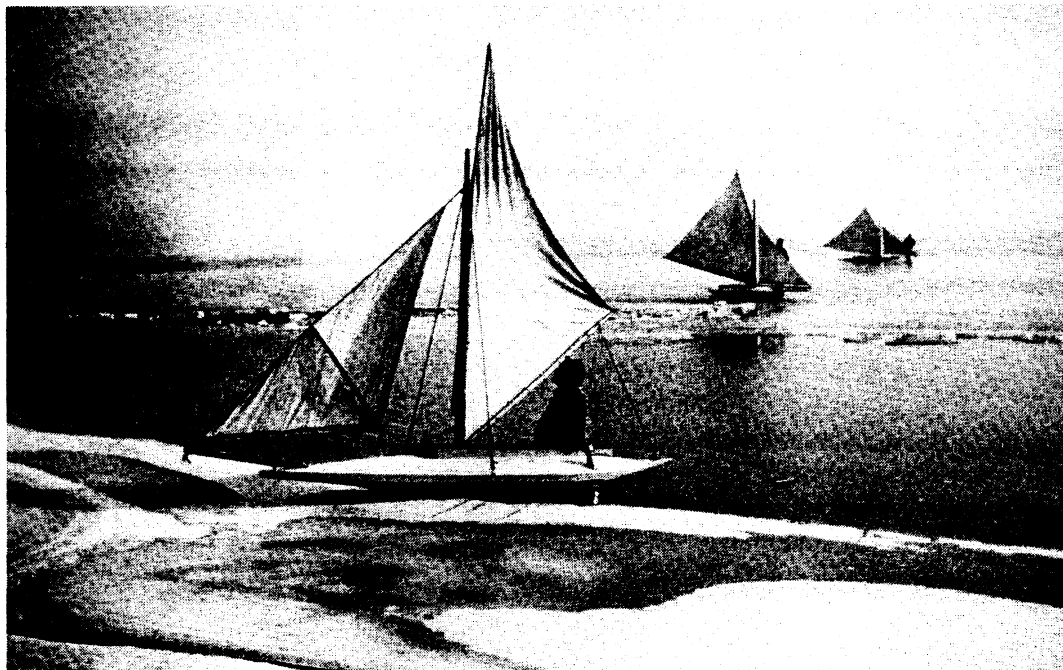


FIGURE 3. Scooters on the Great South Bay, circa 1903 (Suffolk County Historical Society Collection).

Duck hunters, along with eel and shellfishermen, needed a safe way to reach the air holes. Life saving crews found it difficult to keep the string of stations along the Atlantic shore stocked during the winter months, when tragedies were apt to be the most numerous and life-threatening. Additionally, the life saving crews were sometimes called upon to perform rescues on the bay side of the barrier beach.

Captain Wilbur Corwin of Bellport is credited with inventing the first scooter, when he attached brass runners to a gunning punt in the early 1870s (Marquardt 1986:228). Corwin apparently was also responsible for subsequent improvements in runner and rig design. Among the changes was switching from straight to rockered runners for more control and speed.

The first sail on these early scooters was triangular, with the apex forward, and two light spars converging at the apex. The sail was hoisted to a short mast and straps were so arranged that they could be shifted fore and aft on the yards, one end of each strap being attached to the mast (Suydam 1948). This was the way they were steered.

As the scooter evolved, its deck became rounded and the high coamings favored by duck hunters were eliminated. By the final years of the 19th century, scooters had made the transition from utilitarian work boat to winter commuting vessel to pleasure boat. One hundred years later, an active club operating from Bellport holds scooter races on the Great South Bay every winter. The hull shape of modern scooters varies little from its antecedent, although several vessels are now made with fiberglass, and the rigging consists of a more elaborate jib and mainsail.

The Seaford skiff (Figure 4) is another vernacular watercraft which made the transition from work to pleasure boat. This skiff is a round-bottomed hull with a centerboard keel, usually fully decked and with moderate freeboard. The stem rakes forward at a slight angle, and waterline length is about 14 feet (4.3 m.). Typically a Seaford skiff carried a sprit sail, although sometimes it was rigged with a boom and

gaff (Hausrath 1986). The mast was designed to be easily unstepped and stowed, sails and all, in the cockpit, since the skiff was rowed as frequently as it was sailed.

Like the scooter, the Seaford skiff was initially constructed for use as a work boat. It was ideal for clamming, eeling, and duck hunting, and was an affordable vessel for independent baymen. Later the skiff was used almost exclusively for weekend duck hunting parties, and then racing.

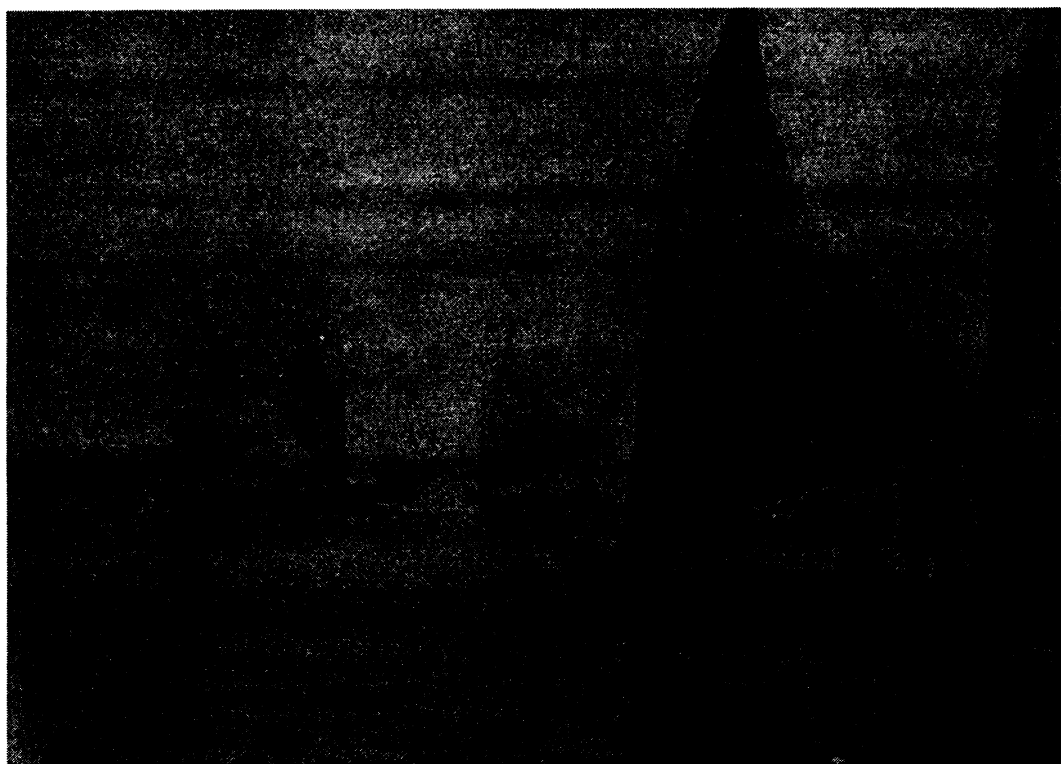


FIGURE 4. Racing Seaford skiffs on the Great South Bay (after Hausrath 1986:131).

One regional boat type developed specifically for racing was the Narrasketuck sloop. However, this sloop was a relative late-comer to the bay, as it was first built in the 1930s (Hausrath 1986:131). The Narrasketuck is a fast shoal water racer, with a sharp bow, overhanging stern, and more narrow beam than typically employed on the Great South Bay. Derivatives of the type are still racing today.

Another local boat innovation was the Beebe-McLellan surfboat, designed by Frederick Beebe of Greenport for the United States Life Saving Service. The surfboat is descended from the Colonial period whaleboat, with pointed ends, rockered profile, and little freeboard. Beebe's boat became the standard for open surf operations, and the design was in production (with modifications including motorization near the end of its run) from 1879 until 1918 (Field 1997:8).

Several vernacular boats are not purely indigenous to the Great South Bay. For example, the Long Island sharpie had similarly-shaped counterparts elsewhere in southern New England. This boat was a small utilitarian craft owned mostly by families with summer homes on the barrier beaches south of the Great South Bay during the early 20th century. Sharpies are essentially flat-bottomed rowboats, though they were sometimes fitted with a simple sail. The vessel is rockered in profile, so that the bow barely touched the water surface, and the stern rose an inch or two above the water. The end of the sharpie as the everyday work boat came during the 1930s and the popularity of outboard engines. The traditionally sloping transom was not suitable

for clamp-on motors; a square bottom at the stern was necessary to keep the suction of the propellor from dragging it down (Howell 1984).

Gaff-rigged catboats were particularly common on the south shore of Long Island, while their counterpart in the western Long Island Sound area were sloop-rigged sand-baggers. Sand-baggers, named for their moveable ballast, appeared in New York waters as early as 1855, probably derived from the small half-decked commercial boats of New York watermen (Chapelle 1935:318). These 18 to 28 foot (5.5 to 8.5 m.) long vessels were wide, shallow centerboard craft designed to carry maximum sail, with perpendicular ends and interchangeable rigs (usually as sloops around Long Island, and less often cat rigged). Catboats are identified by a single mast that is stepped very near the bow, while the mast on a sand-bagger is approximately one-quarter of the vessel length towards amidships.

Catboats are a "peculiarly American" invention with an obscure history (Morris 1970 [1927]:58-61). According to Morris, catboats probably originated in the general coastal New York region and spread along the Atlantic seaboard, and may be seen as the "working out of a local type into its most perfect form" (1970 [1927]:60). They do not appear to be related to the French chat or English cat employed in the 17th century coal trade. Chapelle (1991) dismisses Morris' sequence of rig types as explanatory of the evolution of catboats, and instead believes that the catboat may represent multiple inventions, where similarities in hull arose from similar environmental conditions and purposes. He suspects an early date for the use of catboats in North America, and cites

three regions that were home to catboats prior to 1855: the lower New York Bay/northern New Jersey area, Narragansett Bay (Rhode Island), and Cape Cod/Massachusetts Bay (Chapelle 1991:3-4).

Regional catboat hull differences appear to be most strongly correlated with water depth and severity of weather (Figure 5). For example, the Great South Bay off the south shore of Long Island is shallow and the weather is typically fair. The first condition results in the use of centerboards instead of deep keels. A centerboard is a moveable plank, which acts like a keel but that can be raised or lowered depending on water depth. Catboats used in water deeper than the Great South Bay, such as Narragansett Bay, tend to have deeper drafts and true keels. Typically good weather conditions off Long Island have resulted in a hull that is generally narrower and with less freeboard (Figure 6) compared to those in rougher waters (like Cape Cod) (Morrison 1996:39).

Despite the comparatively favorable conditions around the Great South Bay, catboats are well-suited to foul weather, due to a sail area smaller than that for a sloop and rigging that is mostly inboard that can be handled by one person (Chapelle 1991:4). Although Chapelle notes that the single sail is the most weatherly of all rigs, he also identifies problems with the cat rig, including the need to reef the sail in rough weather and the difficulty in adding more sails (except a simple spinnaker) to the rig in light winds (Chapelle 1991:7).

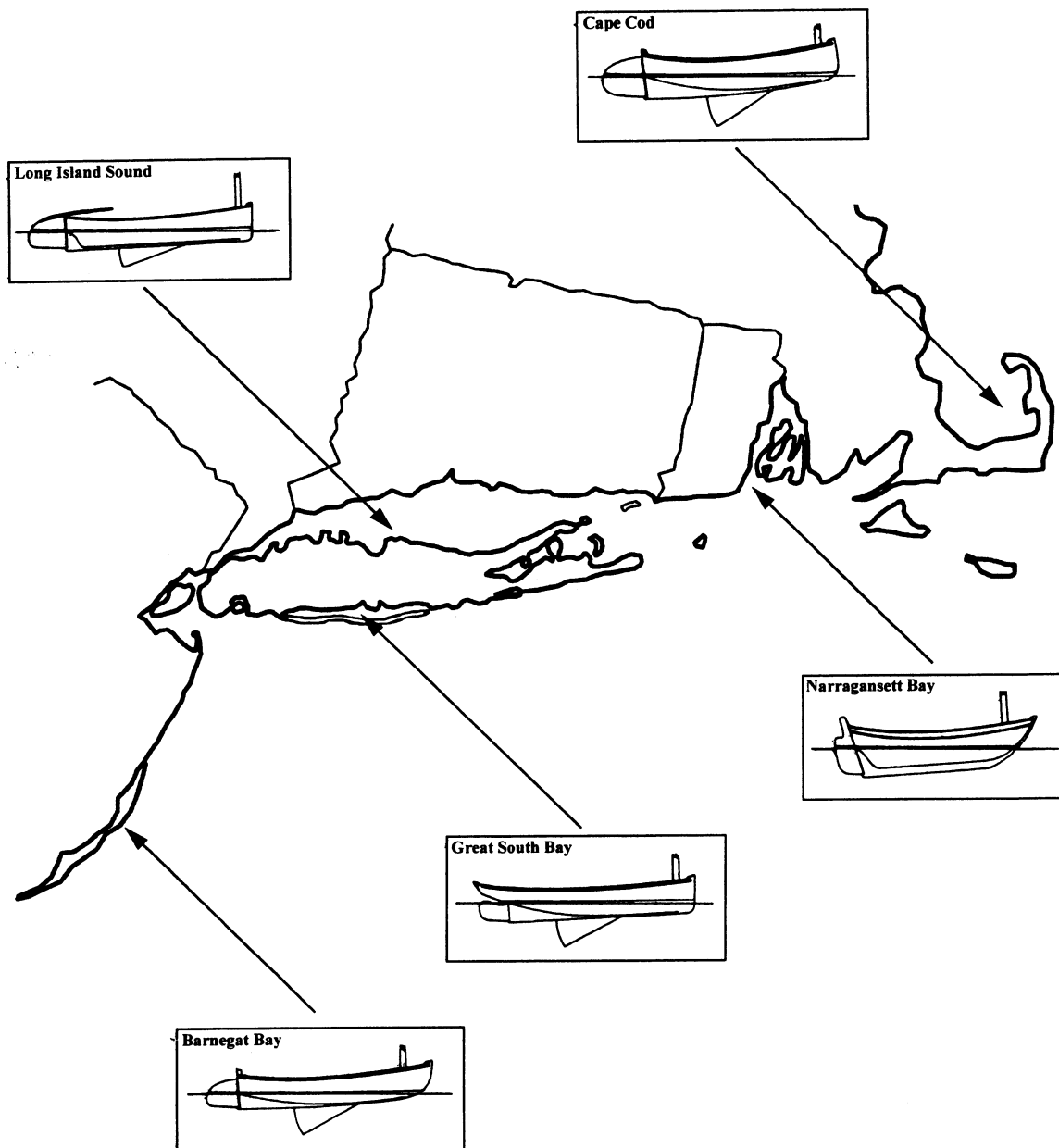


FIGURE 5. Regional variation in catboat design throughout southern New England (hull drawings after Williams 1991:32).

