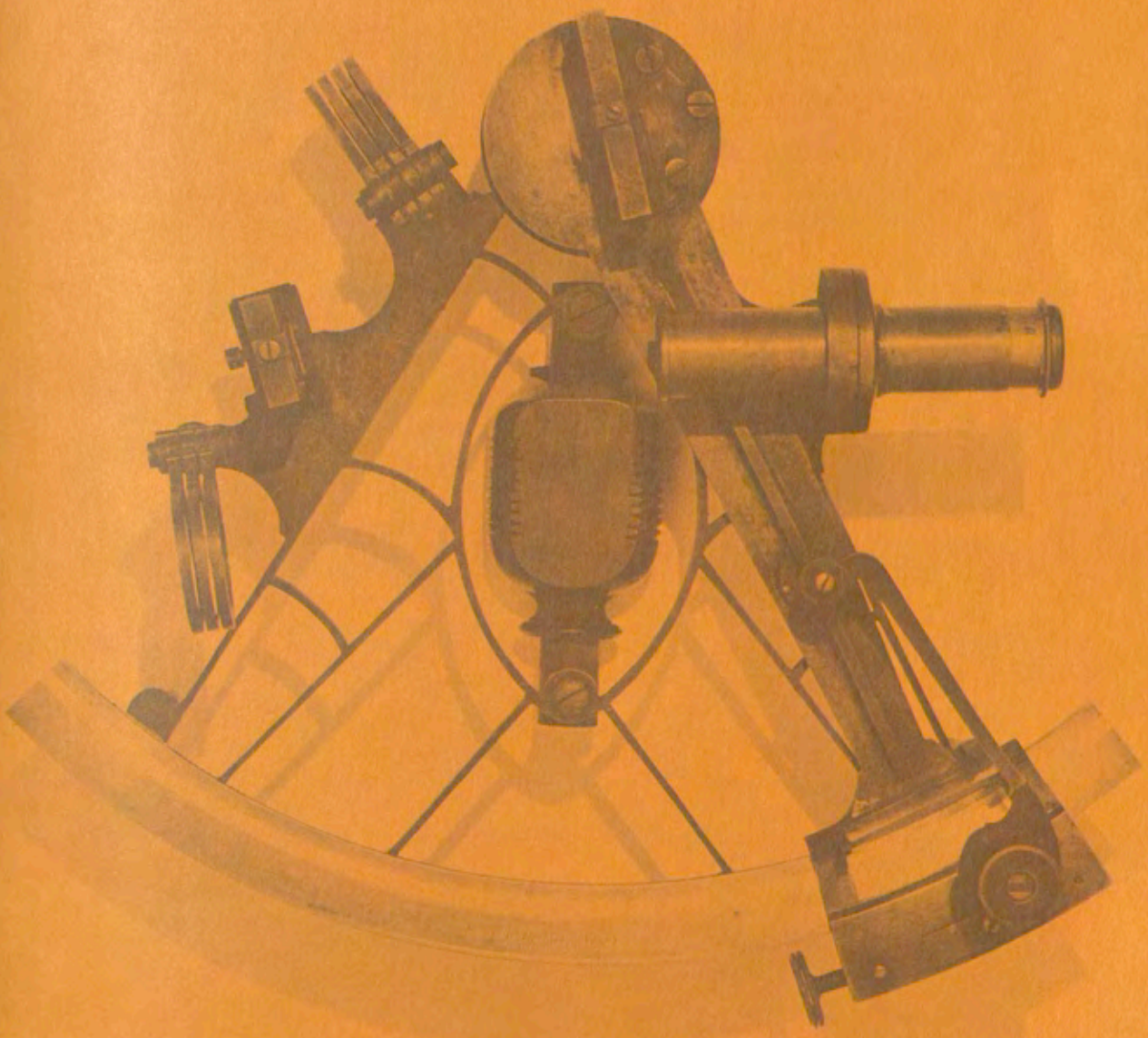
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THE LOG OF MYSTIC SEAPORT



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FRONT COVER: *Captain Charles Hervey Townshend's sextant. (63.357)*

BACK COVER: *Off course! The iron bark* Glenbervie, *built in 1866 as a tea clipper, was en route from London to West Africa when she lost her way during heavy weather in the English Channel and went ashore on the Cornwall coast in December 1901. Calamities such as this are featured in "Shipwrecks and Disasters at Sea," on exhibit at the Museum's R. J. Schaefer Building until 16 October 1987. (76.1.201.49)*

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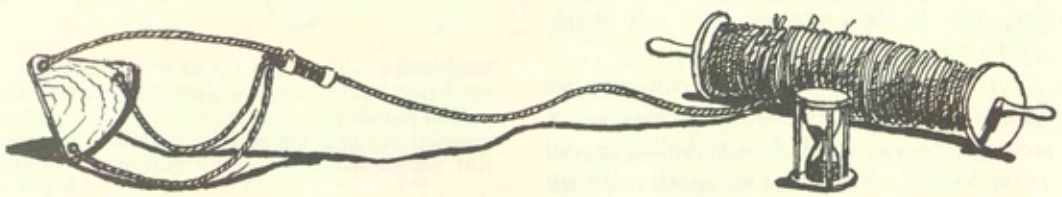
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SIGHTINGS



During the past winter, neighbors of the Museum were once again aware of the stout hull of the *Charles W. Morgan* perched high and dry on our lift dock. For some this raised a question—didn't we just celebrate completion of the *Morgan*'s restoration? The answer is a resounding "yes." The shipyard staff did complete fifteen years of effort addressing her major restoration problems. But conservation never ends. The *Morgan* continues to demand attention year in, year out, much as she did when she was a working vessel with a crew of thirty to serve her. In creating an endowment for the ongoing needs of the *Morgan*, the people of our community have fulfilled one of our most pressing needs.

The *Morgan* has long been recognized as a symbol of Mystic Seaport, and in this instance we can look at the vessel as the most visible symbol of this museum's preservation and education objectives. Virtually everyone at the Seaport is involved directly or indirectly in meeting our responsibilities to preserve the tangible and intangible evidence of our past.

Some of the artifacts we seek to preserve are more stable and less bent on self-destruction, but all need attention. Paintings often need treatment to strengthen and stabilize them; they always require a healthy environment while on exhibition or in storage. Careful attention must be paid to our collections of figureheads, scrimshaw, models, and works of art on paper. In an area that has taken on greater importance for the Seaport in recent decades, we face great challenges in the preservation of still photographs and motion pictures.

Obviously, the structures that comprise our museum complex need constant attention if they are to be preserved. With sixty buildings and 2,000 feet of waterfront, we must make an enormous effort to keep these historic buildings in proper condition under the strain of the elements and of steady visitor use.

Our Library too is faced with the preservation of not only rare books and hundreds of thousands of manuscript items and charts, but also the books and periodicals that aid researchers and provide much of the information which helps to meet the most challenging preservation problem—the perpetuation of traditional activities and skills.

Carrying on the skills and other maritime activities is particularly challenging because of the difficulty in the transfer of information. We can preserve a tool, and the basics of how it is used can be written down, but the subtleties of its use by a skilled craftsman is something that can be easily lost. In a number of areas, such as the shipyard, the Museum works to see that these skills are passed on and that traditional music and other activities are also continued.

Alongside the staff having direct involvement in our preservation efforts, others have a direct focus on providing the support needed to carry out this work. This support comes through the Development Department and its membership division, the accounting office, other administrative offices, and the resources generated by the Galley and the Mystic Seaport Museum Stores.

We must all expect the work to go on and the *Morgan* to appear on the lift dock again in a few years. The staff and members of the Seaport have been meeting the conservation and preservation needs with increasing professionalism, but we can never assume that the job is done. The destructive forces in our environment are always at work on our collection, and we must work steadily to insure the survival of these objects and skills.

J. Revell Carr

Lorenzo Dow Baker

Yankee Entrepreneur in the Caribbean Fruit Trade

RANDOLPH BARTLETT

1986 Log *Prize Article Contest Winner*

Introduction

At 2 P.M. on Sunday, 28 May 1871, a small two-masted fishing schooner rounded Race Point and began the final hours of a 1,600-mile voyage from Jamaica to Boston. She was the *Telegraph*, from Wellfleet, Massachusetts, and she had been seventeen days at sea. After nearly two and one-half decades of hard use knocking about New England's coast as a mackerel boat and coaster, the twenty-three-year-old vessel was still a pretty sight under full sail—from a distance. A closer look, however, revealed the ravages of countless storms, weathered paint, rusted fittings, and evidence of innumerable repair jobs. In fact, as her captain set his course for Minots Ledge Light on that quiet Sunday afternoon, she was barely seaworthy and leaking badly. Only the crew's round-the-clock efforts at the pumps prevented the vessel from sinking.

Survival was also due, however, in large part to the daring seamanship of the *Telegraph*'s owner and master, a thirty-one-year-old Wellfleeter named Lorenzo Dow Baker. More than on any other cruise, time was precious to the young skipper as he coaxed every bit of speed possible from the *Telegraph*'s worn hull. She carried an unusual, highly perishable cargo that represented the biggest economic gamble of his life, and he was determined not to fail. Taking advantage of the favorable southeasterly wind, Baker maintained a full press of canvas and the vessel glided past Boston Light just after dark, anchoring at quarantine for the night. Early the next morning, the anxious Baker received clearance and got underway. At 6:00 A.M. on 29 May, the *Telegraph* hauled alongside Long Wharf, where 35,220 coconuts and approximately 400 bunches of rapidly ripening Jamaican bananas were quickly unloaded. This voyage was a historic "first" for Massachusetts and Baker: it brought the first load of tropical bananas to Boston's consumers and a profit to the Cape Codder responsible for it. More significantly, it marked the genesis of the modern United States–Caribbean fruit trade.[1]

Historically, although the *Telegraph*'s role in Lorenzo Dow Baker's subsequent Caribbean adventures was soon over, the work he commenced as her master was destined to expand dramatically during the remaining three decades of the nineteenth-century and into the twentieth. More than any other person during the 1870s and '80s, he became the pioneering Yankee most responsible for creating a viable international trade in tropical fruit between Jamaica and New England. In addition, although he neither anticipated nor planned it that way, his life's work played a key role in the eventual formation in 1899 of that twentieth-century corporate giant, the United Fruit Company. Thereafter, he faded into historical obscurity. Until recently, no factual study of the life and career of this interesting seaman has been done. Discovery of a substantial amount of documentation, however, has made possible this examination of his life and career.[2]

Randolph Bartlett holds a Ph.D. in History from American University in Washington, D.C. A former Peace Corps Volunteer in Ecuador, he has a special interest in Latin American History. He is currently Professor of History at Cape Cod Community College in West Barnstable, Massachusetts.