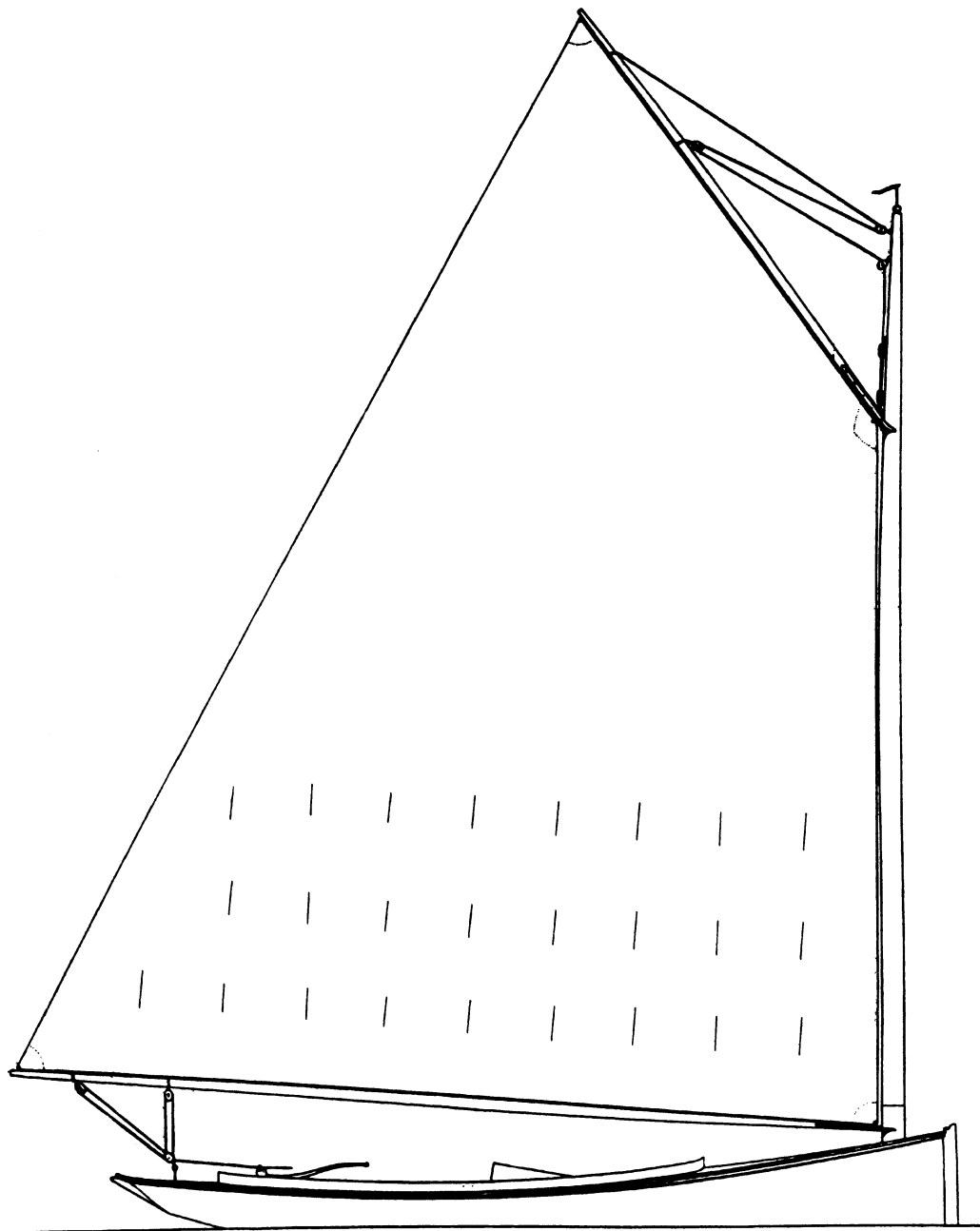


FIGURE 6. Typical Great South Bay catboat, *Lucile*, built by Gil Smith in 1891 (after Massa 1979[1896]).

One prolific New England catboat designer was Fenwick Williams of John Alden's boatyard in Marblehead, Massachusetts, who turned out hundreds of designs between 1923 and 1951. He has described the catboat hull as a "relatively non-critical design in that any such form which appears about right to the practical eye is quite likely to come within reasonable limits of displacement, stability, and trim" (1991:23). Utilitarian features of the catboat hull include a high bow that provides adequate support for an unstayed mast (obviating the need for wire standing rigging and fittings), high coamings to keep out water, and low side decks for setting traps or operating oyster tongs (Williams 1991:23-24).

The precursor of the catboat in Narragansett Bay, the Point boat, was raced since the Colonial period (Leavens 1991:11). Catboat racing is documented as early as 1853, when the *Una* built by Bob Fish of Bayonne, New Jersey was raced in England (hence the British term "Una boat" for American catboats) (Chapelle 1935:323). New England's most famous boatbuilder, Nathaniel Herreshoff of Rhode Island, supplied the racing fleet of the Boston Yacht Club, established in 1865 (Leavens 1991:13).

In general, the transition from work boats dominating the waters to a proliferation of pleasure craft in eastern Long Island occurred during the mid- to late 19th century. This transition coincided with the emergence of the well-to-do business class in New York City. Boating was viewed as a respectable past-time; as a result, the business of building recreational craft flourished. The New York Yacht Club was founded in 1844, the same year the railroad spanned Long Island (Bailey 1949).

In the decades following the Civil War, with the opening of north and south shore railroad lines, many of the New York elite established summer homes on the bucolic shores of Long Island. Before the proliferation of automobiles and golf courses, tennis and boating were the favored activities of the idle rich.

It was common for a family to own a boat which was sailed single-handed by a professional captain during the week for the entertainment of family members. When Saturday morning came, the crew would come on board and after stripping the boat for racing, would sail off (never under tow) to the next race, which could be 20 miles down the bay. The race could be a course of 12-15 miles and then they would sail home. If the crew had won a race, the captain would run a broom up the mast to let everyone at home know about it (Hix 1986:39).

Summertime sailboat races fostered fierce competition with a set of new rules, and boat design was adapted to suit the demand (Rattray 1941).

The boats employed by the leisure class were basically the same as those employed by the working class; modifications were primarily amenities such as full decking and comfortable cabins. The reason for this similarity is two-fold: the same builder constructed boats for both the clammers and the society gentlemen, and perhaps more importantly, the boats were used in the same environment.

Among the requirements for a Great South Bay work boat were relatively small size (small enough for one or two men to handle yet large enough for the daily catch), stability, and a shallow draft (Figure 7). Speed, while not essential, was certainly desirable in a work boat. These requirements shaped the Great South Bay

boat into a wide hull that drew very little water. Some variants like the sharpie were flat-bottomed, although most hulls were rounded with a centerboard keel that could be raised or lowered, depending on the water depth.

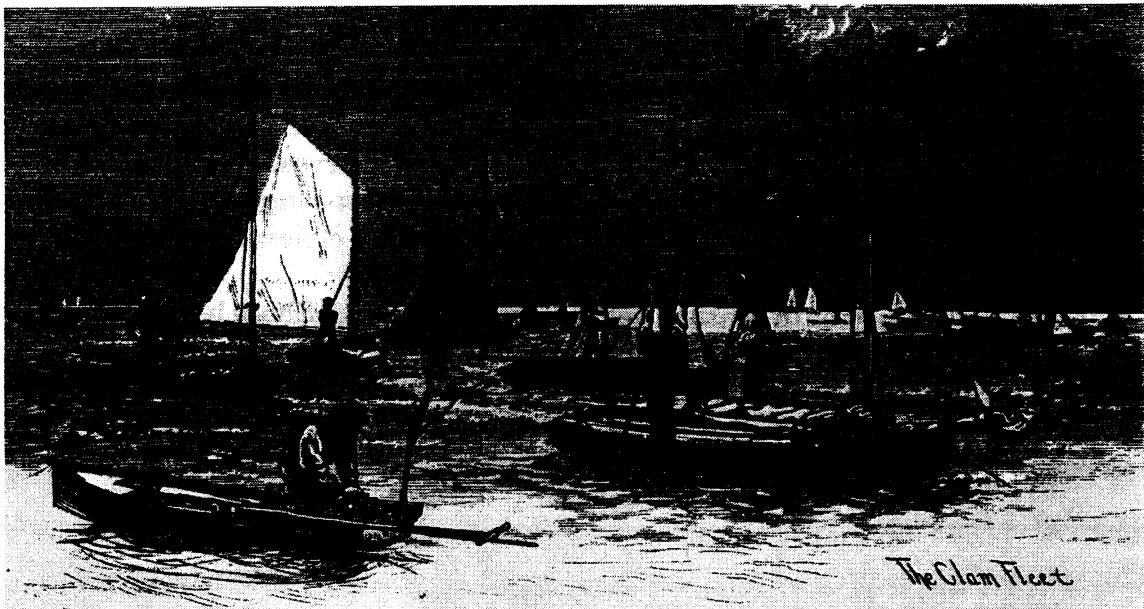


FIGURE 7. Clamming on the Great South Bay, 1877 (from *Harper's Weekly*, reprinted in Stoff 1994:64).

South shore racing hulls had the same basic characteristics as work boats, but with some refinements, including overhanging sterns and curved stem profiles. Handicapping for New England races was originally based on tonnage, but later on design (using beam [breadth], draft [depth], overhang, or waterline length) (Chapelle 1935:304-305). Waterline length and overhangs were the most important features for handicapping systems used for Great South Bay races, where the formula

$$\frac{\text{LWL} + \frac{1}{4} \text{ overhang lengths} + \sqrt{\text{sail area}}}{2}$$

determined the racing length of a vessel (LWL is length at the waterline when loaded) (*Catboat Association Bulletin [CBA] 1976:41*). The most common classes for Great South Bay catboats using this formula were A (20 feet [6.1 m.] and over racing length) and B (under 20 feet racing length) (*CBA 1976:42*).

Early in the 20th century, swooping sheer lines and exaggerated overhangs on catboats were seen by some not as beautiful, but rather as aberrations, corruption of a classic design. In 1910, the Inter-Bay Cabin Catboat Association was organized to encourage builders to “produce types of catboats free from all freak features” (cited in Leavens 1991:19). The Yacht Racing Association of Southeastern Long Island was part of this consortium of catboat racing groups.

Environment, both natural and man-made, played a crucial role in the design and outfitting of catboats. One example of the effects of the man-made environment on local boats concerns rigging. A popular sailing course led eastward from the Great

South Bay to Shinnecock Bay, and then north through the Shinnecock Canal to Peconic Bay (Figure 2). The problem for many was the railroad trestle spanning the canal. Several catboats had masts shortened specifically for this obstacle. However, if the mast was too high, the procedure was for a block-and-fall to be attached to the underside of the railroad bridge in order to unstep and then re-step the mast. This tricky maneuver involved climbing onto the bridge, although it was done often enough that train engineers would give a warning whistle on their approach (Ackerly 1950).

While this particular maneuver required some skill, sailing on the Great South Bay was generally a safe enterprise. Winds in the morning tend to be from the north, but by afternoon the prevailing southwest winds predominate, so one could leave on the “morning northern” and return in the afternoon with little difficulty (Smith 1976:35). In the event that there was no wind, a boat could be poled back to port. Grounding during low tide was not a serious problem. As one author noted, tongue-in-cheek, “timid ladies and the uninitiated have been known to step out and walk ashore, preferring the slight dampness therein incurred to staying in the ‘horrid old boat’ and meeting with an untimely death in the briny deep” (Massa 1979[1896]:17).

Thus, the Great South Bay provided an ideal incubator for the development of vernacular watercraft. The risk of physical harm to sailors or of irreparable damage to vessels was relatively low. As a result, experimentation with hull design was not discouraged, and a variety of boats were designed to meet the requirements of this environmental niche.

GIL SMITH, BOATBUILDER

One of the master boatbuilders of Long Island was Gilbert Monroe Smith of Patchogue (Figure 8). It is estimated that Smith built over four hundred boats from 1876 to 1936, and they were reputed to be the fastest on the Great South Bay (Bigelow 1966a). His catboats and sloops were of light construction with hull forms ideally suited to the local environment.

Biographical Sketch

Gil Smith was born in Manorville, Long Island on 13 July 1843. Like many families living in rural Suffolk County, the Smiths seem to have moved frequently. His father, John Smith, is identified on the 1850 census as a boatman in Manorville (United States Census Office [USCO] 1963), and in 1860 both John and son Gil are listed as fishermen living in Good Ground (now Hampton Bays) (USCO 1967). Gil is misidentified on the 1870 census as "James G. Smith, boatbuilder" (USCO 1965), living in his own house in Good Ground.

Little is known about Smith's education and early craft training. Shortly before the Civil War, he was employed in the shipping trade, sailing on the schooner *Mary Stedman* to Cadiz, Spain and Cuba. When war erupted, he served aboard Union Army supply vessels (Suffolk Marine Museum 1983:3).



FIGURE 8. Gil Smith, circa 1890 (Lightfoot et al. 1984:122).

Smith married Marion Terry of Riverhead in 1863, and by 1866 their first of six children was born. The family built a house in Canoe Place, and Smith earned a meager living as a bayman, duck hunter, and guide for duck hunting parties, using his own homemade decoys and gunning boats (Allen 1984). "Market gunning" was a widespread practice on eastern Long Island during the late 19th century. Duck was a favorite local entree, and New York City milliners purchased feathers by the pound for women's hats. Such was gunning's popularity that it was outlawed as a conservation measure in 1918, although some hunting undoubtedly continued illicitly (Solomon 1992:28).

Marion Smith supplemented the family's income by teaching at the Shinnecock Indian Reservation, but she saw greater educational opportunities for her children and greater business opportunities for her husband in Patchogue (Hix 1986). At the time, Patchogue was a thriving port village, adjacent to the dense oyster beds of the Great South Bay and a fledgling center of yachting. By the late 19th century, Patchogue was the largest trading and industrial center in Suffolk County, with several mills along its three large streams (Bayles 1874). The largest boatyard on Long Island's south shore was operated by O. Perry Smith (apparently no relation) in Patchogue between 1850 and 1872, during which one brig, 19 sloops, and 18 schooners were built (Minuse 1983:7). At Marion's urging, Smith packed all their belongings aboard a 24 foot (7.3 m.) catboat he had built, and the family set sail from Canoe Place, bound for Patchogue.