In 1859, at age nineteen, a sober young Lorenzo Dow Baker posed for the camera at the beginning of his career as a fisherman and coaster. (Courtesy Captain Reuben Rich Baker)

The Schooner Man From Wellfleet

Who was this Cape Codder who brought the first cargo of bananas to Boston 116 years ago? Like the schooners he sailed, Dow Baker (as his family and friends called him) was a product of his times. Born on 15 March 1840 in Wellfleet, Massachusetts, he was an observant and resourceful individual who grew up in close harmony with the sea.

During the early 1860s and '70s, the stocky, blue-eyed young man was a familiar figure around town. He had grown up in that small, closely knit lower Cape community, which was then an active fishing port. Its waterfront along Duck Creek and Mayo Beach was lined with shacks, wharves, and stores that catered to the numerous fishing and coasting schooners using its well protected harbor. The fishing life was strenuous, sometimes grim, and seldom significantly profitable, and the Bakers and their fellow "Townies" were generally quiet and purposeful. They tended their gardens, chopped wood, and went to church regularly. The town exhibited little of the rowdiness that characterized larger maritime communities such as New Bedford and Gloucester. Children received sporadic academic training; when time and the town's finances permitted, a schoolmaster was hired to teach the basics at the Wellfleet District School. Aside from attending the primary grades, Dow Baker, like most of his contemporaries, received no formal higher education.[3]

Young Baker's real education was acquired through practical experience from daily contact with fishermen and the sea. It was on the rolling, pitching decks of schooners—not in the classroom—that he learned the skills expected of one destined to command. When he was ten years old, he went to sea for the first time as cabin boy and cook's helper; by the time he was twenty he was skipper of his first vessel, the *Robert D. Rhodes*. Shortly thereafter, in 1861, he married Martha Hopkins of Wellfleet and eventually became the father of four children. The two oldest, Lorenzo Dow Jr. and Joshua H., would later play significant roles in his Caribbean fruit trading career. During the Civil War, Baker roamed the waters from Nova Scotia to the Chesapeake, fishing and coasting. Apparently, he avoided participation in that conflict, choosing instead to hone his navigational and leadership talents in a noncombatant capacity.

In the years after the war, Baker's reputation as a hard working, skillful mariner, persuasive and shrewd in his business affairs, was well known around town. So were his religious convictions, which had been strongly influenced by Methodism.[4] His beliefs were deeply rooted, and he practiced them ashore and afloat. On his vessels, grace was observed before every meal, and Sunday services were regularly conducted at sea. The *Telegraph* even carried a small foot-powered organ on board and an organist among the crew.[5]

Such then, were the ingredients of the young schooner captain Lorenzo Dow Baker, the man who brought the first bananas to Boston. He was adventuresome, confident, and possessed of

tremendous stamina. He accepted risks as a normal part of making a living in a dangerous profession. Whatever inadequacies he might have had were compensated by religious convictions that helped to carry him through life's more difficult moments. All these personal traits contributed to his later success as a banana entrepreneur in the Caribbean.

The Early Years

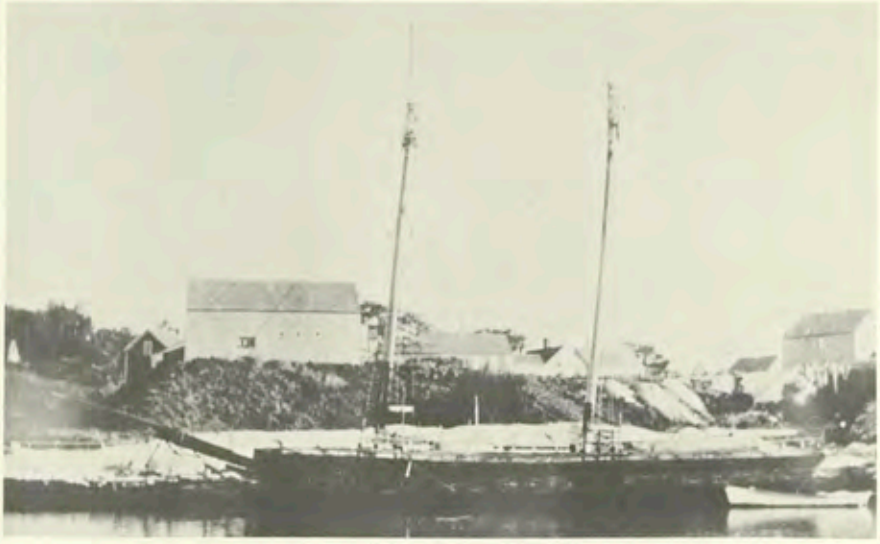
Lorenzo Dow Baker's first experimental fruit "skim" (as he later referred to such voyages) had its origins in a trip he had made to the Caribbean in the spring of 1870. While returning from a chartered trip to Venezuela, where he had delivered a load of mining equipment for a private company, he stopped in Port Morant, Jamaica, in hopes of securing a return cargo.[6] It was there that he got his first exposure to bananas and their pecuniary possibilities. Among other things, he loaded some bunches aboard and, upon arrival in the United States nearly three weeks later, found that those not spoiled sold profitably.

Baker's letters leave no doubt that his next voyage in 1871 was carefully planned to obtain tropical fruit in Port Antonio for sale in Boston. That spring he filled the *Telegraph*'s hold with "3268 feet of white pine boards and pitch pine scantlings," and departed from Provincetown as soon as the weather would permit.[7] Considering the condition of his vessel and the distance involved, it was a daring venture. The entire cargo had been purchased on credit. But he knew that the wood was in demand in Jamaica and would fetch a premium price. With the profits, he planned to buy the bananas he had promised his contacts in the Boston produce market.

On 21 March 1871, the little schooner left Cape Cod bound for the Caribbean. The ensuing sixteen day voyage was, judging from the captain's terse logbook entries, a nightmare that very nearly finished the vessel, her crew, and Baker's banana career before it began. Almost immediately, the *Telegraph* encountered "strong West-Northwest gales and high seas," and after several days of pounding she was "labouring heavily and shipping large quantities of water."[8] Limping into Port Antonio, the vessel was laid up for five weeks undergoing repairs. Baker had ample time to sell his cargo of lumber and purchase the fruit that he subsequently transported back to Boston. On 11 May 1871 the *Telegraph*, minus her cook (who deserted rather than, one presumes, face the possibility of another voyage like the one that had brought him to Jamaica), departed Port Antonio with all sails set. Lorenzo Dow Baker was on his way to a place in New England's maritime history.

The profits from this trip convinced the

Originally built at East Boston in 1847, the 76-ton, 70-foot *Telegraph* had had a long career before L. D. Baker used her in his pioneering fruit venture in 1871. (Courtesy Peabody Museum of Salem, Massachusetts)



shrewd Yankee fisherman that tropical bananas had great promise as a supplementary source of income. Although not yet ready to devote all his efforts to the fruit trade, he gradually increased his voyages to the Caribbean during the rest of the decade. By trial and error, he mastered the difficult problems associated with the banana's innate perishability—the irreversible maturation process that commences as soon as the green bunches are cut from their stalks. Time, his adversary, along with the tide and a freshly cut stem of green bananas, waited for no one. Baker had only three or four weeks in which to deliver the fruit to market, and more than once he "hove overboard alot of bananas that were rotten and smelling bad."[9] With each passing year Dow's expertise increased and his involvement in Jamaica deepened. He acquired larger, faster schooners and his list of commission merchants, grocers, and fruit dealers in Boston, New York, and other eastern cities expanded. In addition to bananas and coconuts, Baker supplied pineapples, citrus fruit, and logwood. Finding himself hard-pressed to make deliveries of these products and still have time to catch mackerel off Cape Cod during the fishing season, Baker chose to become a full-time fruit trade entrepreneur.

Taking his wife Martha, his oldest son "Loren" (Lorenzo Dow Jr., then a teenager of sixteen years), and his three younger children, Joshua, Martha Alberta, and Reuben, Baker relocated in Jamaica about 1880. There, in partnership with his brother-in-law Elisha Hopkins, he founded L. D. Baker and Company. Based on the northeastern coast of the island, its headquarters was located in Port Antonio. A branch office was established at Port Morant. Both locations were carefully chosen by the observant Baker: they were accessible by road and trail to abundant sources of bananas nearby and, very importantly, they each possessed the deepest, most sheltered harbors on that end of the island. They were ideally suited for the future construction of wharves and facilities that would, Baker foresaw, be necessary for company growth.

Baker began as a banana entrepreneur in Jamaica at an auspicious time. Although he had investigated Cuba, the Dominican Republic, and the Gulf Coast of Central America, he chose the British colony for a variety of practical reasons. Geographically, the island was close to the American market. It possessed abundant fruit resources and plenty of cheap labor.[10] Also, Jamaica was a politically stable Crown colony where capitalism was well established and protected by British law. The cautious Cape Codder was certain that his small enterprise would have its best chance for economic survival in this environment. History subsequently proved him correct.