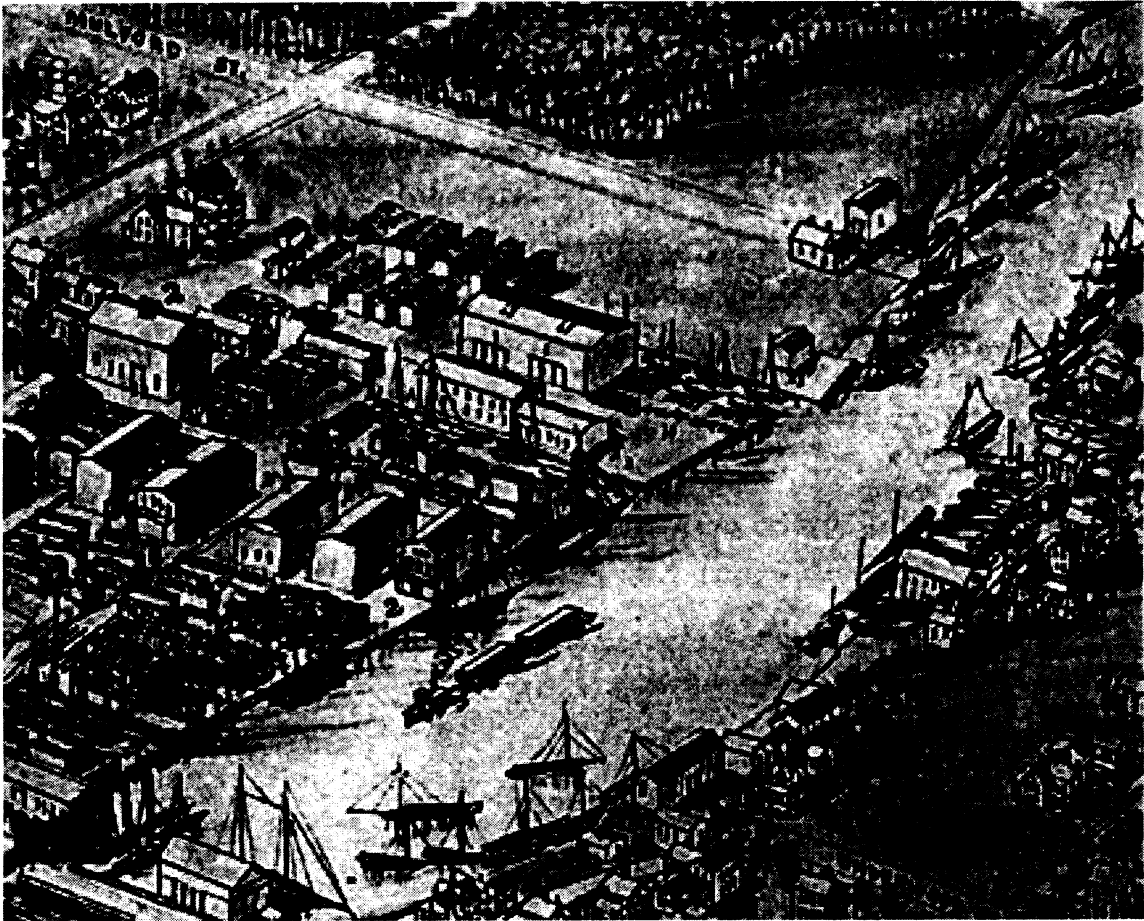


FIGURE 9. Detail of a 1906 panoramic map of Patchogue (Hughes and Bailey 1906), looking southeast across the Patchogue River. Smith's boatyard is the large rectangular structure with two skylights near the center of the figure. Six small boats (sloops and catboats) are shown in the slip to the right of Smith's yard.

At first, Smith worked at various boatyards around the Patchogue River, and in his spare time he produced 12 to 16 foot (3.7 to 4.9 m.) catboats for local baymen. Smith was barely making a living however, and nearly moved his family back to Canoe Place. Fortunately, a sympathetic landlord allowed the family to remain until work could be found (Allen 1984).

Around 1876, Smith rented a shop on the west shore of the Patchogue River, and soon thereafter went into a partnership with boatbuilder Elisha Saxton. The partnership was short-lived, and Smith alone maintained the business. During the 1870s, Smith specialized in building Great South Bay catboats, 12 to 16 feet (3.7 to 4.9 m.) in length. His early clientele seems to have been dominated by baymen, who used the small vessels for shellfishing and gunning (Long Island Maritime Museum [LIMM] collection). Smith's boats were soon reputed to be the fastest on the bay, and business increased. By 1881, Smith had moved to a larger boatyard on the east shore of the Patchogue River (Figure 9), where he worked until he suffered a debilitating stroke in 1936.

Smith's Boats

Evidence of Smith's work consists of several surviving vessels, half models, photographs, contemporary newspaper accounts, and oral history. A few vessels and half models are held by private collectors. The East Hampton Town Marine Museum, the Bellport-Brookhaven Historical Society, and the Friends for Long Island's

Heritage each have one Smith boat in their collection. The Long Island Maritime Museum (LIMM) in West Sayville has the most extensive Smith collection, with seven vessels, thirty half models (including some on permanent loan from the Smithsonian Institution), and a file of photographs and other documents.

Additionally, the Suffolk County Historical Society (SCHS) has 22 half models on display. Information on 95 known Smith boats is summarized in Appendix B. It should be noted that this list of known Smith vessels is most likely biased toward the larger craft he built, as well as toward the most successful racing models.

Photographs, newspaper accounts, and local history are more apt to record the outstanding examples of Smith's work, and not the more mundane. For example, Bigelow (1966a:116) recalls being told that Smith had built around ninety 23 foot catboats (BB class) for sailing in the small bays at Moriches and Westhampton.

Probably less than ten of these boats are represented in Appendix B.

Gil Smith is known to have built simple gunning punts for duck hunting. The only extant vessel of this type made by Smith is owned by the Friends for Long Island's Heritage. Built in 1906 of copper-riveted white cedar, this punt is equipped with ice runners for winter use. However, most of Smith's early clients were baymen plying the shallow waters of the Great South Bay. Small catboats were the favored type of vessel, as they could be sailed by one person, had a small draft for operation in even the most shallow sections of the bay, and a suitably wide beam to ensure stability and hold the day's catch. In addition, they were affordable. During the

1890s, a typical catboat of 21 feet (6.4 m.) in overall length cost between \$250 and \$500 (Vesey 1978:18), depending on the cost and availability of materials, and whether the cockpit was open or fitted with an enclosed cabin. Throughout Smith's career, most of his boats were built to order. The few vessels that Smith seems to have built for his own use or on speculation were quickly sold to others (e.g., *Patchogue Advance (PA)* 1906:1).

As discussed above, by the late 19th century, the Great South Bay was showing signs of over-exploitation, and the shellfish industry suffered from small harvests. At the same time, the summer resort industry was booming. Many entrepreneurial baymen traded their oyster tongs for captain's uniforms, and offered themselves as boatmen to the wealthy vacationers. Summertime races became a major pastime, with families hiring professional crews and their boats (Havemeyer 1996:78-82). It was not long before builders like Gil Smith found their market to be in producing not workboats, but pleasure craft.

Evidence for this shift may be seen in the periodic boating news column of the local newspaper, *Patchogue Advance (PA)*. For example, a column in 1887 is focused on news of ship arrivals and departures, carrying cargoes of hay, coal, and brick. Oystering is also mentioned. Of the 13 vessels whose function is made explicit in this column, only one is a racing yacht. In contrast, columns of the early 20th century (e.g., *PA* 1906) deal almost exclusively with pleasure boats.

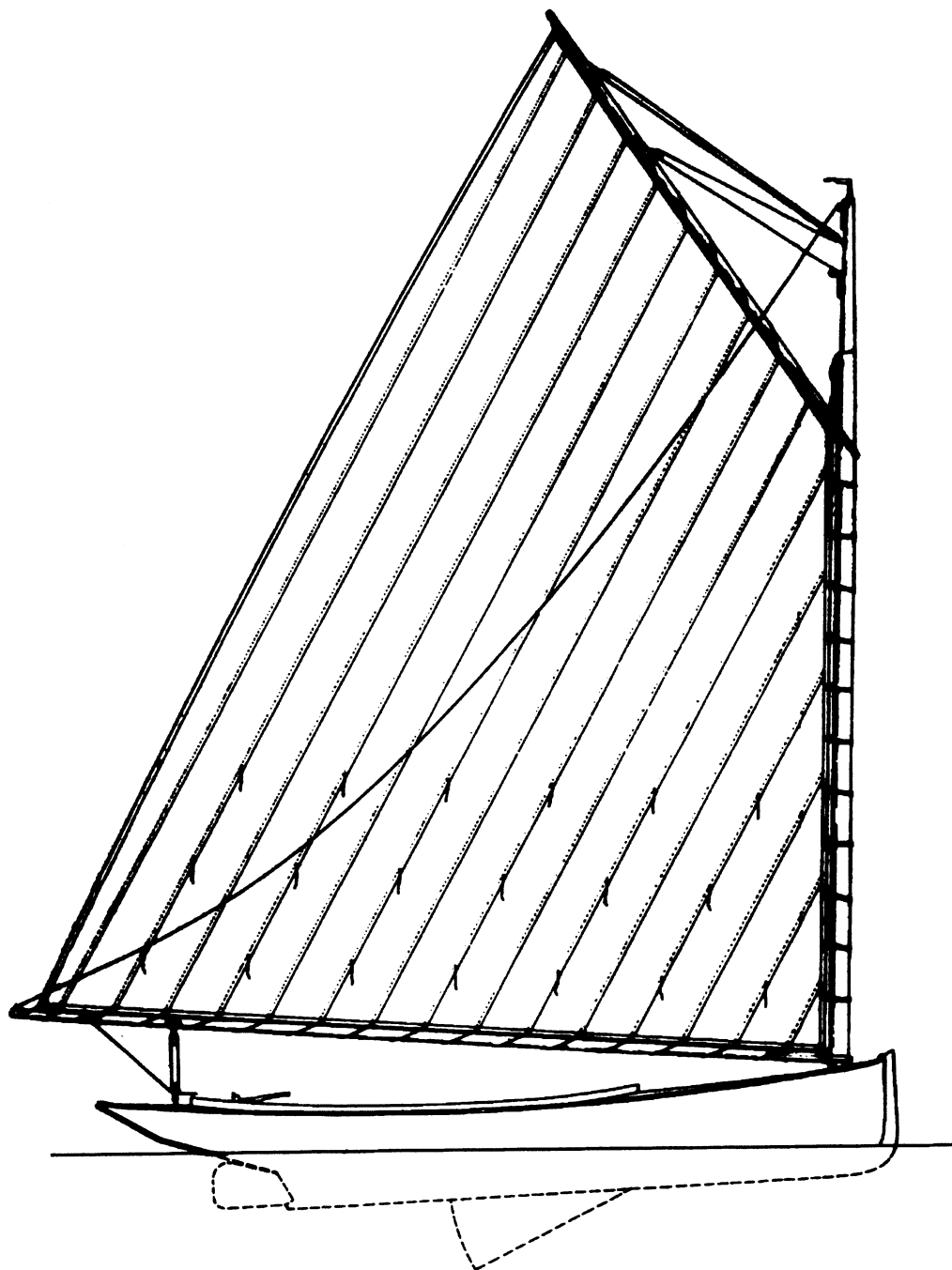


FIGURE 10. Circa 1883 Gil Smith Great South Bay catboat *Senad* (after Kuhn 1988).

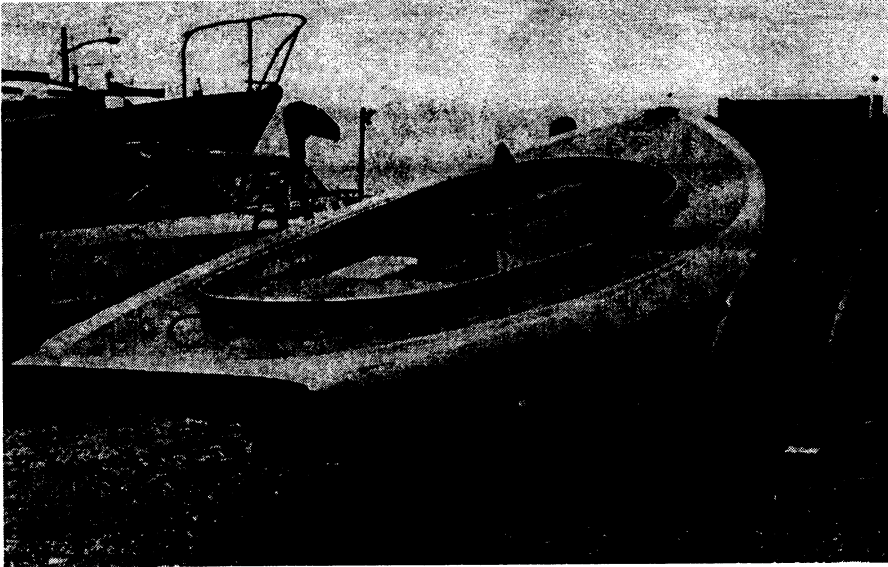


FIGURE 11. Circa 1883 *Senad* in transit to the East Hampton Town Marine Museum (Kuhn 1988:I-15).

It is not clear when Smith made the transition from work to pleasure boats. Indeed, it is possible that he never regarded the evolution as a significant change at all. From the start of his career, Smith sought to improve the design of each hull with the next, and changes generally occurred in small increments.

Smith's boats of the 1870s through 1890s tended to have boxy hulls, reflecting their utilitarian purpose. A contemporary description of Great South Bay catboats and Gil Smith (Massa 1979[1896]) noted that the only apparent change between 1885 and 1895 was in the transom shape and stern overhang. During the 1880s, sterns on

Smith's boats were deep fan-tailed transoms which were raked under and came to a point at the rudder post. The only extant Smith vessel with a deep transom which ends in a point is the 25 foot (7.6 m.) *Senad* (Figures 10 and 11), built circa 1883 (Kuhn 1988), while two undated but seemingly early half models carved by Smith in the SCHS collection also display this characteristic. By the mid-1890s, Smith's transoms were elliptical. More stern overhang was added, typically 4 to 6 feet (1.2 to 1.8 m.) long, moving the transom (still strongly raked) well aft of the rudder stock (Massa 1979[1896]:17) (Figure 12). Because the angle of the transom would have obscured it, the name of a Gil Smith boat was spelled out in bronze letters along an athwartship beam (Morrison 1996:39).

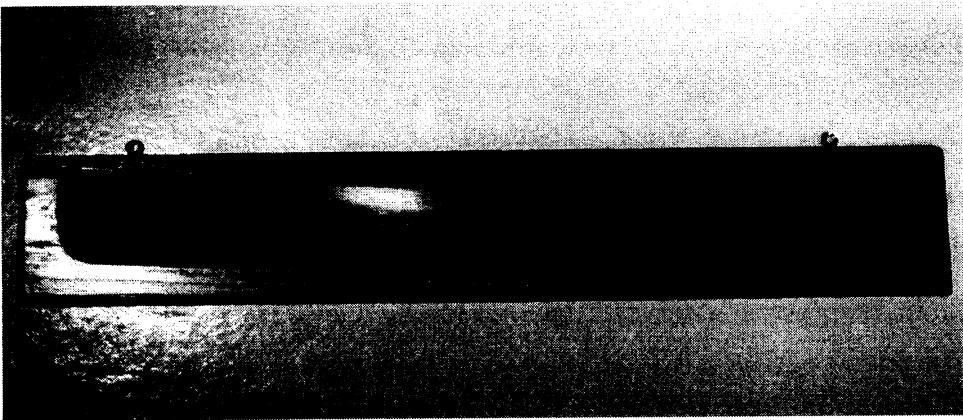


FIGURE 12. Half model of the 1890 Gil Smith catboat *Rosalie*, showing exaggerated aft overhang. Note for scale: the model is 30 inches long from bow to stern.