During his transition from fishing to banana trading in the mid-1870s, Baker commanded the 109-ton, 86-foot clipper schooner *Eunice P. Newcomb*, built at East Boston in 1860. She was photographed in the tropics in 1876. (Courtesy Captain Reuben Rich Baker)



Yankee Fruit Trader in Jamaica

During the early 1880s, L. D. Baker and Company busily filled orders for fruit from a growing number of commission merchants and grocers located from Charleston to Boston. Immersed in all aspects of his new career, Dow Baker



Elisha B. Hopkins (1857–) was Baker's brother-in-law and partner in L. D. Baker and Company. Photo ca. 1880. (Courtesy Captain Reuben Rich Baker)

scrambled to keep on top of the procuring, processing, shipping, and marketing phases of the trade. He made agreements with the Jamaican peasantry, who were then his only source of fruit, which grew wild in the mountainous terrain of Portland Parish, to supply L. D. Baker and Company with bananas on a regular basis. He supervised loading the delicate produce into the holds of vessels that made regular visits to his wharves, and several months of each year he traveled on business in the United States.

His motto was "Quality, Quantity, and Dispatch." In the early days, when a ship arrived in Port Antonio Baker would spread the word through the surrounding countryside that fruit was needed at the harbor immediately.[11] The small farmers then cut and delivered their green stems of bananas for possible purchase. After careful inspection, Baker selected only the best and quickly loaded them onto the waiting vessel. Depending on the size of the cargo, this process often continued under his watchful eye throughout the night. He rewarded stevedores who were consistently careful and dismissed those who were careless. To Baker, every blow or bump dealt to a green bunch of bananas meant an unnecessary blemish to the ripened fruit and decreased sales. He was not in business to lose

L. D. Baker (seated at left) and his family on an outing soon after their arrival in Jamaica, ca. 1880. Martha Baker sits on horseback at center. Note the banana plants at right. This spot, called Banyan Tree Springs, later became part of Boundbrook Plantation, the headquarters of L. D. Baker and Company. (Courtesy Captain Reuben Rich Baker)





Port Antonio harbor, ca. 1883. At far left is L. D. Baker and Company's wharf, with the 1,638-ton, 298-foot *Andes* of the Atlas Steamship Company (built Govan, Scotland, 1865) loading bananas. At the Moodie Company Wharf, left of center, the 1,065-ton, 244-foot Italian steamer *S. & J. Oteri* (built Middlesboro, England, 1882) loads for the run to New Orleans. At Sutherland's Wharf, right, the 380-ton, 141-foot *Tropic* (built Hartlepool, England, 1862) takes on fruit for Philadelphia shortly before being wrecked in July 1883. The 1,015-ton, 231-foot *Belize* (built Glasgow, Scotland, 1871) lies in the harbor. (Courtesy Captain Reuben Rich Baker)

money or customers, and it was imperative that L. D. Baker and Company's reputation should not suffer. Below decks, Dow saw to it that equal care was taken in storing the highly perishable fruit to assure adequate ventilation, which helped to retard the banana's maturation process by lowering air temperatures. With Dow's blessings, vessels set sail for the United States as soon as the cargoes were properly stowed.

As an employer, Baker placed great emphasis on loyalty, honesty, and promptness. He sought to hire those who would carry out orders and, since he personally eschewed alcohol, he preferred employees who were conservative and did not drink. Accordingly, his inner circle of supervisors and bookkeepers were, with certain exceptions, trusted Cape Codders who were close to him. Baker treated his Jamaican employees with kindness, although he did not hesitate to fire those who did not meet his standards.[12]

L. D. Baker and Company was not the only business involved in the export of bananas from Jamaica. In fact, there were numerous local merchants who competed with him in the embryonic fruit trade of that era. Interestingly, despite intense rivalry and a number of financial "close calls" resulting from intense competition, Dow accepted it all as an essential part of capitalism. Although he realized that only the strongest organizations would survive, he was convinced that his company's ultimate fate was in the hands of God. In this respect, Baker attached messianic overtones to his work in Jamaica: God had given him a mandate to succeed through hard work and guidance from the Good Book. Company growth and prosperity were simply indicators demonstrating the degree to which he was accomplishing his new mission in life.

Alert for ways to enhance the economic fortunes of his shoestring enterprise over the competition, Dow Baker soon realized early the important role played by reliable marine transportation. Although wind-driven vessels, par-



A procession of banana stems is delivered to the 1,578-ton, 295-foot Atlas steamer *Alps* (built Glasgow, Scotland, 1865) at Baker's wharf in Port Antonio, ca. 1883. On the bridge of the *Alps*, Baker stands outboard of the starboard life ring, with the vessel's commander, Captain Seiders, at his left. The banana boats in the foreground are mackerel seine boats, built by Higgins and Gifford of Gloucester, possibly with modifications for use in the fruit trade. Baker, formerly a mackerel fisherman, introduced these light, durable boats to the Jamaica fruit business, where they proved to be ideal for delivering fruit from remote beaches to the fruit steamers. (Courtesy Captain Reuben Rich Baker)

ticularly schooners, were his heart and soul, he realized early that they were not as efficient as steamers when it came to shipping fruit on tight schedules. In the early 1880s, however, leasing or purchasing these faster vessels was economically out of the question. As an interim measure, therefore, Baker made a business arrangement with the British-owned and operated Atlas Steamship Company, which served ports throughout the Caribbean and (most importantly to the shrewd Yankee banana man) New York City. In return for becoming Atlas's authorized agent in Ports Antonio and Morant, he could commandeer unused space below decks for his fruit. Thus he gained direct steamer access to the New York banana market.

The arrangement with Atlas was the first of two important business alignments Baker made to circumvent his short supply of capital during those initial years. The second was his decision to join forces with an associate from his fishing days, Jesse H. Freeman, who had been a successful Wellfleet merchant and owner of the Mercantile Wharf Company, one of several that catered to the needs of the town's fishermen. The two men respected and trusted each other, and Freeman, who was well established in southeastern Massachusetts business circles, soon became an invaluable source of advice and financial assistance. Until his death in 1890, the old gentleman was a key figure behind Baker's successful tropical career.

Drawing on Freeman's financial connections, Baker engineered the creation of the Standard Steam Navigation Company in 1883. Composed of Massachusetts businessmen from Fall River, New Bedford, and Boston, it provided capital for the construction of two unique vessels to supplement Baker's steamship needs. Designed by Baker himself and completed in 1883 and 1884, they were christened the *Jesse H. Freeman* and *Lorenzo Dow Baker*, after the two men most responsible for their inception. Perhaps the first true "banana boats" built, they were transi-



Jesse H. Freeman (1826–1890) was a Wellfleet merchant, friend, and business associate of L. D. Baker. Freeman provided crucial financial backing and became Baker's partner in the Boston Fruit Company during the latter 1880s. Photo ca. 1885. (Courtesy Captain Reuben Rich Baker)

tional vessels powered by sail and steam. The former was a three-masted schooner with a small auxiliary engine, while the latter was a steamer with auxiliary sails. Each held twelve-thousand bunches of "green gold," stored in ventilated holds that conformed to Dow's design specifications. In addition to their crews, they also carried a small number of passengers. These two vessels, along with Baker's arrangement with Atlas Steamship Company, significantly enhanced Baker's ability to provide customers with reliable deliveries of fruit. With Jesse H. Freeman's help, L. D. Baker and Company was on its way to becoming, by the end of the 1880s, the most important banana exporter in Jamaica.

The Boston Fruit Company

Although Dow Baker began his Caribbean career in complete control of his company, circumstances during the second half of the 1880s made its independent survival impossible. In fact, had it not been for Freeman, L. D. Baker and Company would have folded in 1885, due to the economic difficulties of a recession in

The three-masted auxiliary schooner *Jesse H. Freeman* loads fruit at the L. D. Baker and Company Wharf, ca. 1886. This innovative 516-ton, 146-foot vessel had a 300-horsepower steam engine with the mizzen mast serving as the funnel. Goss & Sawyer launched her at Bath, Maine, for the Standard Steam Navigation Company in 1883. She was sold to become a Pacific whaler about 1888. (Courtesy Captain Reuben Rich Baker)





The 967-ton, 190-foot wooden steamship *Lorenzo Dow Baker*, shown here at Boston, ca. 1886, was launched by Goss & Sawyer for Standard Steam Navigation exactly a year after the *Jesse H. Freeman*. She represented the step from auxiliary steam to auxiliary sail. Baker helped design both the *Freeman* and the *Baker* as two of the earliest vessels built specifically for the banana trade. On 15 July 1889 the *Lorenzo Dow Baker* burned near Nantucket Shoals, on a passage from Port Antonio to Boston. (Courtesy Captain Reuben Rich Baker)

the United States. Only by entering into a business partnership with his longtime associate, however, did Baker manage to survive these hard times. This arrangement was called the Boston Fruit Company, and it eventually made the Cape Codder immensely successful. But there was a price to pay: his entrepreneurial autonomy.

In the fall of 1884, just as Baker's painstaking efforts to anchor his company firmly in the ever-shifting banana trade were beginning to achieve tangible results, the American produce market was shaken by a sharp recession. In September, wholesale banana prices dropped from $1.50 to $.35 per bunch.[13] Cash quickly became scarce and credit very difficult to obtain. Hard pressed, Baker traveled to New England to assess personally the condition of the fruit trade. Relying on his experience and facile ability to persuade others, Dow tried to convince his distributors to continue purchasing his fruit and to pay L. D. Baker and Company for deliveries already made. Meanwhile, fruit continued to innundate the markets of large eastern seaports, driving prices down. After observing five steamers simultaneously unloading bananas in New York, Baker glumly wrote his son, Loren, in Port Antonio that "The banana business is flat here. The whole country is full of fruit . . . there is [*sic*] bananas, bananas, bananas. Today bananas is the cheapest thing in the market."[14] His own difficulties were compounded by the subsequent bankruptcy of Warner and Merritt, a large Philadelphia produce firm that owed L. D. Baker and Company nearly $9,000.00.[15]

Dow stayed in the United States much longer than he had anticipated. It was during the cold, snowy winter months of January and February 1885 that he entered into a new business partnership with his old friend Jesse H. Freeman.

Subsequently known as the Boston Fruit Company, it was destined, within a few short years, to become the dominant banana trading organization in Jamaica.

The Boston Fruit Company was based upon Baker's experience in fruit production. He was then in the forefront of procuring and transporting bananas, coconuts, and other perishable fruit with a demonstrated popularity in the American marketplace. Realizing the importance of expanding and judiciously managing reliable sources of supply for the years ahead, Freeman proposed that the two men divide the workload. Freeman would take over transportation and marketing responsibilities, leaving Dow to concentrate his energies on fruit production in Jamaica. To Baker, this was attractive indeed. Transportation and marketing occupied much of his time and caused him considerable anguish. He disliked long trips that necessitated being away from his family, and much preferred staying in Jamaica. Freeman's Boston Fruit Company proposal promised to relieve him of many burdensome details while allowing him to concentrate on his specialty, fruit production.[16]

Baker's thirty-foot cutter *Bostonia* under sail in Port Antonio harbor, ca. 1893. She was probably built for him by Higgins and Gifford of Gloucester about 1884. In form she was similar to the sailing Jamaica Fruit Boats that Higgins and Gifford built for Baker's fruit business. Baker's favorite pastime was yacht racing and taking his friends sailing. During his lifetime he owned a number of yachts, all custom built in Massachusetts, for summer use in Wellfleet and winter use in Jamaica. (Courtesy Captain Reuben Rich Baker)



The next five years were extemely busy ones for L. D. Baker and Company, which moved steadily closer to becoming the most prominent fruit producer in Jamaica. In the fall of 1886, it survived a hurricane that caused considerable damage and crippled some competitors.[17] With Freeman's financial support, a number of delapidated sugar estates were acquired and converted into banana plantations.[18] By 1888, through its beneficial symbiotic relationship with Boston Fruit, Baker's organization was the dominant banana exporter on the island.[19]

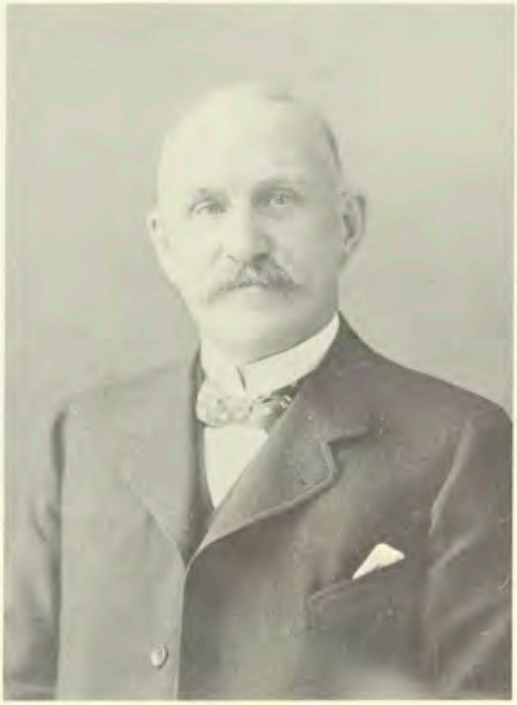
In February 1888, the Boston Fruit Company's two-way partnership between Baker and Freeman expanded when Andrew W. Preston was formally added as a general partner in charge of marketing. In fact, a major reorganization took place. Freeman, who invested $14,000.00 in the new Boston Fruit Company, became its "General Manager." Preston, who contributed $10,000.00 cash, received the title of "Assistant General Manager for Sales." Baker, lacking cash, chipped in "the entire present property or assets of L. D. Baker and Company" and was designated "Tropical Manager," in charge of production.[20] Each partner was to share in the profits (or losses) and could not withdraw capital stock for five years. In addition, the partners could not unilaterally commit Boston Fruit to any business transaction without first consulting each other. Thus the flexible, free-wheeling Baker sacrificed his autonomy for the security of an organization that recognized his skill as a specialist in banana procurement.

The new Boston Fruit Company arrangement was immensely successful. By 1889 it was the largest and most dynamic banana exporting enterprise then operating in Jamaica and Dow Baker was largely responsible. The carefully selected sugar estates that he had nurtured into productive fruit plantations began to yield impressive quantities of superior quality

bananas. In Dow's opinion, this new system of production meant self-sufficiency and would put Boston Fruit far ahead of its competition in the years ahead. It would also, he believed, be the best way to guarantee that the Company's expanding marketing commitments could be met. However, as events were to demonstrate, Baker's views were not shared by Andrew W. Preston and would subsequently bring the Cape Codder into direct conflict with his Boston-based partner.

In 1890 tragedy struck. In January, Jesse Freeman died suddenly after a brief illness, leaving a leadership vacuum that immediately sparked a scramble for power among those in the Boston Division. The resulting intrigues inevitably ensnared Baker, who was reluctant to become involved.[21] Briefly, Preston and one of the Company's financial backers named J. F. Crocker became bitterly embroiled in a dispute over reorganization and leadership. While both agreed that the three-way partnership should be replaced with formal incorporation, Crocker saw himself as the future president. Preston was vigorously opposed. In the free-for-all that ensued, both sought Dow's endorsement. The Cape Codder, however, tried to keep a low profile.[22] In July, on the eve of the annual meeting at which these issues were to be decided, Baker still had not chosen sides. Although he did agree to incorporation of the Company, he had his own ideas about whom he wanted to lead it. His choice was Isaiah Young, who, like Baker, hailed from Wellfleet. With another hometown boy at the helm and additional Cape Codders (including his son L.D. Jr. and his brother-in-law Elisha Hopkins) on the new Board of Directors, Dow reasoned, he would be fairly secure in a corporation that was sure to be heavily influenced by off-Cape "foreigners."

The results of the reorganization meeting turned out to be a severe wrenching of conflicting desires, emotions, and headstrong personalities. Incorporation was approved, and the Company was reorganized into two branches, the Boston and the Tropical Divisions. Choosing a president proved to be, as Baker had anticipated, a difficult matter. Isaiah Young was eliminated early in the discussions. After two weeks of acrid debate over who should lead the new corporation, Crocker and Preston remained hopelessly deadlocked. As a compromise, they finally settled on Baker, who reluctantly agreed to fill the post, but he did so, however, only on the condition that he also remain in Jamaica as Manager of the Tropical Division. To no one's surprise, Preston was made the Managing Director of the Boston Division.[23]



Andrew Woodbury Preston (1846–1924) began as a junior partner in the Boston Fruit Company and later became manager of its Boston Division. In the late 1890s Preston was the architect behind the creation of Boston Fruit's successor, the United Fruit Company. Photo ca. 1905. (Courtesy Captain Reuben Rich Baker)

Thus, in 1890 Lorenzo Dow Baker, the Cape Cod fisherman turned banana businessman, became president of what was now a large corporate entity known as the Boston Fruit Company. Its phenomenal success in the years ahead would bring joy to stockholders but agony to the man who had done so much to make its existence a reality.



L. D. Baker, president of the Boston Fruit Company, 1890–99, sitting in his office at company headquarters, 33 Broad Street, Boston, ca. 1895. (Courtesy Captain Reuben Rich Baker)

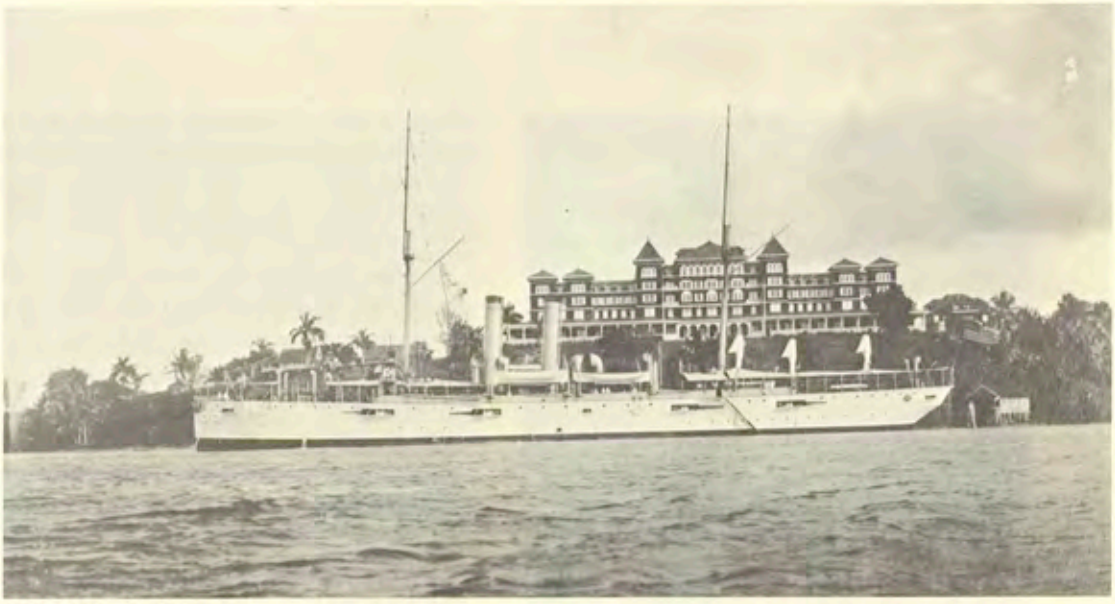
Fish Out of Water

Lorenzo Dow Baker served as President of Boston Fruit Company and Manager of its Tropical Division in Jamaica until his retirement in 1899. These years constitute the historical decline of his long career in the Caribbean banana trade. Although during this period his company came to dominate the banana trade, the mastermind behind it was not the former fisherman from Wellfleet: it was Andrew Woodbury Preston.