Around 1900, the needs of a changing clientele become fully manifest in hull form, and especially in the shape of the bow. Prior to this date, the stem on Smith's boats was plumb; that is, the stem post and keel meet at with an angle of approximately ninety degrees. After the turn of the century, the stems became noticeably more curvy and the sterns had more overhang. Extant half models display the chronological sequence from plumb stem, to an intermediate bow form approximating a flattened "S" curve, to the single curve of a "spoon" bow (Figure 13). The boats were reputed to be faster with the curved bow, not to mention more aesthetically pleasing to many clients. In addition, boats with curved stems and overhanging sterns (Figure 14) had the advantage in racing where waterline length was the most important component of handicapping formulae. Thus, the change in stem morphology in Smith's boats around 1900 is most likely directly related to increased racing activity on the Great South Bay.

Many owners of Gil Smith boats have lauded the lines of post-1900 curved hulls as the height of beauty (e.g., deFontaine 1969[1966]; Shoemaker 1978; Howell 1989). The new Smith model produced for Joseph Bailey in 1905 led the author of the boating notes in *Patchogue Advance* to gush "this yacht is the finest ever built in Patchogue and is a splendid testimonial to the yacht building industry of the village... the yacht rides in the water as gracefully as a swan and her lines are beautiful and rakish" (*PA* 1905:1).

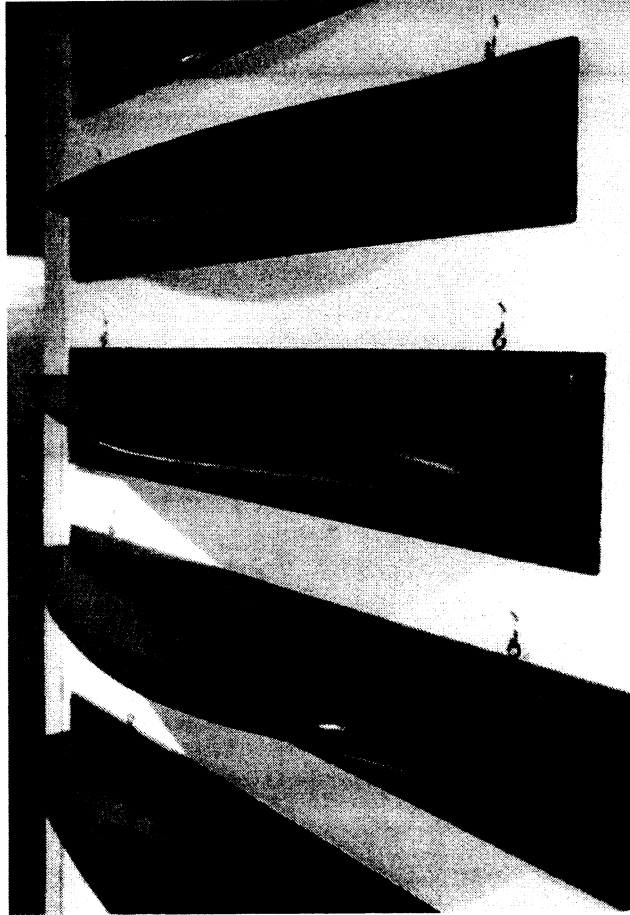


FIGURE 13. Half models of Gil Smith boats, top to bottom: *Marion* (no date, but most likely after 1900) with curved or spoon bow, *Patience* (1892) with plumb stem, and *David B.* (1892) with flattened "S" curve bow. Note for scale: the model for *Patience* is 43 inches from bow to stern.

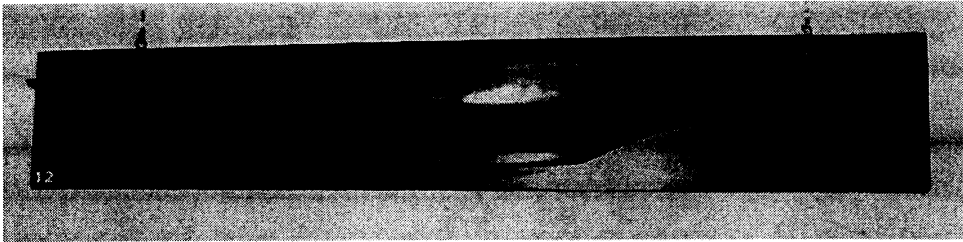


FIGURE 14. Half model of *Dorothy* (1900) showing overhanging ends.

Evidence that Smith's clients believed that the curved bow performed better than the traditional plumb stem includes the case of the catboat *Squaw*. Built between 1892 and 1893 for H.S. Jewell of Brooklyn, the *Squaw* was reportedly difficult to handle in heavy wind. Jewell returned the boat to Smith's yard in 1896, when the plumb stem was replaced with a curved bow. Jewell was reportedly quite pleased with the modification, and the *Squaw* won that year's Great South Bay Champion Cup (Hix 1986:46).

As mentioned above, exaggerated curves and large overhangs were not regarded by all as beautiful, and the Inter-Bay Cabin Catboat Association was formed in 1910 in an effort to enforce classic catboat design (Leavens 1991:19). It is not clear

whether some Gil Smith boats were included in the category of "freakish," but his catboat *Moonbeam* certainly complied with the definition of "classic," with a plumb stem and moderate overhang. *Moonbeam* won the Class B championship sponsored by the Inter-Bay Cabin Catboat Association in 1911 (CBA 1976:41).

The cumulative effect of changes in hull morphology over time is most evident in a comparison of a pre-1900 Gil Smith boat with a 1920s model. For example, *Lucile* was a typical Great South Bay catboat of the mid-1890s (Massa 1979[1896]). Overall length was 21 feet, 6 inches (6.7 m.), with a maximum beam of 7 feet (2.1 m.) (for a length to beam ratio of 1:3.07), and a draft of 1 foot, 9 inches (0.5 m.). A lines plan for *Lucile* was published in *The Rudder* in 1896 (Figure 15). *Edna* was built in 1926, and was characteristic of the larger sloops Smith produced late in his career; this particular boat was the last Smith built by himself (deFontaine 1969[1966]). Measurements for *Edna* included an overall length of 38 feet (11.6 m.), beam of 9 feet, 6 inches (2.9 m.) (length to beam ratio, 1:4), and a draft of 3 feet, 3 inches (1.0 m.). Lines taken from the half model for *Edna* were published in *Yachting* in 1966 (Figure 16).

Lucile had a plumb stem, with little aft overhang and a fantail stern (Figure 15). The bow of this catboat was significantly higher than the stern, as was typical for workboats on the Great South Bay. The low freeboard in the aft section of such boats facilitated pulling nets or traps and using oyster tongs. The large opening in the deck allowed easy access to a hold that would have been filled with baskets or

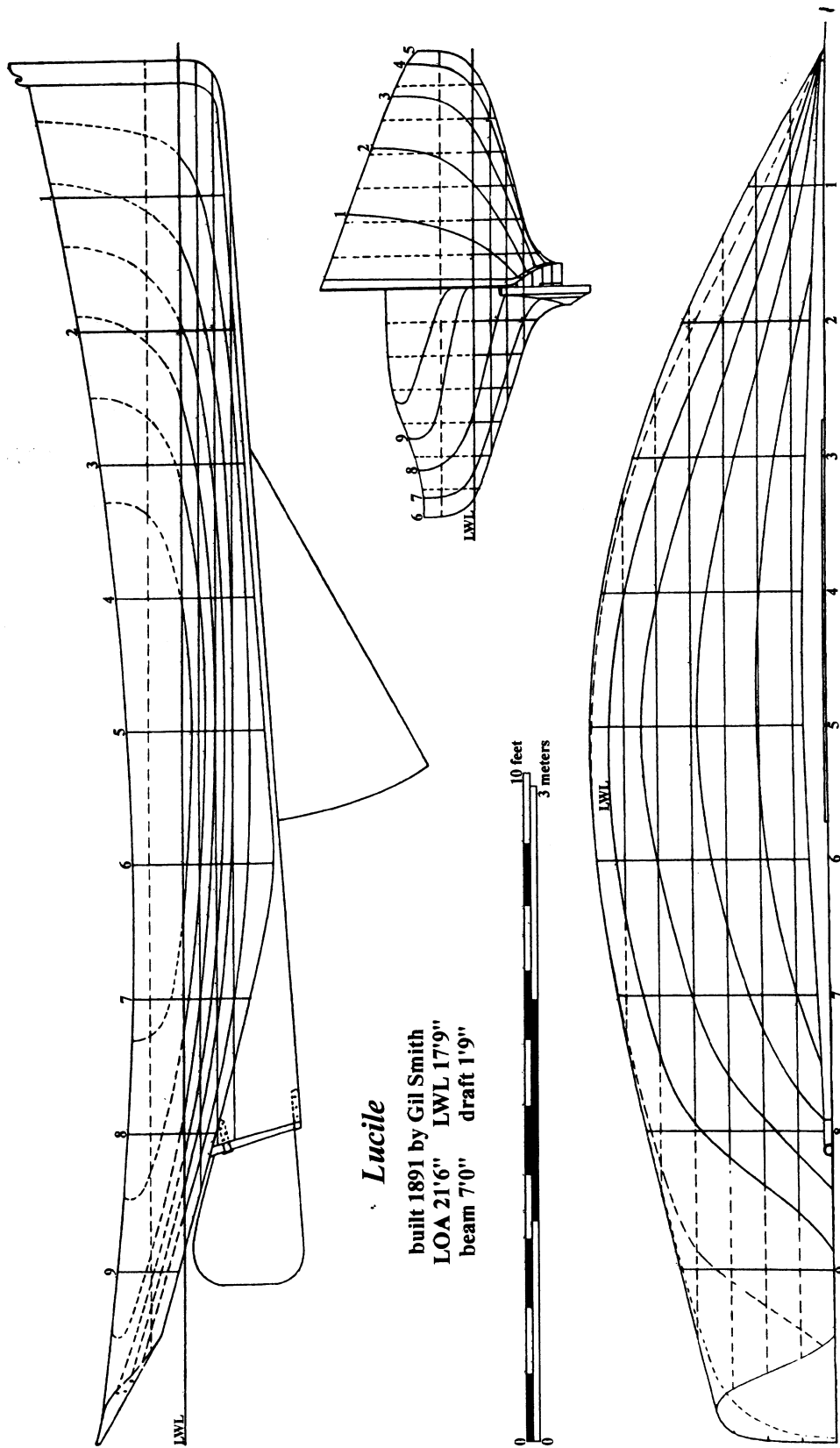


FIGURE 15. Lines for the Gil Smith catboat *Lucile*, built in 1891 (after Massa 1979[1896]).

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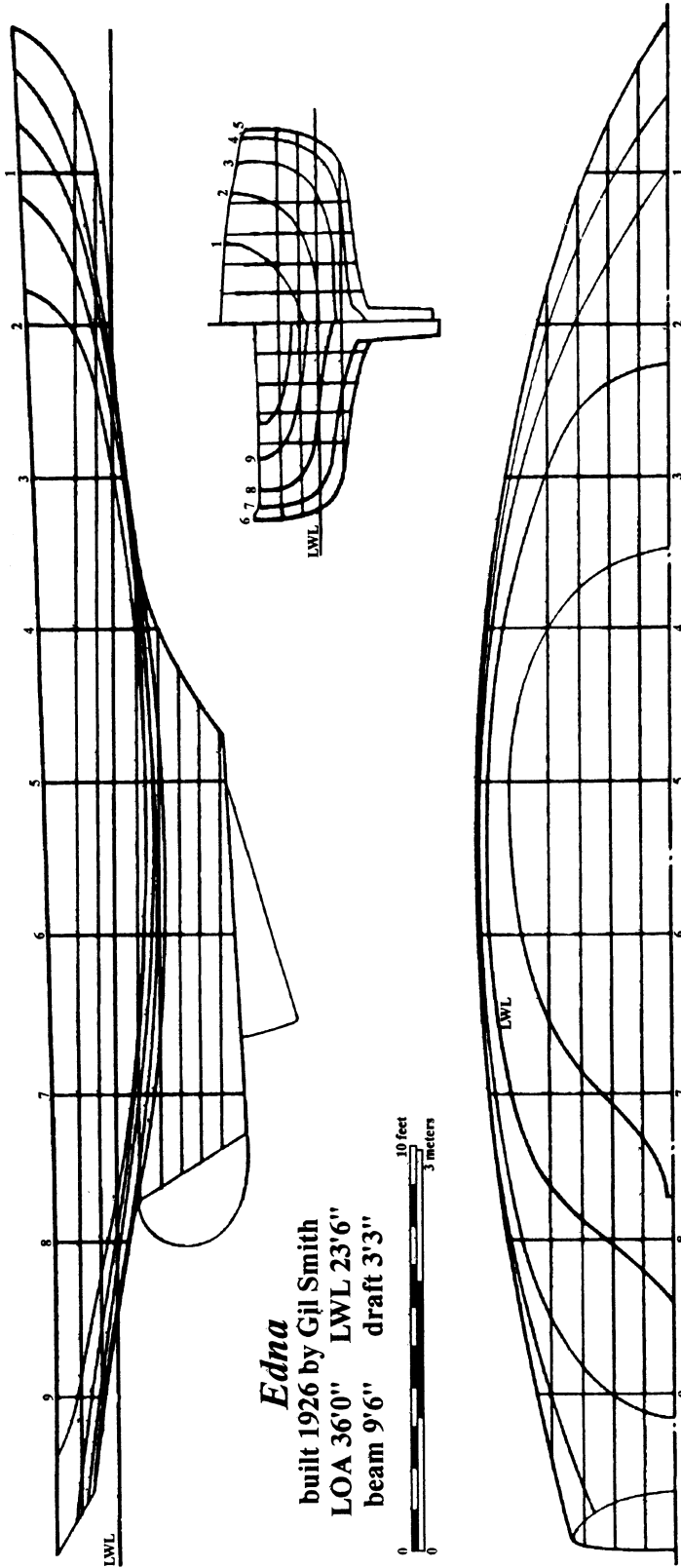


FIGURE 16. Lines for the Gil Smith boat *Edna*, built in 1926 (after deFontaine 1969[1966]).

containers of ice to store the daily catch before returning to shore. Despite its utilitarian features, *Lucile's* hull also had some refinements such as the slight tumblehome near the stern.

By the 1910s, Gil Smith hulls had few distinct workboat-like features. Instead, the lines for *Edna* are more suggestive of an hydrodynamic platform designed to carry maximum sail (Figure 16). The gunwale height varied little between the stem and stern, and the length to beam ratio had been increased to yield a more sleek vessel. Figure 17 shows the relationship between construction date and length to beam ratio for a sample of Smith boats with known dates and measurements.

Another change evident between early (workboats) and late (pleasure and racing boats) Smith models is the location of the maximum beam. Earlier boats are widest between amidships and the rudder, while maximum beam on later hulls is almost always at, or very near, amidships. This seemingly indicates a greater concern for hydrodynamics and speed, at the expense of decreasing the size of the hold (the hold being, of course, more important for workboats, especially those engaged in shellfishing).