Ironically, Baker greatly contributed to Preston's rise to power within Boston Fruit. Whether through innocence or naiveté, the Cape Codder insisted on continuing to reside in Jamaica at a time when, as the Company's chief executive, he should have been closer to headquarters in Boston. Also, Baker's lack of marketing expertise, his distaste for corporate politics, and his conservative view of Boston Fruit's future growth and expansion all helped Preston ascend while his own influence ebbed. As the years slipped by, therefore, his presidency became characterized by isolation and personal frustration.

Dow's determination to remain in Jamaica, while serving as president of what was becoming, in the early 1890s, a Boston-based marketing operation, was unfortunate. However, the lovely island was home to him and he loathed the idea of relocating in that large New England city. Since he still believed that production was the cornerstone of success in the trade, it made perfect sense to stay in the tropics. He seems not to have realized (as Preston did) that marketing—not production—was the new key to prosperity. Corporate survival increasingly depended upon sales, expansion, and squelching competition. Given these factors, Dow had no choice but to rely on Preston's Boston Division to make daily operational decisions. These conditions gave Preston an extraordinarily free hand in molding Boston Fruit into an organization capable of meeting the challenges of that eventful decade.

Under such circumstances, it was not long before serious differences surfaced between Baker and Preston. Perhaps the most fundamental of these concerned their conflicting expectations of the Company's future growth. The former thought of Boston Fruit as a small production-centered enterprise, while the latter viewed it as a large corporation dominating the marketplace. Whereas Baker thought in terms of selling thousands of stems of bananas (supplied from his plantations in Jamaica, naturally), Preston thought in terms of millions. He was a monopolist. His agile mind envisioned controlling a huge tropical fruit empire, which meant continuously expanding sales in America. To provide the volume he anticipated, new sources of production would be needed. To Pres-



The cruiser U.S.S. *Montgomery* at anchor in Port Antonio harbor during the Spanish-American War. As a British colony Jamaica was officially neutral during the war, but local authorities ignored Baker's open assistance to a number of American warships. He allowed them to refuel and resupply from company stores and use company medical facilities. On one occasion, Baker even carried a cargo of bananas to the fleet blockading Santiago, Cuba, and distributed the fruit among the ships. In the background is the Titchfield Hotel, which was built by Baker. (Courtesy Captain Reuben Rich Baker)

ton, Jamaica was not the hub of Boston Fruit's banana-oriented universe; unlike Dow, he believed that diverse holdings, scattered throughout the Caribbean to protect against the ever present possibility of hurricane losses, were indispensable.[24]

The rift between Boston Fruit's conservative chief executive in Jamaica and the Preston faction in Boston intensified through the decade. More than once Dow experienced anxiety over actions taken by the Manager of the Boston Division. Frequently, he was informed of decisions after they had been implemented. Apparently, however, he could do little about it.[25] By the outbreak of war with Spain in 1898, the Boston Fruit Company had embarked on a land acquisition program that included large properties in the Dominican Republic and Cuba. To his cautious mind, the violence then occuring in Cuba, associated with agitation for independence from Spain, made that island particularly unattractive. But his arguments, pointing out the risks of doing business in these politically unstable islands, fell on deaf ears. Baker had become a figurehead president.

Fortunately, the brief conflict between the United States and Spain (which Baker had dreaded but patriotically supported once it began) proved advantageous for Boston Fruit. The American occupation that followed restored order, business soon returned to normal, and the Company subsequently purchased four surplus government vessels not completed in time for war service.[26]

Within a year, however, Lorenzo Dow Baker received the shock of his career. In the spring of 1899 Preston, supported by his followers in Boston, proposed a merger between the Boston Fruit Company and the interests of a rival American banana producer named Minor Cooper Keith. A railroad builder in Central America for nearly three decades, Keith had accumulated huge banana holdings in several countries of that troubled region. Based in New Orleans, he was a dominant force in the fruit trade of the Gulf Coast—an area long coveted by Preston. To Preston's way of thinking, Boston Fruit's future depended upon taking advantage of an opportunity to join forces with Keith. In April, without discussing it in advance with Baker, he sched-

uled a special meeting of the board of directors to approve such a merger and reorganize the company accordingly.

Shaken to the core, Dow realized that there was little he could do. Confessing his "near bewilderment" and "great anxiety" over the proposed merger to his Cape Cod friend Isaac Newton Keith (no relation) of Sagamore, Baker expressed his bitter disapproval. "I can hardly understand what benefit we are to derive," he blustered, "from entering into a combination with parties in . . . Central America, Honduras and the Gulf of Mexico. The people that do that business on those coasts and in those southern markets are altogether a different people from ourselves."[27]

Clearly, Dow was convinced that in the long run the proposed expansion would prove more detrimental than beneficial. "There seems to be two ways open to us," he wrote,

> the one that we are now following, steadily plodding and safe, or the formation of a mighty trust combination which may or may not lead us into great prosperity. On the one hand, we have few allurements or temptations, and plenty of hard work; on the other hand, the temptations are great . . . With a business like ours, dealing in a commodity that is produced in localities far from each other and so subject to climatic influences and to destruction by delays in transit, improper handling and other influences, there can be no system whereby a business of that kind can be properly checked up or accounted for, or put on a basis of anything like sound business.[28]

Despite the straightforward Cape Codder's opposition, the Boston Fruit Company was subsequently reorganized into what soon became the dominant corporation in the banana trade for the next half century: the United Fruit Company. Its headquarters continued to be in Boston; its president, destined to guide this giant monopoly for the next twenty years, was Andrew Woodbury Preston.

The Twilight Years

The inception of United Fruit Company marked the termination of Lorenzo Dow Baker's thirty year career in the Caribbean fruit trade, and the commencement of his retirement years. Although he remained on the board of directors until his death in 1908, Dow Baker no longer possessed influence in Company affairs.

Times had changed since that day long ago when he had coaxed the leaky *Telegraph* alongside Long Wharf with the first cargo of bananas brought to Boston. Gone were the days when

Belvernon was the Baker family's summer home in Wellfleet. During the 1890s it served as a rendezvous for friends and relatives and boasted a bowling alley, gazebo, and numerous servants. When the Bakers were in residence, a stem of ripening bananas always hung on the porch for neighbors and passersby to help themselves. Photo ca. 1895. (Courtesy Captain Reuben Rich Baker)



the adventuresome pioneer, with courage and initiative, could survive economically through honesty, hard work, and timely prayers. The small enterprise he had founded and nurtured through the infancy of the tropical fruit trade had matured into a huge, aggressive corporation. Baker had not planned it that way. Rather, it was the inevitable, evolutionary fate of a profitable business in a time of dog-eat-dog capitalism. Lost in an industry focused on marketing, Dow had neither the ability nor the desire to adapt. He was a free-spirited decisionmaker of times gone by, a "captain of business"—not of industry.[29]

During his remaining years, Baker settled into an active retired life. Most of his time was spent in Jamaica where, in 1905, the business community honored him for his pioneering role in the island's fruit trade at a testimonial banquet in Kingston. He traveled frequently, often accompanied by his daughter Mattie (his wife Martha had died in 1903). But the physical effects of the arduous years in the tropics took their toll on his once robust constitution. When he was sixty-eight, he contracted a severe respiratory infection, while in Port Antonio. After several weeks without improvement, his doctors advised him to seek more specialized treatment, so he boarded a company steamer bound for Massachusetts. It proved to be Dow Baker's final voyage. Shortly after arriving in Boston, he died on 21 June 1908 at the Parker House.

Lorenzo Dow Baker's accomplishments in the early Caribbean fruit trade were due to many factors. Personally, he possessed qualities that augered well for success. He was a born leader and an ambitious, hardworking, tough competitor with an "eye for the dollar." In the area of fruit production, he was a tenacious innovater and experimenter, never satisfied until solving the hindering technical problems related to perishability, handling, and storage. During his long career he skillfully integrated the latest technological developments in communications and steamship design into his company's operating procedures. In marketing, his quiet, personable manner made him an unusually effective communicator in his business dealings, able to convince strangers of his honesty or sway them to his point of view. Finally, Dow Baker's success was due to his family and relatives. The members of his immediate family were especially important. The willingness of his frail wife Martha and sons Loren and Joshua to adjust their lives to the needs of his business priorities constituted a nucleus of loving supporters to whom he could always turn in times of difficulty.[30]



Lorenzo Dow Baker (1840–1908), Cape Cod pioneer in the development of the Caribbean fruit trade. Photo ca. 1905. (Courtesy Captain Reuben Rich Baker)

These, then, are the historical threads of Lorenzo Dow Baker's life as an early pioneer in the United States–Caribbean fruit trade. He was a fortunate man, one who got more out of life than just extracting every penny possible from his business career. Dow Baker enjoyed his work and achieved happiness. He was the right person at the right time and he made the most of it.

NOTES

[1] Baker's exact profits from this voyage are not documented. However, it is estimated that he realized between $2.50 and $3.00 per bunch, against an approximate cost of one shilling (roughly $.25 U.S. in 1871) each. Julia Rich Hogan, "A Rich to Remember: Lorenzo Dow Baker," *Kinfolk* (1973), 3:10.

[2] Much of this primary source material, here collectively referred to as "the Baker Papers," is generously on loan to this author through the courtesy of Captain Reuben Rich Baker of Wellfleet, Massachusetts. Captain Baker, who like his grandfather Lorenzo Dow Baker has followed the sea for his livelihood, is the skipper of the Woods Hole Oceanographic Institution's research vessel *Atlantis II*. The bulk of this revealing material, consisting of hundreds of personal letters, business correspondence, ledger books, and photographs dating back to 1859, was discovered in an old sea chest in the basement of "Belvernon," Captain Baker's residence in Wellfleet. In addition, over the years this author has acquired supplementary data from a variety of sources.

[3] When he was nineteen Baker briefly attended Wilbraham Academy in central Massachusetts. However, he was there only one year and left before the end of the second semester. Although his reasons for going there are unclear, the Baker Papers suggest that his Aunt Hattie talked him into it. He left in the spring when the school was closed due to an epidemic of scarlet fever and never returned.