The bow on 20th-century models such as *Edna* was curved, and aft overhang was longer than on earlier models. To counter the loss of stability resulting from increased overhangs and a narrower beam, the keel was enlarged (although a centerboard was still employed), and the angle of deadrise seen in profile was reduced compared to earlier models such as *Lucile*.

There are some parallels between the careers of Gil Smith and Nathaniel Herreshoff (1848-1938). They were contemporaries who both designed boats for shoal water work and racing. Like Smith, Herreshoff designed all of the vessels built in his yard between 1870 and 1915. A major difference between the two builders, however, was that Herreshoff had received formal training, a three year course in mechanical engineering at the Massachusetts Institute of Technology (Herreshoff 1953). While at school, Herreshoff became acquainted with many "young Turks" of the Boston racing scene, and his designs dominated the Boston Yacht Club fleet from the mid-1860s through the early 20th century (Leavens 1991:13).

According to one local historian (Hix 1986:40), Gil Smith

was never an apprentice, never learned the boat business from anyone and was not the pupil of any particular school of boat designing. He was a born boat designer and craftsman and designed and built boats out of his mind. He learned the skill from the keel up. Most of his knowledge was the result of working out problems for himself. The first boat he ever built was of his own design and it was always so with the exception of a few boats he built according to plans and specifications of noted naval architects. He made a point of building each boat better than the previous one, if possible.

Everything for a Gil Smith boat (except for rigging and hardware) was made at the yard (Bigelow 1966a:116). Work was done solely with hand tools; the only machine was the sewing machine that Marion Smith used for making the sails until she was in her eighties. There was no electricity at the boatyard (Allen 1984). By

1892, Smith was joined at the yard by his youngest son Asa, who maintained the business after his father's death. Smith also employed local craftsmen at the yard. An 1892 photograph shows Gil Smith (holding an axe), Asa (with a hatchet), Jim Wicks (with a saw), Lew Wicks (holding a hammer), and a Mr. Post (with a block plane) (Figure 18).

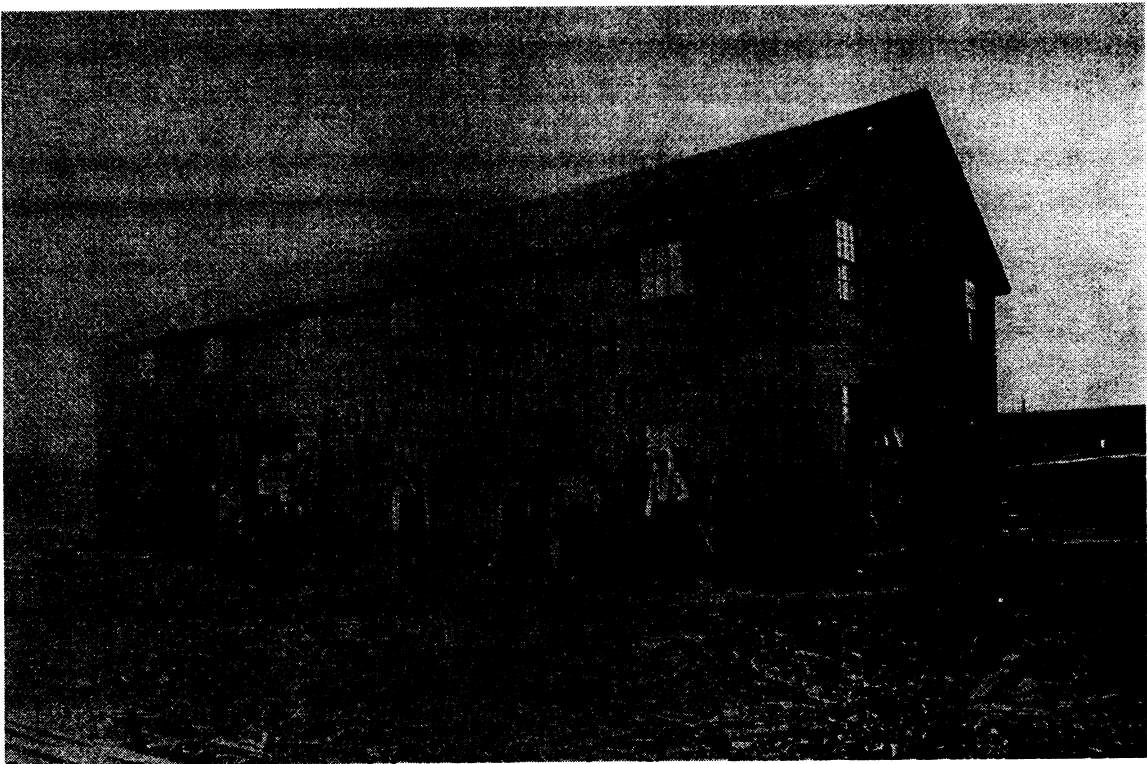


FIGURE 18. Photograph of Gil Smith's boatyard in 1892 (Lightfoot et al. 1984:62).

Though he lacked a formal education, Smith was well-versed in the traditions of boatbuilding. Most of his designs were worked out using scaled half models, and one half model could serve as the basis for more than one vessel. For example, the catboats *Bess*, *Naiad*, and *Senad* were all built circa 1890 from the same half model, now in the collections of the Smithsonian Institute (Hix 1986:47). The 1892 half model for *Patience* (SCHS collection) appears to have been altered by lengthening the aft overhang, though it is not known if this modification on the model was for the original or subsequent vessel. Smith built the 38 foot (11.6 m.) sloop *Elvira* from a half model in 1906 (SCHS collection) for Harry Walton. The following year, Harry's brother William commissioned a sloop from Smith that would outsail *Elvira*. Smith apparently used the same model as he did for *Elvira*, but increased the aft overhang and made other slight improvements. This vessel, *Bess* (later *Bee*), did beat *Elvira* in their first race together (Bigelow 1966a:119).

Smith carved half models at night in his home on Amity Street, a short walk from his boatyard on the Patchogue River. Pieces of wood were sometimes added in places on a model (held in place by screws), and other sections were removed until the desired hull form was attained. Measurements of the extant half models (e.g., Figures 12 and 14), when compared to known vessel dimensions, indicate that Smith used a scale of one inch to one foot (1:12). Most of the extant half models are inscribed with section lines as guides for lofting. Smith occasionally inscribed a sheer plan, complete with section and water lines, on the reverse side of a half model, as

seen on the models for *Rosalie* (1890) and *Mariam* (1899) (SCHS collection). Frames were lofted on the floor of the large shop (deFontaine 1969[1966]).

No written records exist to suggest that Smith approached problems of hydro- and aerodynamics mathematically, as Herreshoff might have done. Instead, Smith seemingly improved the performance of his vessels by observation. Gil Smith and his wife were well into their eighties when they were seen sailing a large catboat in the Great South Bay. Marian was at the tiller, while Smith was at the top of the mast, with one leg over the gaff. Smith held a bag of feathers, which he was releasing one by one along the lee side of the sail to observe their drift (Shoemaker 1978:21). Unfortunately, it is not known whether the results of this particular experiment prompted any changes to Smith's boats.

Another difference between Gil Smith and Nathaniel Herreshoff concerns power boats. Herreshoff, with his engineering background and willingness to experiment with machinery, built several steam launches and yachts, as well as gasoline-powered launches, during his career (Herreshoff 1953). In contrast, Smith supposedly was adamantly opposed to anything but sail power for his boats. One story concerning Smith's reluctance to add motors to his boats has to do with another (unrelated) Smith family of Patchogue. It seems that this Mr. Smith wanted Gil Smith to build him a motor boat. Though Gil Smith was loathe to comply, the client also held the mortgage on the boatyard property, so the boatbuilder had little choice in the matter. As many second- and third-generation Gil Smith boat owners were to

discover, the stylish angled stern of Smith's boats was a totally inappropriate mount for an engine, but Gil Smith did clamp a motor onto the stern of the boat commissioned by Mr. Smith with no alteration in design. Apparently, on launching day as the client stood by, the new motor boat slid down the ways, right under the waters of the Patchogue River. That was the first and last original Gil Smith power boat (Elward Smith 1994, pers. comm.).

There is evidence (albeit mostly anecdotal) regarding exchanges between Gil Smith and Nat Herreshoff. The Smith boat *Iris*, built 1904 for Joseph Bailey of Patchogue, was designed by Herreshoff (Hix 1986:47). Some years later, a group of men from Patchogue went to visit Herreshoff for a design that would be a real winner in shoal waters. Herreshoff asked them where they were going to sail, and when the men replied Long Island's Great South Bay, he told them to go home and order their boat from Gil Smith (deFontaine 1969[1966]).

Another story concerns Captain Wilbur Corwin of Bellport, who was touring south shore boatyards in search of a new vessel one March when the boats were on land and covered with canvas for the winter. Corwin had walked by a Gil Smith design when he noticed a strange figure in a long black overcoat lying beneath the boat. The interloper was revealed to be Herreshoff, who, when questioned, explained that he "was just lookin' and tryin' to find out how he made 'em draw so little water and go so fast" (Bigelow 1966a:116).

Besides the Herreshoff-designed *Iris*, Smith built at least one other vessel to another designer's specifications. In 1906, the German Kaiser challenged the United States to a boat race. Germany sent its finest boats to New York, along with a team of piano polishers to ensure a virtually frictionless hull. Smith was approached by a syndicate with drawings for one of the American contenders. The design by Charles Mower was called a Sonder boat (German for "special"), and it was a veritable racing machine with a long overhang and deep keel, named *Joyette*. Three German and three American boats competed in the final race. *Joyette* won the race, and the President Taft Cup, at Marblehead, Massachusetts (deFontaine 1969[1966]).

By the early 20th century, most of Gil Smith's clients were wealthy summer residents of the resort communities along Long Island's south shore. The circa 1883 catboat *Senad* (Figures 10 and 11) probably cost bayman Thomas Danes less than \$500, as was typical for Smith's early vessels (Vesey 1978:18). After Smith had gained some recognition, his clients gave permission for more elaborate construction. In 1905, Joseph Bailey commissioned Smith to build him a pleasure yacht. The finished gaff-rigged sloop was one of Smith's largest vessels, with an overall length of 49 feet (14.9 m.) and a cabin with headroom. Planking was Washington (Port Orford) cedar and Georgia pine, with cedar decking, mahogany trim, and brass fittings. The local newspaper reported that "Builder Smith has been given *carte blanche* and he has turned out a magnificent boat. No figures are given but it is reported the yacht will cost over \$5,000" (PA 1905:1).

Wealthy clients commissioned Smith based on his reputation for creating boats with speed and style. Not only were Smith's boats fast, but they were made of top quality materials with superb craftsmanship. Despite his ability to receive his asking price, Smith apparently never profited greatly from his business. According to the son of one client, the Smiths lived a hand-to-mouth existence (Elward Smith 1994, pers. comm.).

Most of the money Smith charged for a vessel was used for materials, especially wood. Often as many as two dozen kinds of wood were used in a single boat. Species used varied between vessels based on availability and cost, but typically, a Gil Smith boat was carvel planked with steam-bent Port Orford cedar over white oak frames, and fastened with bronze nails (Knickerbocker 1980). The stem was "salted" white oak that had been seasoned in the Patchogue River for a few years. The keel was cut from one piece of long leaf yellow pine or white oak, while the centerboard trunk was a combination of white oak and cedar framed in mahogany and wild cherry. End timbers and frames were dubbed from natural tree crooks. White oak and wild cherry timbers were supplied by local forests, while the other materials were imported (Vesey 1978:18). Mahogany and cherry were also used for coamings and kingplanks, as well as for matching seats. Several Smith boats, including the 1891 catboat *Lucile*, had moveable benches that were secured with thumb screws. Removal of the seats for racing was thus easily accomplished (Massa 1979[1896]:20).

Decking was varnished white cedar in single narrow strakes laid parallel to the rail with white or black seams and no deck fastenings showing (Figure 19). The toe rail was oak. Masts and spars were typically of Sitka spruce. The tiller, made from a single piece of black locust, almost always displayed a Gil Smith hallmark: a diamond-shaped design carved into the grip (deFontaine 1969[1966]). Later in his career, Smith sometimes used a wheel instead of a simple tiller on larger sloops (Figure 8).

Ballast was beach sand or gravel in burlap sacks, and the boats were usually anchored with a simple kedge (Howell 1987). Although it probably was not a standard feature, Smith's youngest daughter Jennie remembered that her father would install cleats on the floor of the cockpit of the family's boats so that the children would not slip (Allen 1984).

Despite their flawless appearance, some Smith designs did contain structural weaknesses. This is particularly true in cases where Smith seems to have been experimenting with maximizing overhang in the stern, and the joins between the transom and after edge of the planks would fail (Elward Smith 1994, pers. comm.). In general, the most common problem was with catboats, where the weight and strain of the mast, rigging, and spread of canvas weakened the structure of the stem. The result would be loosening of the garboard strakes. This loosening plagued second- and third-generation Gil Smith boat owners especially, so that as a group, they were necessarily well-versed in bailing procedures (Howell 1989). In addition, while many

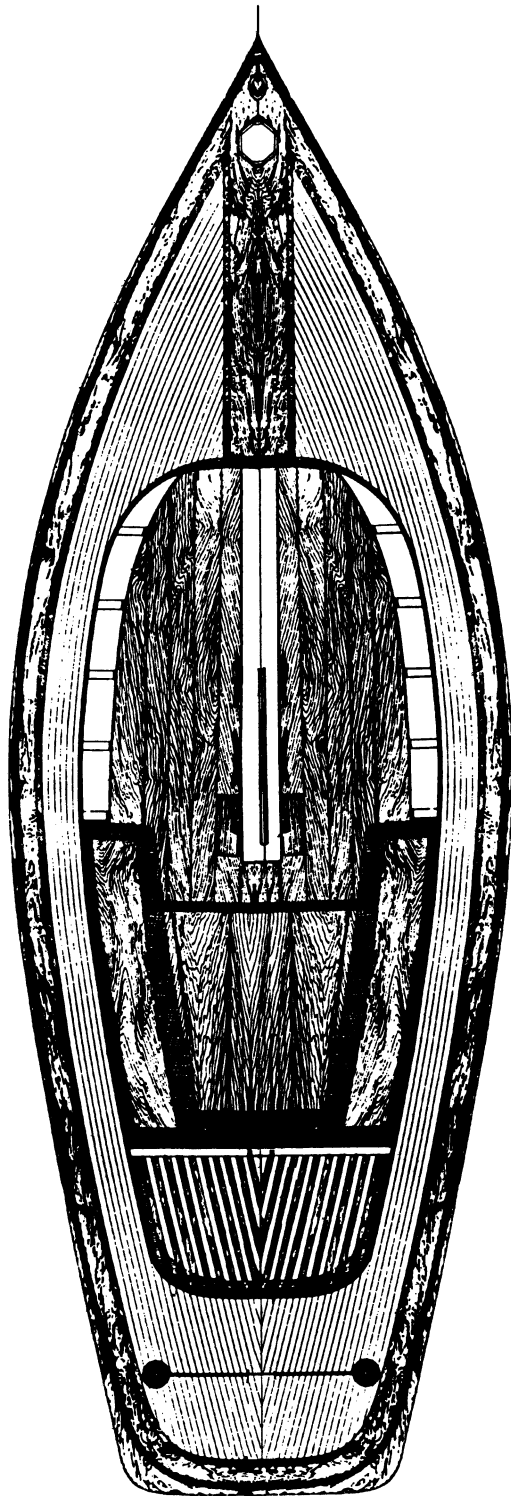


FIGURE 19. Decking pattern on *Lucile*, built in 1891 (after Massa 1979[1896]).

Smith boats employed only bronze or copper fastenings, the deterioration of the 1909 catboat *Moonbeam* is attributed to its iron fastenings (Smith 1976).

Smith had an impressive roster of wealthy clients, including Northram Warren (head of the Cutex Nail Polish company), Commodore Frederick G. Bourne of Oakdale (president of the Singer Sewing Machine Company), Bayard Cutting of Great River (a Manhattan railroad tycoon and philanthropist), Arthur Ball (owner of Best & Company, a large department store), and William K. Vanderbilt (Hix 1986). The usual method of payment for a Gil Smith boat was that one-third of the price was paid with the initial order, another third when the vessel was half finished, and the final payment was due upon completion. Apparently, not long after the 40 foot (12.2 m.) sloop *Reverie* was finished in 1901, Frederick Bourne of Oakdale took some guests to Patchogue to pick it up. Bourne was stopped by Smith, who explained that *Reverie* was not Bourne's boat since he had not yet finished paying for it (Fordyce 1987:82).

Class distinctions did not prevent Smith from sharing the Great South Bay with the summer elite. The Penataquit Corinthian Yacht Club in Bay Shore was the most exclusive facility on the bay. Most of its members were summer-only residents of the south shore, but Gil Smith was also a member, racing his 36 foot (11 m.) catboat *Mollie D.* alongside his wealthy clients. By 1902, several Smith boats were included in the yacht club flotilla of 42 sloops, 15 catboats, and 25 motorboats (Havemeyer 1996:239).

Case Study: The Catboat Pauline

Pauline (Figures 20 through 24) is probably the best extant example of a traditional Great South Bay catboat built by Gil Smith. The vessel, built in 1895, currently belongs to the Long Island Marine Museum in West Sayville, New York. In 1988, a team from the Mystic Seaport Museum took the lines off *Pauline* to build the replica *Anitra*, now on display in Connecticut. In addition, *Pauline* has been reproduced as a 1:32 scale model by Christopher Morrison (1996). The following discussion is based on the lines plans (Thomas et al. 1988), model description (Morrison 1996), and personal observations made of the hull while in the boat shed at the Long Island Maritime Museum.

The general dimensions of *Pauline* include an overall length of 21 feet, 7½ inches (6.6 m.), waterline length of 18 feet, 5 inches (5.6 m.), maximum beam of 7 feet, 1 inch (2.2 m.), and a draft of 1 foot, 7 inches (0.5 m.) (4 feet [1.2 m.] with the centerboard fully extended) (Figure 20). The length to beam ratio is 1:3.05. The slightly rockered keel is a single piece of oak, measuring 15 feet, 4 inches (4.7 m.) long. It is roughly rectangular in section, and has a very shallow rabbet to meet the garboard strake. The stem meets the keel with a "V"-shaped scarf, and the single oak timber (2 feet, 10 inches [0.9 m.] long) is approximately perpendicular to the keel. The mast step is cut into an apron fitted over the scarf of the keel and stem (Figure 21).

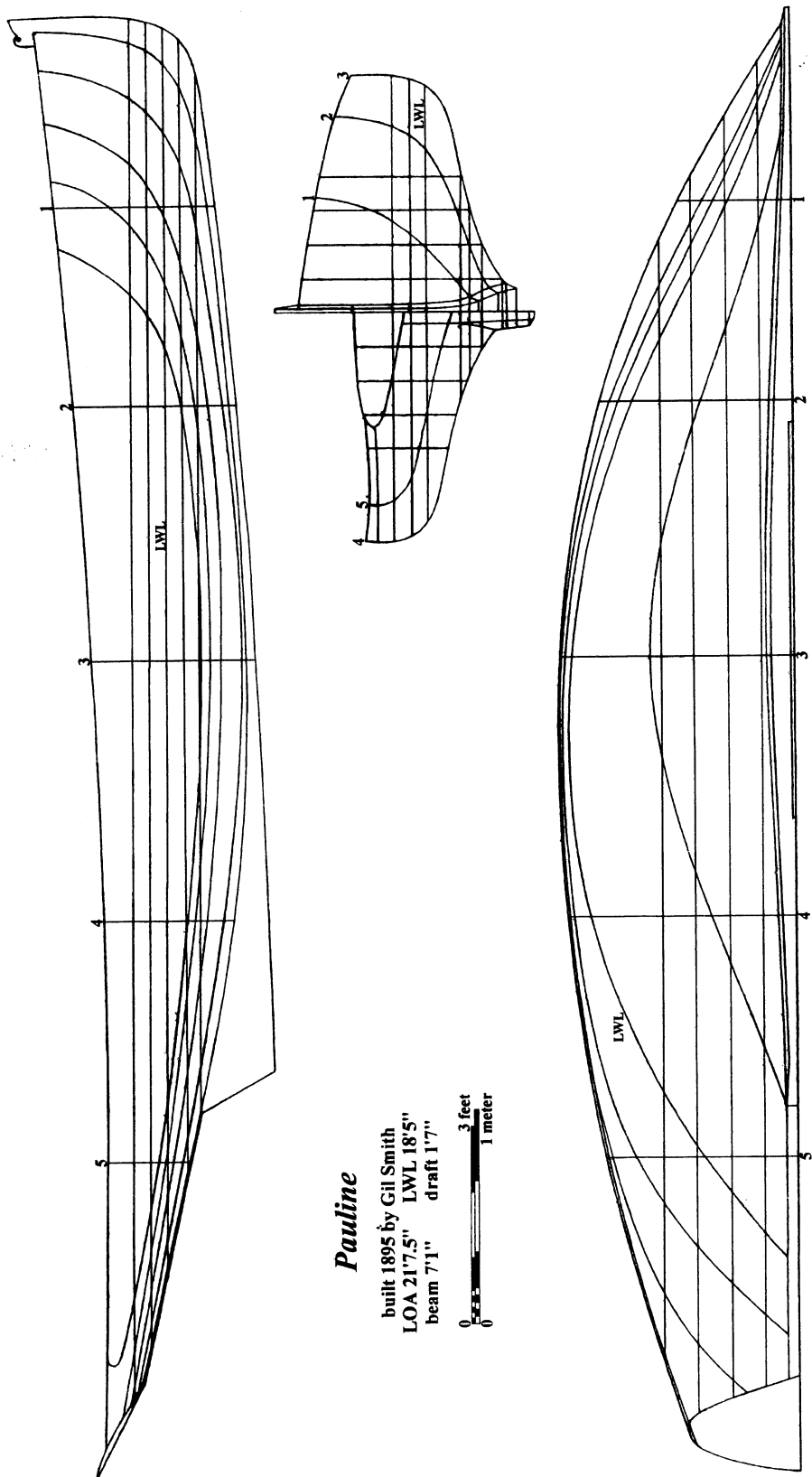


FIGURE 20. Lines for the Gil Smith catboat *Pauline*, built in 1895 (after Thomas et al. 1988).

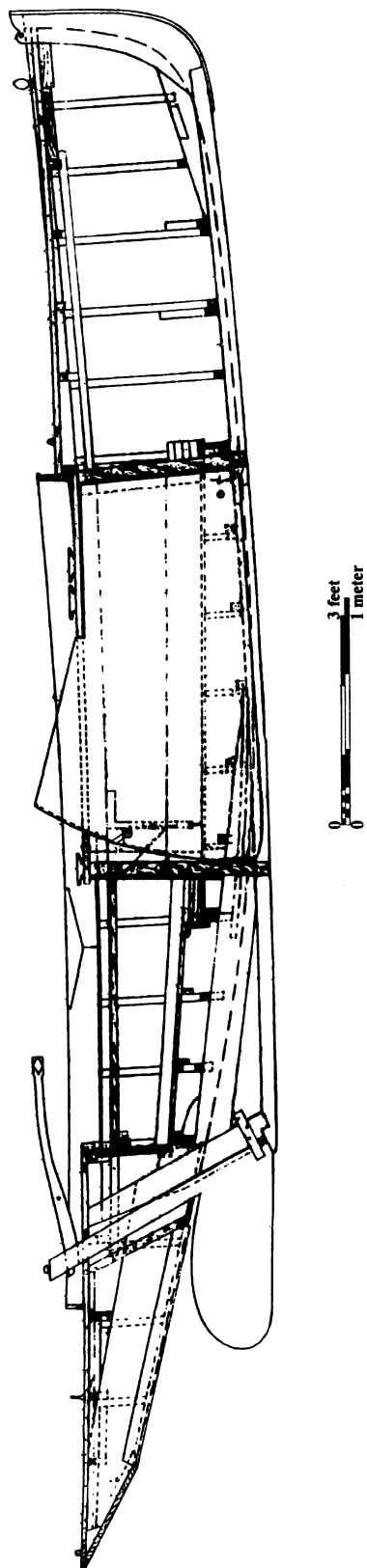


FIGURE 21. Interior profile of *Pauline* (after Thomas et al. 1988).

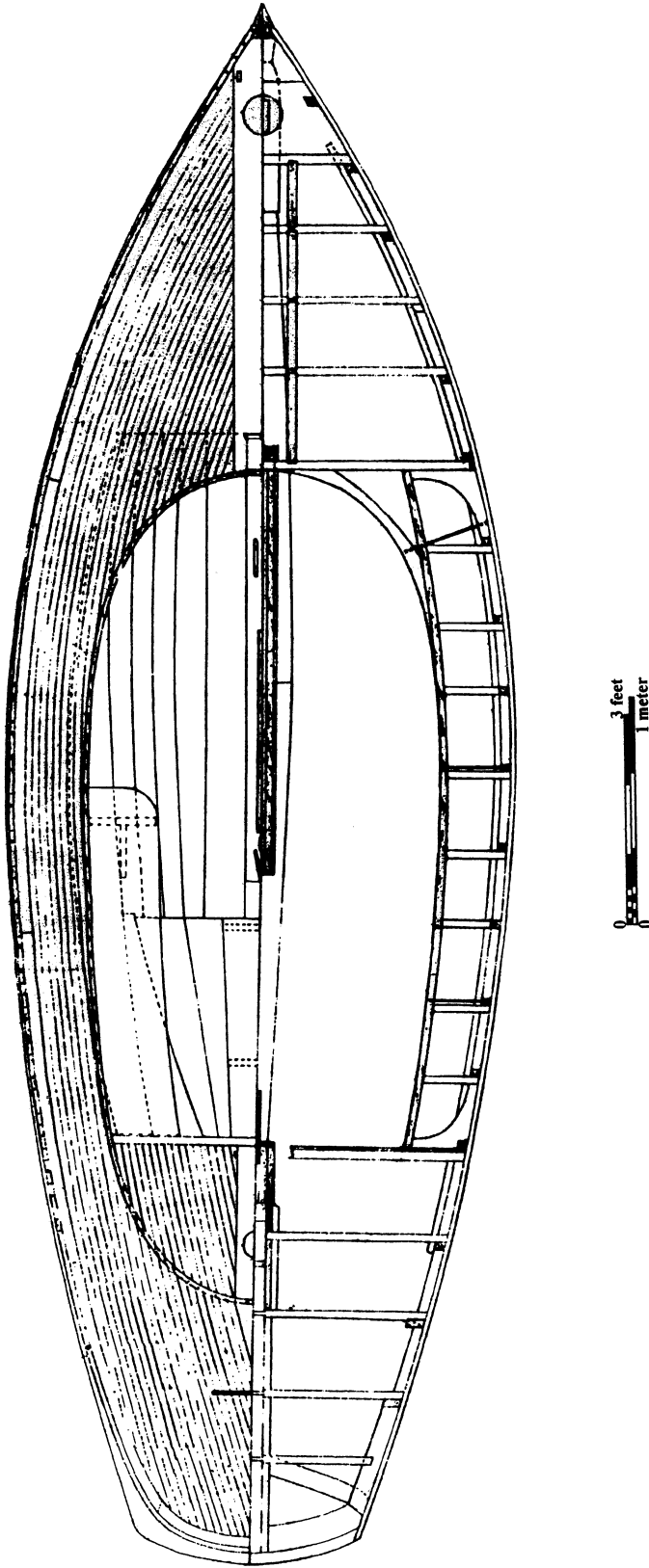


FIGURE 22. Plan of *Pauline* (after Thomas et al. 1988).

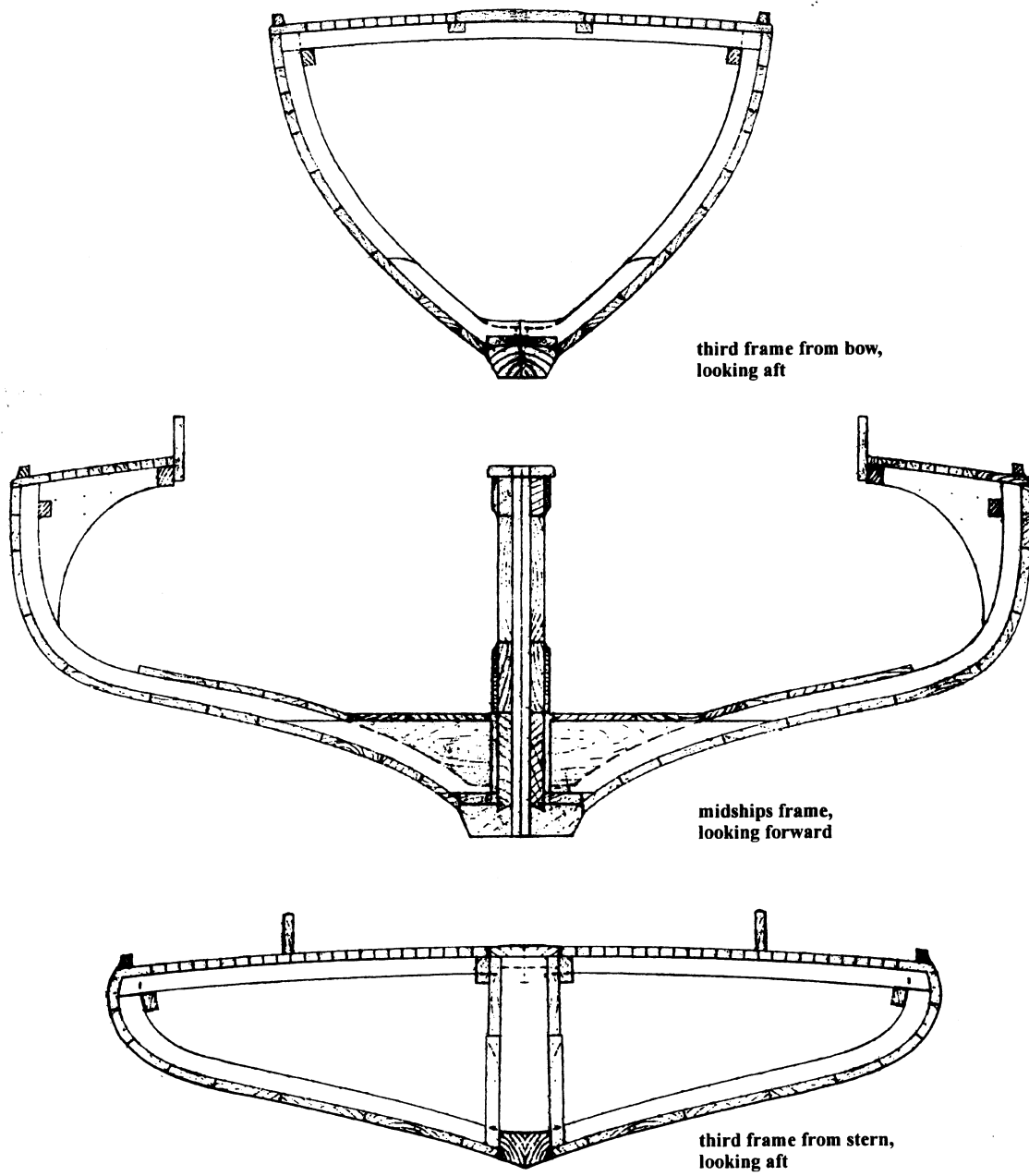


FIGURE 23. Sections of *Pauline* (after Thomas et al. 1988).