[4] He was named after a popular Methodist evangelist of the early nineteenth century named Lorenzo Dow. This individual, who often wore sandals and a toga, traveled widely in New England, where he visited local communities converting lost souls to Methodism. Apparently, he met with some success on Cape Cod because Methodist retreats (known as "campgrounds") were subsequently established in the towns of Eastham and Yarmouth. In later life Baker attended campground summer programs with his family and contributed financial support.

[5] Interview with Oscar C. Nickerson by William Bradstreet, 13 September 1949, Baker Papers. Known locally in those days as "Biblebacks," the Wellfleeters, according to the late Captain Oscar C. Nickerson of Chatham, refused to fish on Sunday no matter how well the fish were running. On Georges Bank the Wellfleet schooners would "lay off to windward praying and singing hymns" as they drifted through the rest of the fleet, snarling gear and (presumably) tempers.

[6] Baker's livelihood, like that of others of his era, depended on several sources. During the summer and fall months it centered around the pursuit of mackerel (a popular food fish that schooled in great abundance in Cape Cod waters) and cod, found offshore on Georges Bank. The rest of the year, weather permitting, "coasting" was common among schoonermen. Providing the price was right, they sailed along the eastern seaboard, transporting anything that suited their vessel and the captain's mood. The adventuresome Baker was always willing to travel an extra nautical mile if it meant additional profit: he once earned $1000.00 by taking a pair of thoroughbred pigs to the Bahamas for a wealthy client.

[7] Letter and bill submitted "Care of the *Telegraph*" to L. D. Baker for payment, Baker Papers.

[8] Log of the schooner *Telegraph*, 23 March 1871. The crew became so exhausted at the pumps that even the captain "was obliged" to take his turn! Nor did things improve: subsequently the main boom broke, the foremast "sprung" below deck, and the mainsail split in the howling winds and crashing seas.

[9] *Ibid.*, 25 May 1871. With practice, however, he learned to judge exactly just how much time remained before those green, immature stems of fruit would turn into "soup." He also discovered that rough handling of the green, or "thin," bunches caused bruising, and that measures to increase ventilation around the ripening fruit in his vessel's hold helped to retard the maturation process.

[10] This situation resulted from the abolition of slavery in the 1840s and subsequent decline of Jamaica's traditional sugar economy. Ex-slaves who refused to harvest sugar cane were quite willing to cut and sell bananas to L. D. Baker and Company. Unlike sugar, bananas had no negative social stigma attached to them as an economic activity.

[11] Local lore has it that Baker originally accomplished this by blowing through a large conch shell. The resulting blasts, echoing through the surrounding hills, alerted the Jamaican people to harvest bananas and bring them to his wharf. However, the Baker Papers make no mention of this.

[12] Charles Cotter, Lime Hall, Jamaica, interview with the author, 18 July 1976. At a time when the daily salary of a Jamaican stevedore was approximately one shilling, his practice of rewarding good work by handing out a shilling or two on the spot greatly improved morale and made him a popular boss.

[13] Correspondence of Lorenzo Dow Baker, 28 August–17 September 1884, Baker Papers.

[14] Lorenzo Dow Baker to L. D. Baker, Jr., 20 November 1884, Baker Papers.

[15] It was, in the discouraged Baker's words, "a most miserable failure . . . not enough left to pay five cents on the dollar." Lorenzo Dow Baker to J. Harrison, 2 October 1884, Baker Papers.

[16] The arrangement worked well. Baker handled production, which both partners felt was the most important phase of the business. Freeman handled shipping and marketing. To assist with sales, he hired an ambitious young man from Beverly, Massachusetts, named Andrew Woodbury Preston. In the decade of the '90s, when marketing became the focus of success in the fruit trade, Preston would eventually supplant Baker as the most significant figure in the Boston Fruit Company.

[17] The big storm of 1886 did extensive damage to crops and property on Jamaica, where its heavy winds and fourteen inches of rain left a lasting impression on the Bakers. "Oh, I hope we won't have another hurricane for years," wrote Joshua Baker to his older brother Loren. "Didn't it howl that night? That was quite an experience, wasn't it? Something a fellow don't get every day." Joshua Baker to L. D. Baker, Jr., 26 September 1886, Baker Papers.

[18] The storm convinced Baker of the wisdom of disbursing company holdings throughout Jamaica. However, when Preston later used similar logic to justify the acquisition of company lands in other Caribbean countries, Dow was bitterly opposed.

[19] In that year Baker's bananas constituted 42 percent of Jamaica's total fruit exports, Lorenzo Dow Baker, "Report on the Boston Fruit Company" (Kingston, 1894), p. 3, Baker Papers.

[20] Boston Fruit Company Copartnership Agreement, 23 February 1888, Baker Papers.

[21] Dow Baker experienced deep personal grief over the death of his longtime associate. "I had so long had Capt. Freeman for an advisor & his council [*sic*] had been of such strength to me," he wrote, "that I hardly know how now to go without it." Lorenzo Dow Baker to L. D. Baker, Jr., 5 February 1890, Baker Papers.

[22] Surprisingly, Baker knew almost nothing about the process of incorporation. At the suggestion of Isaac Newton Keith, a Cape Cod friend of his and owner of the sprawling Keith Car Manufacturing Company in Sagamore, Dow borrowed a book on the subject, which he subsequently studied with great care.

[23] Baker seems to have felt that, despite his absence from the central office in Boston, he could still keep on top of Company affairs by relying on Preston to handle day-to-day operations.

[24] In 1893 Baker seriously tarnished his standing within the Company by encumbering, without the consent of his Board of Directors, Boston Fruit with a $300,000 debt resulting from his purchase of a large sugar estate near Port Antonio. Called "Golden Grove," it had a prime location and offered great potential for conversion to a banana property. Dow had coveted it for many years and when it finally came on the market, he bought it on the spot. Although furious that his president had tied up so much company money for another investment in Jamaica, Preston was forced to support Baker's fait-accompli. Boston Fruit Company eventually retired the debt. Thereafter, however, Preston was permanently disgusted with the Cape Codder. Lorenzo Dow Baker, "Report," p. 7, Baker Papers.

[25] The situation caused him much anguish. "I have had some terrible anxious times this past winter," he wrote to his friend Isaac Newton Keith in 1892, "such that I hope I may never be called upon again to pass through." Lorenzo Dow Baker to I. N. Keith, 4 July 1892, Baker Papers.

[26] Known collectively as "the Four Admirals," these ships became the core of United Fruit's fleet in the early twentieth century.

[27] Baker left no doubt that his concerns were ethical. "They have no part nor lot with us in honest, straightforward business," he fumed. "A large portion of the class of men which do the Southern business have never known what square, honest dealing is. Therefore they must be a menace to any correct, honest dealing body and would likely lead to endless perplexity." Lorenzo Dow Baker to I. N. Keith, 6 April 1899, Baker Papers.

[28] *Ibid.* In this connection Baker's granddaughter, Martha Baker McKeen, asserts that her grandfather was forewarned of Preston's intentions by her father, L.D., Jr. In a letter to this author written by her son, Mrs. McKeen maintains that her father told Dow "that Preston was gaining control of the company and that all they needed to do to prevent this was to take some money out of the bank and buy up more stock. However," she concludes, "the Captain would not act on this advice." Reginald McKeen to Randolph Bartlett, 7 September 1984.

[29] Herman E. Krooss and Charles Gilbert, *American Business History* (Englewood Cliffs, New Jersey: Prentice Hall, 1972), p. 146.

[30] It had not been easy for Baker's family. Loren, in particular, sacrificed the prime of his youth on the altar of his father's business career.

BIBLIOGRAPHICAL NOTES

The Baker Papers represent the largest organized collection of primary source materials dealing with the life and career of Lorenzo Dow Baker, Cape Cod banana entrepreneur in the Caribbean during the latter nineteenth century. They have become available only recently, which explains why Baker's pioneering activities in the early days of the fruit trade have not been well known or understood by historians. While various authors who have written about the fruit trade usually mention him, they have done so only briefly and very superficially.

Since 1973, this writer has followed many leads in an effort to pull together whatever documentation still exists regarding this interesting seaman. Over the years, information has come from such varied sources as stamp dealers selling Baker letters and private citizens who heard about the research and volunteered data. By far the largest amount of material, however, has been provided by L. D. Baker's grandson, Captain Reuben Rich Baker of Wellfleet, Massachusetts. Consisting of copybooks, file boxes, newspaper clippings of the period, photographs, and hundreds of personal letters, his collection is on indefinite loan to the author. Beginning with ships' expense sheets, invoices, bills of lading, and other miscellaneous financial records dating back to the 1860s, the Baker Papers provide tremendous insight into the man's life from his earliest days at sea. As one might expect, they particularly focus on his business activities regarding the production, shipping, and marketing of Jamaican bananas and coconuts in the years 1881–99.

Finally, it should be noted that there are gaps of information in the Baker Papers. In particular, the research has been limited by the lack of complete records of Baker's dealings with certain important associates. These include Andrew W. Preston, Jesse H. Freeman, and Isaac N. Keith, to mention just a few. Nor has the author been able to obtain any primary documentation or meaningful assistance from United Brands, Inc., parent company of United Fruit. According to them, everything that once existed concerning the Baker era has been thrown out or destroyed by fire. The writer has been unable to verify this.