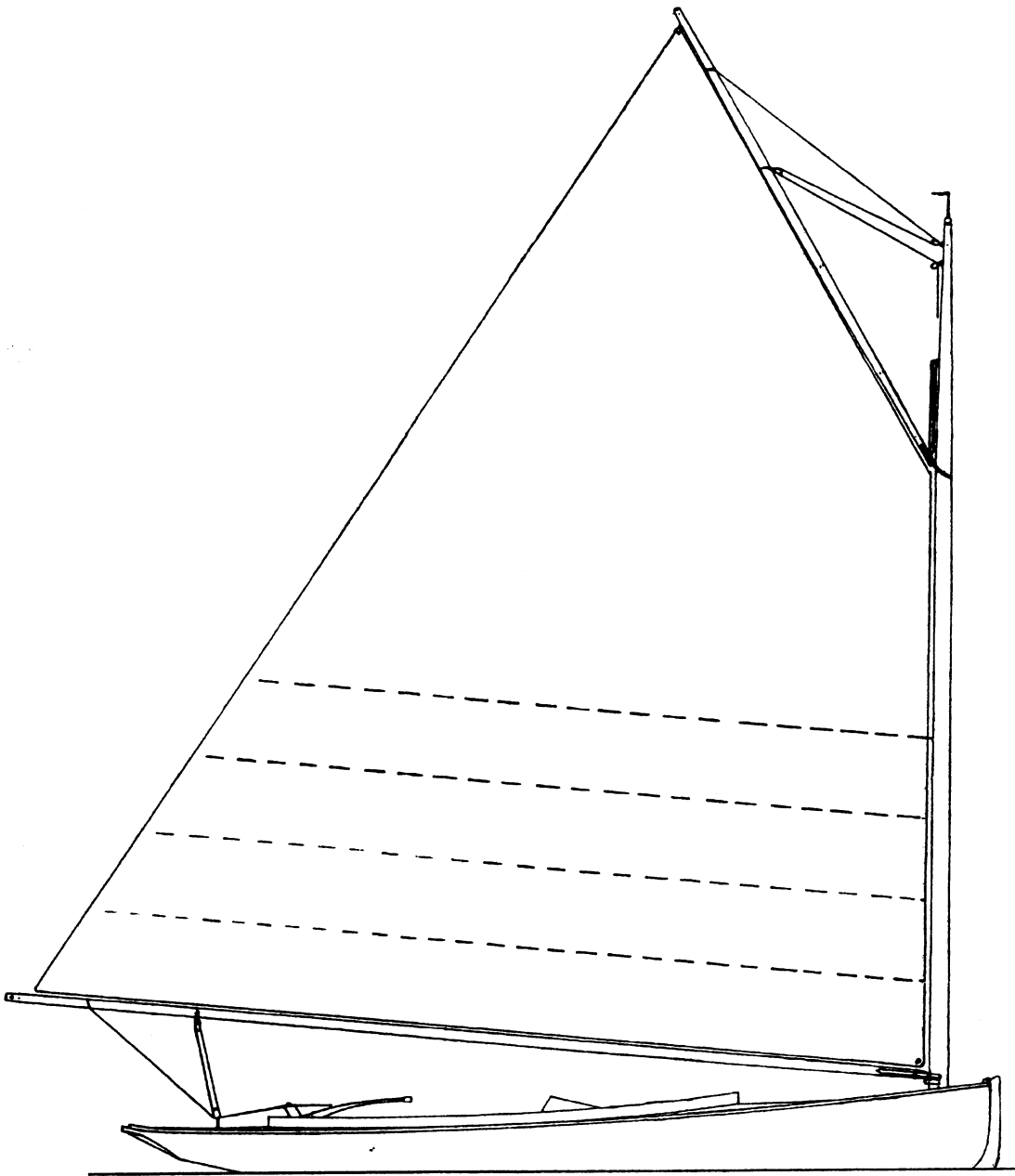


FIGURE 24. Reconstructed sail plan for *Pauline* (after Thomas et al. 1988).

The stern post is scarfed to the aft end of the keel at an angle of 115 degrees, and is a single oak timber measuring 3 feet (0.9 m.) long. The rudder and rudder stock on *Pauline* are cut from a single piece of wood. The rudder is attached to the post with a single bronze strap, and the forward end of the rudder rests on a skeg projecting from the keel. The tiller is inserted into a mortise at the top of the rudder stock, and secured with a pin. The tiller head is carved with the diamond design, one of the trademarks of a Gil Smith boat. *Pauline's* elliptical transom is at an angle of approximately 150 degrees to the keel. The curve of the transom is the result of dubbing a thick, straight piece, rather than being bent in any way. The space along the backbone between the stern post and the transom is occupied by a filler piece.

Structural support is provided by relatively light framing. Eighteen frames are spaced an average of one foot (30.5 cm.) apart on centers. Frames are made of oak, and are 1 ¼ inches (3.2 cm.) molded and 1 ¾ inches sided (4.4 cm.). Futtocks are usually just aft of, and fastened with nails to, their associated floors. A longitudinal stringer adds support near the gunwale.

Steam-bent cedar hull planking is joined edge-to-edge (carvel), and nailed with bronze spikes to the frames. There are eleven strakes per side, and planks are ¾ inch (1.9 cm.) thick. Plank height varies, but near amidships the garboard strake is 4 inches (10.2 cm.), the largest plank at the turn of the bilge is 7½ inches (19.1 cm.), and the gunwale is 2½ inches (6.4 cm.). Planking on *Pauline* tapers to nine strakes at either end. The bottom of the hull interior is covered with ceiling planks (four strakes

on the bottom, and four strakes running mid-way up each side). Ceiling planking near amidships was left unfastened, and provided with fingerpulls, to allow access to ballast and for bailing.

The centerboard trunk is 5 feet, 11 inches (1.8 m long), and the slot tapers in width from 1½ inches (3.8 cm.) forward to 1¼ inches (3.2 cm.) aft. *Pauline* is apparently not the only Smith vessel with this taper. DeFontaine (1969[1966]) speculated that this feature permitted the centerboard to slide to weather one or two degrees at its leading edge, thus improving performance when the vessel was traveling windward. The centerboard trunk on *Pauline* is boxed in by two posts, which are composite structures of several pieces of wood on both port and starboard sides of the slot, 2 feet, 7 inches (0.8 m.) in height.

Decking on *Pauline* is cedar, and is typical of the pattern employed by Smith (Figure 22). Deck planks were steam-bent to match the sheer curvature, and ended at the kingplank from the bow to the aft side of the deck opening. The stern decking was done with a herringbone pattern. The kingplank (through which a hole is cut for the mast) is slightly raised, and measures 10 inches (25.4 cm.) wide with a thickness of 1 inch (2.5 cm.). It is chamfered to meet the deck planking. The deck crown is 4 inches (10.2 cm.) near amidships. There are several athwartship beams supporting the deck; five forward, three in the stern, and one at the bulkhead just forward of the rudder post. A hatch in this bulkhead allows access to a small lazaret. The deck is also supported by lodging and hanging knees. An elliptical coaming (5¼ inches [13.3

cm.] high) surrounds the deck opening. The coaming is composed of two "U"-shaped pieces joined with inverted triangular chocks, held in place with drift pins. A toe rail finishes the top side of the deck.

The mast step is located 1 foot, 6 inches (0.5 m.) abaft the forward perpendicular. The reconstructed sail plan for *Pauline* calls for a 23 foot, 6 inch (7.2 m.) mast, a 23 foot (7 m.) boom, and a 13 foot (4 m.) gaff (Figure 24). The total sail area would have been approximately 320 square feet (30 m.²). Running rigging consisted of a topping lift, halyard, and sheet, all belayed handy to the helmsman. Most Gil Smith boats had three or four sets of reef points for reducing the sail area according to the weather conditions (deFontaine 1969[1966]). The sail would have been attached to the boom through a series of eyebolts, and to the mast with hoops.

Pauline is an example of an early Gil Smith pleasure boat. The hull maintains some of the characteristics of earlier workboats, such as the plumb stem, low freeboard aft of amidships, and a roomy cockpit. However, some subtleties of design are apparent, including the aft overhang and elliptical transom, a "lively" sheer line, and a relatively high angle of deadrise/hard turn of the bilge. Smith would continue to make similar refinements on his vessels into the 20th century, as catboats were increasingly used for pleasure instead of work.

Discussion

Gil Smith was probably the most successful wooden boatbuilder in the history of Long Island. Half models, photographs, eyewitness accounts, and the vessels themselves all suggest that Smith was successful because he was able to adapt his hull design to environmental and economic conditions, the latter of which changed markedly over the course of his seven-decade career.

In terms of environmental factors, Smith's hulls may be seen as the culmination of a lengthy tradition of vernacular boatbuilding on the Great South Bay. The minimal depth and steady, predictable winds on the bay resulted in a hull form with shallow draft, little keel, an adjustable centerboard, and ample sail area. These requirements had been worked out by earlier boatbuilders, and all 19th-century indigenous watercraft (including the South Bay scooter, the Seaford skiff, and the Great South Bay catboat) incorporated them.

Evolution in hull design by Smith was more closely related to economic conditions, although the environment played a constant role. At the beginning of Smith's career in the 1870s and 1880s, most of his vessels were built for duck hunting and shellfishing. However, over-exploitation and pollution of these resources in the bay and surrounding marshes caused the decline of market gunning, and more importantly, shellfishing. Baymen were no longer able to afford a new boat every two or three seasons. In order to stay in business, a boatbuilder had few choices.

One could specialize in overhauling and making repairs to existing vessels, or one could seek a new clientele.

The demise of the shellfishing industry coincided with the rise of the leisure class on the shores of Long Island. Many of the wealthy New York City elite were avid boaters, and demanded hulls that were not only aesthetically pleasing, but fast. Instead of constructing reliable workboats for a dwindling market, several builders, including Gil Smith, turned to building racing and pleasure craft to meet this new and promising market.

From the start of his career, Smith was known for using good materials and expert craftsmanship (Bigelow 1966a), and his desire to continually create a better hull than the last seems to have been an ingrained character trait. Some of Smith's designs appear to be somewhat experimental, especially for vessels he intended to keep for his own use (such as his 1907 *Pelican* [half model in SCHS collection], with exaggerated profile curvature and narrow beam).

Over the course of Smith's career, several hull features on his boats evolve as a response to the changing maritime economy of Long Island's south shore, with the transition from building workboats to building pleasure boats. These features include the creation of a more sleek plan view by increasing the length to beam ratio and moving the maximum beam closer to the bow. The shape of the bow changes from plumb, to a transitional flattened "S" curve, to a single curve or spoon bow. Forward

overhangs were used with the spoon bows, and aft overhangs increase substantially over time.

Smith's apparent reluctance to build a power boat is idiosyncratic, and may have cost him business late in his career. Needless to say, his sailboats were eclipsed by motor boats for one possible market during the 1920s: the rum-runners who needed fast boats to evade coastal patrols during Prohibition. Nonetheless, some have identified Smith's finest vessel as the last one he built by himself, *Edna*, completed in 1926 (e.g., deFontaine 1969[1966]).

Edna (Figure 16) represents the final realization of a process that lasted Smith's entire career as a boatbuilder. This process was an evolutionary one in which the Great South Bay workboat was transformed via gradual modifications into a sleek racing yacht. Smith's catboat *Pauline*, built in 1895 (Figure 20) provides a good example of the mid-point of this process. *Pauline* exhibits the plumb stem and wide beam of a workboat, but with modifications, including a marked hollow under the bow and an overhanging stern. By the time he finished *Edna* in 1926, the curved bow and even longer stern, along with a slimmer length to beam ratio, contributed to the overall more streamlined profile of a classic Smith racing vessel. The environmental constraints imposed by the Great South Bay were the same for all vessels, but each of Smith's designs were well-suited to meet the changing functional needs of his clients, drawn from both the working class and the leisure class.

CONCLUSION

Work continued at the Patchogue boatyard for a decade after Gil Smith retired following a stroke in 1936. It is a tribute to his father's local fame that Asa Smith's business card of the 1940s stated in letters larger than his own name, "Son of Gil Smith" (LIMM collection). Asa Smith had started to develop his own clientele while his father was still alive; what especially set him apart from his father is that Asa built motor boats. Although Asa Smith's work is much less well-known, the half model for the power boat *Falcon* built in 1933 (SCHS collection) suggests that Asa carefully emulated his father's designs. The boatyard in Patchogue closed shortly after Asa's death in 1950.

Nearly sixty years after his death, Gil Smith is still known as Long Island's most prolific boatbuilder (Knickerbocker 1980). During the 1970s, there was an effort to create a new racing class based on Smith's 1909 catboat *Moonbeam* (Smith 1976:33). Fiberglass replicas of the 21 foot, six inch (6.6 m.) long *Moonbeam* regularly race on the Great South Bay, although now with a sloop rig.

Some original Smith boats are still sailed for pleasure. Others were operated as work boats, well beyond their expected use-life. The circa 1883 *Senad*, commissioned by an oysterman, was slated for an overhaul to become a scallop boat before the director of the East Hampton Town Marine Museum intervened in the mid-1970s (Kuhn 1988).

The ultimate blow to traditional wooden boatbuilding on Long Island was the introduction of the naphtha, and later gasoline engine. Outboard motors became more efficient in the 1930s (Noel 1981), and hull form had to be changed to accommodate them. Sterns became vertical to handle clamp-on motors, and squaring the junction of the sternpost with the keel was necessary to keep the suction from the propeller from dragging the stern down. Several Gil Smith boats were modified by second and third generation owners by cutting the overhanging stern to accommodate an outboard motor (Charles Merwin, 1999, pers. comm.). Modern fiberglass construction has all but rendered wood hulls obsolete.

During the late 19th century in southern New England, a rich variety of vernacular watercraft ideally suited to specific environmental and economic conditions was constructed. As the master builder on Long Island's Great South Bay, Gil Smith contributed immeasurably to a long tradition of local boatbuilding. His career is especially informative for understanding how adaptation to changing conditions helped prolong the age of sail in the region. It is fortunate that the legacy of Gil Smith has been preserved through oral history, photographs, half models, and most importantly, the boats themselves.

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APPENDIX A

GLOSSARY OF NAUTICAL TERMS

<i>aft</i>	at or towards the stern, or rear, of a vessel
<i>amidships</i>	also midships; in or near the part of a ship midway between the bow and stern
<i>bateaux</i>	a flat-bottomed boat with raked, pointed ends and flaring sides
<i>beam</i>	the width of a vessel
<i>brig</i>	a two-masted square-rigged ship
<i>bow</i>	the forward or forward structure of a vessel
<i>bugeye</i>	a small flat-bottomed boat with a centerboard, and typically two masts
<i>carvel</i>	system of hull sheathing where planks are joined edge-to-edge
<i>catboat</i>	a sailboat with the single mast located near the bow, typically with a broad beam and light draft for stability in shallow water
<i>centerboard</i>	a moveable plank which acts like a keel but that can be raised or lowered depending on water depth
<i>coaming</i>	a raised frame to keep out water, usually around a hatchway on deck
<i>deadrise</i>	the angle between the horizontal and the bottom of a hull
<i>draft</i>	the depth of water a vessel draws, especially when loaded
<i>dugout</i>	a boat (canoe) made by hollowing out a large log
<i>fore</i>	at or towards the bow, or front, of a vessel
<i>fore-and-aft</i>	a sailing-ship rig of sails (none square) aligned with the longitudinal axis of the ship, typical of schooner rigs

<i>freeboard</i>	the distance from the water to the upper edge of the side of a vessel
<i>futtock</i>	the upper part of a frame of a vessel, scarfed to a floor to form a complete frame or rib
<i>gaff</i>	the spar on which the top of a fore-and-aft sail is extended
<i>garboard</i>	the strake closest to the keel of a vessel
<i>gunwale</i>	the uppermost strake or edge of a vessel
<i>half model</i>	a scaled three-dimensional carving of a vessel, sectioned along the length and typically attached to a plaque
<i>halyard</i>	rigging used to control the gaff
<i>jib</i>	a small triangular sail at the bow of a boat
<i>keel</i>	the main longitudinal timber that extends along the center of the bottom of a vessel
<i>kingplank</i>	the main longitudinal deck plank
<i>lines plan</i>	architectural drawings for a vessel, minimally consisting of the profile or sheer view, sections, and the plan view
<i>loft</i>	to lay out a full-sized working drawing of the lines of a vessel
<i>longboat</i>	a relatively large ship's boat, propelled by oars
<i>Narrasketuck sloop</i>	a small racing sloop developed on the Great South Bay, Long Island during the 1930s
<i>packet sloop</i>	a small ship for transporting passengers, mail, and light cargo
<i>plumb stem</i>	bow shape where the junction of the stem and keel is roughly perpendicular
<i>punt</i>	a narrow flat-bottomed boat usually propelled with a pole; typically used for duck hunting

- reef* to reduce the area of a sail by rolling or folding a portion (typically along reef points in the sail)
- rigging* the lines (rope, cable, or chain) used for working the sails; more generally, used to refer to sails, masts, spars, lines, and appurtenances
- rockered* upward curve at the ends of the longitudinal section of a vessel
- sand-bagger* a small centerboard boat with perpendicular ends and a sloop rig, used in the western end of Long Island Sound
- schooner* a fore-and-aft rigged ship, typically carrying two masts, where the mainmast is located nearly amidships
- scow* a flat-bottomed boat with square ends, typically used for transporting bulk goods (e.g., hay, coal, brick, sand)
- Seaford skiff* a small round-bottomed boat with a raking stem and centerboard keel, propelled by sail or rowed, used on the Great South Bay, Long Island
- seine* a large net that hangs vertically in the water, used to catch fish when the ends are pulled together or are drawn ashore
- shallop* a small open boat propelled by oar or sail (usually two-masted)
- sharpie* a small flat-bottomed rowboat with a rockered keel and sloping transom
- sheer line* the bow to stern curvature along the upper edge of a vessel as shown in a side elevation
- sheer plan* the profile of side elevation in the lines plan of a vessel
- sheet* the rigging which regulates the angle at which a sail is set in relation to the wind
- shoal water* shallow water; on the Great South Bay, Long Island, shoal water is frequently associated with sandbars
- sloop* a fore-and-aft rigged vessel, typically with one mast and a single jib
- smack* a sailboat with a deep well in the hold for storing fish

<i>South Bay scooter</i>	a small flat-bottomed boat fitted with metal runners for winter use on the Great South Bay, Long Island
<i>spar</i>	a rounded wood pole used to support rigging (e.g., a mast, boom, gaff, or yard)
<i>spinnaker</i>	a large triangular sail set on a light spar, typically used when sailing before the wind
<i>sprit</i>	a spar that crosses a fore-and-aft sail diagonally
<i>square-rig</i>	a sailing-ship rig with square sails extended on yards perpendicular to the masts
<i>stem</i>	also bow; the main upright post at the front of a vessel
<i>stern</i>	the rear or rear structure of a vessel
<i>strake</i>	a continuous band of hull planking
<i>toe rail</i>	a narrow raised timber running along the outside edge of the deck on a small vessel
<i>transom</i>	the planking at the stern of any vessel without a pointed end
<i>tumblehome</i>	the curvature of a vessel seen in cross-section, where the maximum width is not at the upper edge
<i>waterline length</i>	the length of a hull measured where the water rises under normal load, as opposed to length overall, the maximum longitudinal dimension of a vessel
<i>whaleboat</i>	a long narrow boat with raked, pointed ends, typically propelled by oar

APPENDIX B
INVENTORY OF GIL SMITH BOATS

Year	Name	Class	Rig	LOA*	Comments
1876			cat	24'	Smith's own boat (used for move to Patchogue)
1881			cat	29'	built for Edwin Dayton of Patchogue for \$200; 12' beam, 3'3" draft, with summer and after cabins
1881			cat	~29'	same model as Dayton's, for Mr. Carman
1882	<i>Patience</i>		sloop	45'	built for Samuel T. Peters of Bayshore; later converted to power boat
1883			sloop	33'	for Reuben W. Rowley; 14' beam
1883			sloop	28'	for Nelson Ketcham of Islip; 12'9" beam
1883			cat	19'	for W.D. Parsons of Orange, NJ
1883				12.5'	for Sidney B. Topping of Westhampton
ca. 1883	<i>Senad</i>		cat	25'6"	workboat for Thomas Danes, bayman; 8'8" beam, 2'10" draft; extant vessel (East Hampton Town Marine Museum)
1885	<i>Charles William Mott</i>		cat		plumb stem
1885	<i>Belle Powell</i>		cat		plumb stem
1885	<i>Pavilion</i>		cat		plumb stem
1887	<i>Frolic</i>		cat		for Staten Is. party; won race day of delivery
ca. 1890	<i>Naiad</i>				for M.A. Stearn; used same half model for <i>Senad</i> and <i>Bess</i> ; half model belongs to Smithsonian
ca. 1890	<i>Bess</i>				for Edward Fitzgibbons; same as <i>Naiad</i> and <i>Senad</i>

*LOA=length overall

Year	Name	Class	Rig	LOA*	Comments
ca. 1890	<i>Senad</i>				for Peter Gilsey; same as <i>Naiad</i> and <i>Bess</i>
1890	<i>Rosalie</i>		cat	30'	11' beam; half model
1891	<i>Lucile</i>		cat	21.5'	for Francis Barrett; 7' beam; (lines in Massa 1979[1896])
ca. 1892	<i>Blue Wing</i>	A			for Griswold Denison Sr. of Westhampton
1892	<i>Dutchess</i>			39'6"	for Charles Palmer; 13' beam; transitional "S" bow; half model
1892	<i>Patience</i>			44'	14'3" beam; half model altered
1892	<i>David B.</i>			45'	transitional "S" bow; half model
1892-93	<i>Justine</i>		cat	34'	built for Bayard Cutting of Great River for \$1100; 12'6" beam, 2'6" draft with water closet and ice box, cabinets, headroom in summer cabin
1893				12-13'	Bayard Cutting ordered for his son
1892-93	<i>Squaw</i>		cat		for H.S. Jewell of Brooklyn; won several races including Great South Bay Champion Cup in 1896; 2 cabins (one open), originally had plumb stem, but altered in 1896
pre-1894	<i>Surprise</i>				winner, 1894 Westhampton Yacht race
ca. 1895	<i>Watchogue</i>				photo in L IMM collection
1895	<i>Pauline</i>	B	cat	22'	extant vessel (L IMM collection)
1895	<i>Thetis</i>	B	cat		for Mr. Mills; won 4 races in first season
1895	<i>Isolde</i>	B	cat	22'8"	built for 14-yr-old John Masury, won 4 of 5 races first season (beaten only by <i>Thetis</i>); LWL 18'4"
1895	<i>Windward</i>				for Dodd family of Bellport; photo in L IMM collection

*LOA=length overall

Year	Name	Class	Rig	LOA*	Comments
1897	<i>Marion</i> (later <i>Sweetheart</i>)		cat	25'	built for himself, but sold to C.G. Hedge of New York City; 8'6" beam; half model; plumb stem
1899	<i>Mariam</i>			27'6"	8' beam; half model; spoon bow
pre-1900	<i>Nemesis</i>				for F.A. Otis of Bellport; photo in LIMM collection
ca. 1900	<i>Ethel</i>				for Stanley Fowler of Brightwaters
ca. 1900	<i>Mollie D.</i>		cat	36'	built for himself; 9'6" beam; spoon bow; half model
1900	<i>Dorothy</i>			34'6"	for Fred Southard; transitional "S" bow; half model
1901	<i>Reverie</i>		sloop	40'	for Frederick Bourne of Oakdale
1901	<i>Adelaide I</i>				for Theodore Conklin
1901-02	<i>Jealousy</i>	B	cat	22'	extant vessel (Bellport-Brookhaven Historical Society)
1903	<i>Spalpeen</i>	BB	cat		
1904	<i>Iris</i>				for J. Bailey of Patchogue; designed by Nathaniel Herreshoff
1905			yacht	49'	built for Joseph Bailey for \$5000; 31' LWL, 12' beam, 2'11" draft with cabin
1905	<i>Moonray</i>	AA	cat		extant vessel (LIMM collection)
ca. 1905	<i>Idler</i>				for Bill Kreamer of Bellport
1906-07	<i>Kid</i>	P	sloop	37'	for Stanley Cox
1906			gun punt		extant vessel (Friends for Long Island's Heritage)
1906	<i>Pelican</i>			37'9"	photo in LIMM collection
1906	<i>Joyette</i>	sonder			designed by Charles Mower, won President Taft Cup against Germany

*LOA = length overall

Year	Name	Class	Rig	LOA*	Comments
1906			cat	28'	for Judge O'Brien of New York City
1906			cat	26'	for Edgar Linde of New York City
1906			cat	22'	for William B. Dana of Moriches
1906			cat	24'	for F.A.M. Burrell of New York City
1906			cat	20'	for Mr. Atwater of New York City
1906	<i>Elvira</i>		sloop	38'	for Harry Walton of New York City; half model
1907	<i>Bess</i> (later <i>Bee</i>)	P	sloop	40'	for William T. Walton, designed from 1906 <i>Elvira</i> model
1907	<i>Pelican</i>			33'	own boat; half model
1907	<i>Higgins</i>			27'6"	may be one of 1906 boats, above; half model
1907	<i>Rainbow</i>		cat	~28'	may be one of 1906 boats, above
ca. 1907	<i>Modesty</i>				may be one of 1906 boats, above; photo in L IMM collection
ca. 1907	<i>Pawnee</i>				may be one of 1906 boats, above; photo in L IMM collection
ca. 1907	<i>Dodo</i>				may be one of 1906 boats, above; photo in L IMM collection
pre-1907	<i>Gertrude</i>				photo in L IMM collection
1908	<i>Cygnnet</i> (later <i>Three Bears</i> , then <i>Keitt</i>)		sloop	35'	11' beam, 5' draft; won 3 of 5 Fire Island Lightship races; sunk near Sandy Hook in 1945
1908	<i>Kittery</i>	V	cat	28'	built for P. Bigelow for \$800; used same half model as <i>Rainbow</i> , but with minor alterations
1909	<i>Moonbeam</i>	AA or B	cat	26.5'	hull deteriorated, but used for mold for fiberglass replicas

*LOA=length overall

Year	Name	Class	Rig	LOA*	Comments
ca. 1910	<i>Shoreacres</i>	A	cat		for Ronald Grose of East Moriches
1910	<i>Cayuga</i>			50'	14' beam; half model
1910	<i>Joy</i>	BB	cat	25'4"	7' beam; extant vessel (LIMM collection)
1910	<i>Majesty</i>			27'6"	for R. Earle; half model
1910	<i>Big Sis</i>			27'6"	same model as <i>Majesty</i>
1910	<i>Senta</i>	R	sloop		own boat
1913	<i>Eskawaja</i>		sloop	38'6"	for Warren Leslie; half model
1915	<i>Lorelei</i>	BB	cat	25'	extant vessel (LIMM collection)
ca. 1919	<i>Wanderer</i>	P	sloop	36'	9' beam, 2' draft
ca. 1920	<i>Constance</i>	P	sloop		
ca. 1920	<i>Marion</i>		cat	~40'	12' beam; half model
1923	<i>Elvira</i>	P	sloop	35'	
ca. 1925	<i>Virginia</i>	V	cat		
1925-28	<i>Gay B., Gabby</i>	B	cat		extant vessel; acquisition by LIMM in progress
1926	<i>Edna</i>	P	sloop	38'	last boat Gil Smith built himself; for Northam Warren; 9'6" beam, 3'3" draft; 1926 and 1928 Queen of the Bay Cup; won 31 of 33 races; sunk in Long Island Sound
1936	<i>Hurricane</i>	R	sloop	~30'	finished by Asa Smith
1936	<i>Mavourneen</i>	R	sloop	~30'	finished by Asa Smith
1936	<i>Pauline</i>	R	sloop	29'11"	finished by Asa Smith
1936	<i>LDC/Eldecee</i>	R	sloop	~30'	finished by Asa Smith

*LOA = length overall

Year	Name	Class	Rig	LOA*	Comments
	<i>Adelaide IV</i>				half model in Smithsonian
	<i>Alva</i>				photo in LIMM collection
	<i>Beaulah</i>				own boat
	<i>Ethyl & Mabel</i>			33'6"	probably pre-1900; half model
	<i>Grace (later Reverie)</i>			34'	probably post-1900
	<i>Jennie S.</i>				own boat
	<i>Orathia</i>			32'	for Edward Bement; half model; probably pre-1900
	<i>Signet</i>			29'6"	probably pre-1890; half model
	never built			26'6"	probably pre-1900; half model
				34'6"	probably pre-1890; half model; SCHS #13

*LOA = length overall

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