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Taking a Departure

The Navigational Instruments and Artistry of Captain Charles Hervey Townshend

ANNE M. PREUSS and DONALD L. TREWORGY

"This going to sea suits me like a book."[1]
"I am sick of a sailors life would rather dig clams for a living in New Haven Harbor than lead a life like this."[2]

Charles Hervey Townshend (1833–1904) wrote both of these: the first near the beginning of his seagoing career (1848–1871) and the second toward the end. Clearly he was a strong personality, impetuous, but demanding of himself and others. Charles was the sixth of nine children of William Kneeland Townsend and Eliza Mulford Townsend (Charles later changed the spelling to reflect the original English name).[3] Devoted to the family, and strongly influenced by his mother after the death of his father in 1849, he was ever conscious of the need to uphold the family name. Born into a prosperous family and educated with the prospect of attending Yale, Charles nevertheless determined to go to sea, and also resolved to "be somebody or nobody."[4]

Townshend's first short voyages in the *Bride* and the *Sarah & Elizabeth*, in 1848, were followed by voyages in the *Hyperion* to the West Indies and Mediterranean. Voyages in the *Margaret Evans* and the *Southampton* of the Griswold line of New York-to-London packets followed; Charles became third mate of the latter vessel in 1851. He then spent six months in navigation school at New Haven in 1852.[5]

Returning to the sea, Townshend shipped out as third and then second mate in the *Helvetia*, owned by William Whitlock, Jr. In 1854 he became first mate of the *Germania*, a New York-to-Le Havre packet also owned by Whitlock. His first command came in 1857 at age twenty-three, as master of the *Bavaria*. From 1858 to 1866 he served as master of the *Germania*.

Captain Townshend assumed command of his first steam vessel, William H. Webb's transatlantic mail steamship *Fulton*, in 1867. Then, after three years ashore, he made his final voyage as master of the steamship *Ontario* in 1870–71, carrying ammunition for the French, then involved in the Franco-Prussian War and in desperate need of munitions.

At the age of thirty-eight, Townshend retired from the sea. He had made forty voyages and never lost a vessel. The remaining thirty-three years of his life were spent ashore, involved in civic and scientific projects. He studied genealogy, Indians, and history, helped lay out the local oyster beds, and pushed for the commercial and maritime development of his native New Haven. Above all, he continued a lifelong interest in astronomy and navigation, "studying the obtuse sciences" long after his seagoing days were over.[6]

While Townshend's career as a mariner was notable, it was by no means unique. What set Townshend apart in his day, and makes him especially significant for us today, was his excep-

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Donald Lloyd Treworgy graduated in 1960 with a B.A. in Mathematics from the University of Maine, where he subsequently served as Instructor of Mathematics and Astronomy. For the past twenty-two years he has been employed by Mystic Seaport, presently as Instructor in Navigation, Planetarium Supervisor, and Associate Director of Education.

tional knowledge and facility in astronomy, mathematics, and navigation. Few nineteenth-century shipmasters have left us such a clear record of how they found their ways across the seas. Examination of Townshend's six journals and thirteen navigational instruments in the Seaport's collection offers even the novice a clearer understanding of the "obtuse sciences" of the master mariner.

Ocean navigation in the mid-nineteenth century required the acquisition of skill in using several instruments, a number of which are still in use today. In addition to the instruments, the navigator would have charts, Bowditch's *New American Practical Navigator,* books of mathematical tables, and the *Nautical Almanac.*

For piloting—coastwise navigation—the instruments required were a lead line for measuring the depth of the water (page 26); a telescope for sighting landmarks and aids to navigation; a compass and pelorus for determining direction (page 28); and dividers and parallel rulers for transferring course information to a chart.

Whether alongshore or offshore, the navigator made use of dead reckoning to plot his course. Starting with a known point of departure, he kept track of sailing direction with the compass and of speed with a log line trailed behind the vessel (page 27). Since dead reckoning does not take into account the errors caused by currents or leeway, the plot is updated every time a reliable land or celestial fix can be obtained.

Out of sight of land, the navigator proceeded by dead reckoning and, in clear weather, by celestial navigation, using the sun and other heavenly bodies to find position. The coordinate of latitude was obtained with a sextant or octant by taking a noon sight of the sun.

The successful solution of the very difficult problem of computing longitude at sea (page 28) required four components: first, accurate measurements of angles between the moon, sun, and stars, and between these bodies and the horizon, made possible by the invention of the octant in 1731 (page 29); second, a knowledge of the precise positions of the heavenly bodies, as published in the *Nautical Almanac* in 1766 (page 31); third, the development of an accurate timekeeper that would work on a rolling ship at sea—the precision timepiece invented by John Harrison in 1735 and vastly improved by him through 1759 (page 29); and four, mathematical tables for performing the computations.

By the time Townshend went to sea, the oceanic winds and currents were being analyzed to assist the mariner in choosing the course that best facilitated his passage. American naval officer Matthew Fontaine Maury compiled information on winds and currents from shipmasters' logbooks, and in 1834 published "On the Navigation of Cape Horn," advising of the best course around that treacherous gate to the Pacific. Between 1847 and 1860, as Superintendent of the Naval Depot of Charts and Instruments in Washington, D.C., Maury issued sixty wind, current, and sailing route track charts covering the earth's oceans.[7]

These, then, were the tools of Townshend's navigational trade. It is clear to the reader of his journals that navigation was a challenge, a subject that grasped his imagination far beyond the acquisition of the routine knowledge necessary to plot his position. He was not satisfied to solve a navigational problem in only one way: he checked and rechecked himself, particularly if he felt that one of his instruments or his chart might be in error.

Townshend's interest in navigation was sparked at an early age, and his artistry as a navigator continued to develop throughout his career.

On one of his earliest voyages he was already becoming proficient at the navigator's basic skill, dead reckoning. At fifteen, aboard the bark *Hyperion,* he wrote to his parents in September 1849 from the Mediterranean: "I have got to be quite a navigator. Mr. Whitney and I kept the log by dead reckoning and I did not vary more than five or six miles any time."[8] Position by dead reckoning was determined by keeping a record in the logbook of the direction the ship was sailing and the distance the ship had moved through the water since the last known position. The distance moved through the water was estimated by periodically casting the chip log or by

continuous measurement with a patent log (page 27).

Although position by dead reckoning gave a knowledge of the ship's position with relatively simple tools, even this form of navigation was subject to difficulties brought on by the elements of nature. Townshend wrote in his logbook for 3 December 1864, "Middle part strong gales . . . , the Germania was knocking the seas black and blue and the best helmsman aboard could not keep her within two points [22½ degrees] of her course."[9] Such an erratic course would make dead reckoning quite inaccurate.

Ocean currents could also affect dead reckoning, though less visibly. A regular element of the North Atlantic packet ship runs was the Gulf Stream, which flows northeast along the Atlantic coast from Florida to Cape Hatteras, then curves eastward and, after passing the Grand Banks, northeastward across the North Atlantic. Sailing westward to New York, the navigator would attempt to cross the Gulf Stream and then remain north of it, to avoid sailing against its flow. The Gulf Stream is distinguished by its blue color, which contrasts with the green of the surrounding water, the large quantities of gulf weed it carries, and also by its temperature, which is higher than that of the surrounding water. On an unusually stormy westward passage in the *Germania* from Havre to New York in 1862, Townshend recorded in his log on 12 March that the water was very much discolored and that the water temperature was 68 degrees, while the air temperature was 58 degrees. Keeping this record of air and water temperatures let him know when he had passed through the Gulf Stream into waters that would not adversely affect his westward progress. He recorded in his "smooth"—revised—log: "Have been trying for the last 25 days to get north of the Gulf Stream."[10] This westward passage took 58 days, the longest of his twenty-eight westward passages, for which the mean time required was 35.6 days.

Townshend seemed ever to question the possibility of errors in his navigational results or tools. On his final voyage in the steamer *Ontario*, Townshend was suspicious of the accuracy of his port compass. In mid-ocean he put the helm hard to port, letting the ship make a large circle so that he could watch the behavior of the compass card, and concluded that the compass was a little "dull."



Charles Hervey Townshend (1833–1904) while in command of the Havre Line steamship *Fulton*, 1867–68. Carte de visite photo by Bogardus, New York. Gift of Raynham Townshend and Mrs. H. Newton. (63.367.14F)

The first record of Townshend's practice of celestial navigation is in his fragmentary log from a voyage in the *Southampton* in October and November 1850. Though not yet an officer, he included a number of observations and practice latitude and longitude problems.[11]

By the time he was master of the *Germania* in 1858, he was adept at astronomy and the varieties of celestial navigation.

22 Dec 1858 Latt. by projection.

9 Jan 1859 Long. by eq. alt. [equal altitudes: determining the time when the sun is equally high in the sky before and after the noon meridian].

14 Jan 1859 Lat. by Polar Star. Lat. by Jupiter.

Long. by an Obs. of the Sun when setting Taken with Spy Glass.[12]

These observations in his "rough"—sea—log were not included in his smooth log, suggesting that they were probably extra sights, made out of sheer exuberance and not necessary for determining the ship's position.

Again, on 23 January 1864, en route to Cape Horn, he noted:

8 PM Sounded 63 fathoms. Kept ship S by E.

8 PM Starlight. Lat. by	Aldebaran	45°	34′S
" "	Rigel	45°	34′S
" "	Betelgeuse	45°	42′S
" "	Sirius	45°	49′S

Threatening weather.

M [Meridian] Sounded 62 fathoms. Wore ship to WSW

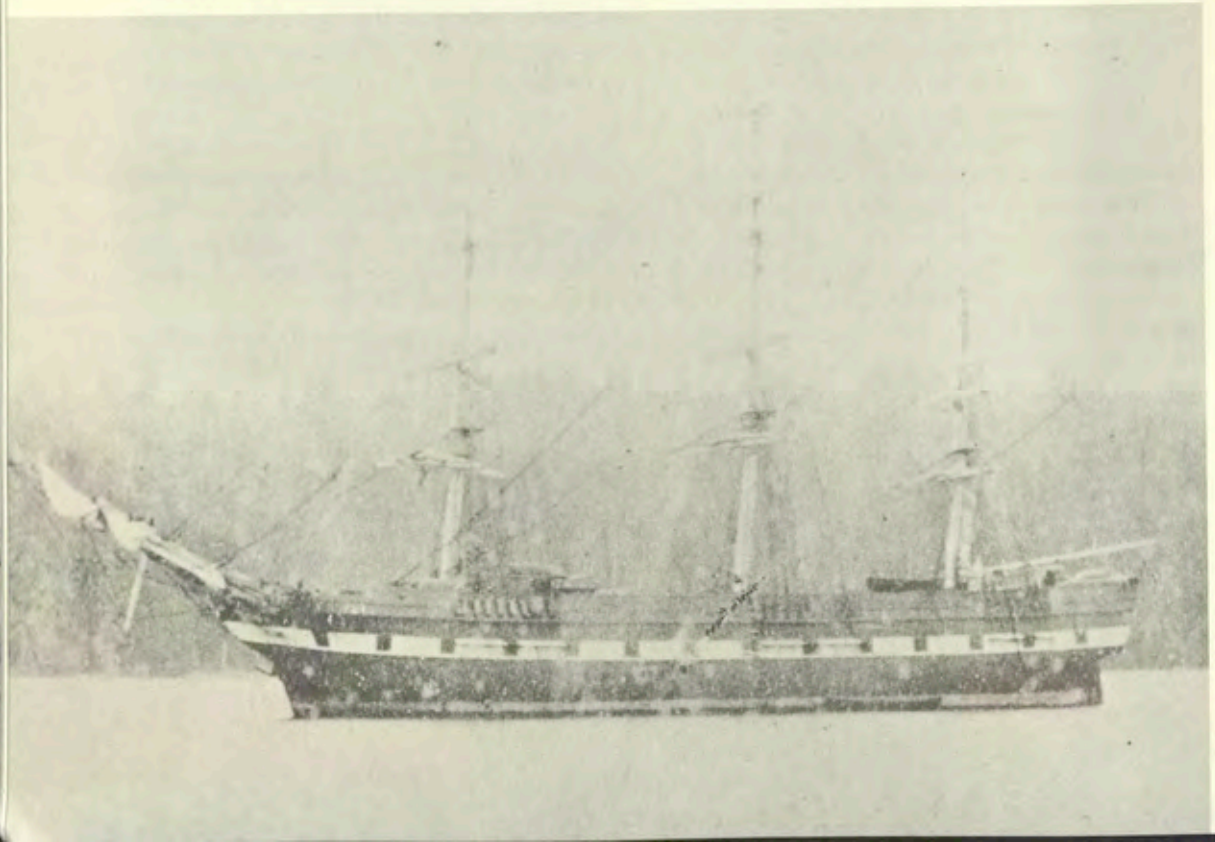
Lat. Obs.	47°	20′S
Long. Chron.	63°	30′W

Bar.[ometer] 29.7.[13]

In this case Townshend had some concern about his exact position, so the additional latitude sights were an attempt to check his regular noon sight of the sun. He included all of the sights in both his rough and smooth logs.

A new method of finding position using two sights (not restricted to the noon and morning or afternoon sun sights) had been published by Thomas Hubbard Sumner in 1843. This method permitted the navigator to make an observation of the sun at any time of day to establish a line of possible positions on which the ship was located. Additional observations of a different heavenly body (or the same body at intervals of several hours) gave another line, which, adjusted for the ship's course and speed between sights, intersected with the first, providing the most probable position of the ship. Townshend noted in his log aboard the *Germania* on 19 January 1865, "I have tryed Sumner Method this voyage several times and shall hereafter place great confidence in it."[14]

The ship *Germania*, commanded by Townshend from 1857 to 1866. Built at Portsmouth, New Hampshire, by Fernald & Pettigrew in 1850, the 1,215-ton, 180-foot ship was owned by William Whitlock, Jr., of New York. This photograph was taken at Port Ludlow, Washington, 1 July 1864, during Townshend's Pacific voyage. Gift of Raynham Townshend and Mrs. H. Newton. (63.367.14B)

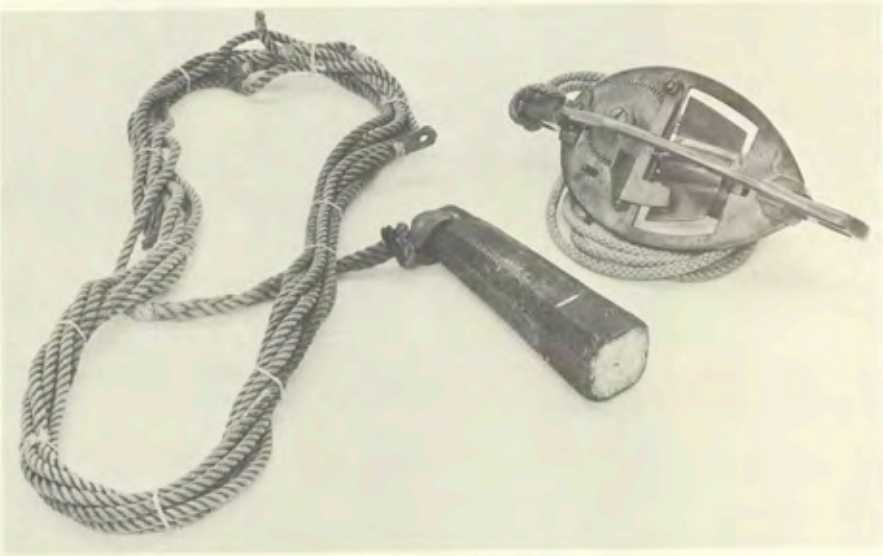




Townshend demonstrates his full circle in a vertical position, indicating that it could be used as a substitute for a sextant. (50.824)

After retiring from the sea in 1871, Townshend's interest in the instruments and procedures of navigation remained very much alive. Probably the most significant achievement of his retirement years, from the standpoint of navigation, was his invention and patent of a double reflecting circle, based upon a French circle of reflection by the instrument maker Gambey (page 32). Using a reflecting circle such as Townshend's, the surveyor or navigator can measure the angles between three objects simultaneously. This is particularly useful in survey work, in positioning buoys, in laying out oyster beds, or in determining a ship's position from three coastal landmarks. Transferring the measured angles to a chart is most rapidly and accurately done with the help of a station pointer (page 33). For the navigator, the capacity for measuring large angles made the reflecting circle useful as an alternative to the sextant for measuring lunar distances in celestial navigation (page 31).

Charles Townshend's continued love of the sea and navigation, as well as his independence of mind, is exemplified by an anecdote in a history of the Townshend family: "One Sunday, Charles was seated in his accustomed pew in Center Church listening to a lengthy sermon. When it got to be near noon, crusty old Charles jumped up and said aloud: 'By jolly, that sun isn't going to wait while the parson spins his yarn!' Without further ado, he departed to go home and check his precious sextant. . . ."[15]



Five-pound hand lead with line attached by leather loop. Length: 6⅞". (79.7)

This hand lead was used to measure the depth of the water up to ten fathoms (sixty feet). Spaced along the line at one-fathom intervals are markers indicating, by sight and by touch, the distance from the bottom of the lead to that mark. The bottom of the cylindrical mass of lead is hollowed out so the cavity can be filled with tallow, soap, or soft wax to bring up a sample of the sea bottom.

The use of the hand lead was particularly necessary when coming onto "soundings"—shallower waters of the continental shelves—from the ocean, especially in foggy weather. By comparing the depth of the water, the rate of change of the depth, and the nature of the bottom with the equivalent information on a chart, the navigator can refine his knowledge of the location of the land he is approaching.

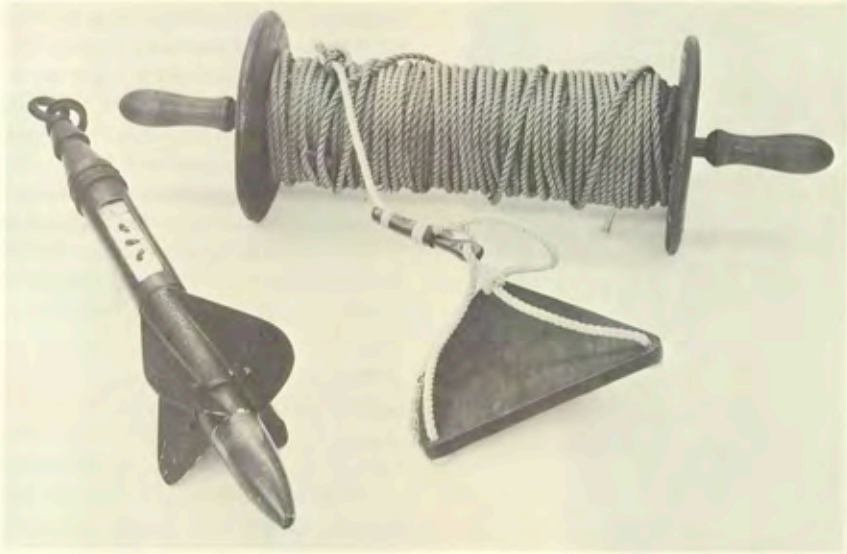
A seaman standing on deck, or in the chains of a larger vessel, would swing the lead in a vertical circle, casting it ahead of the vessel so that it would sink to the bottom by the time the vessel was above it. The line would be drawn tight and then rapidly pulled up. The markers indicated the depth, and the material embedded in the base showed the character of the bottom.

In navigation, information obtained by sounding the lead could be used to confirm or cast doubt on the accuracy of the position found by celestial navigation. Thus, off Brazil on 18 January 1864, Captain Townshend, knowing that he was close to the edge of the continental shelf, wrote in his log-book: "2 PM sounded no bottom at 150 [fathoms]. At 8 PM Long by * Sirius 56 20′ W. 8 PM Sounded 60 fath. Dark Sand, which proves my chron. by Hornby correct." (Log 122, G. W. Blunt White Library) Although this lead and the patent lead that follows did not belong to Captain Townshend, they are similar to the ones he would have used.

Patent lead. Bronze. Inscribed on frame: T. Walker's Patent 879; *on one blade:* T.W. 879. *English, mid-nineteenth century. Length: 9½". Gift of Francis E. Bowker. (82.127.AB)*

This patent lead, called Walker's Patent Harpoon Sounding Machine, consisted of an open metal frame fitted with a rotor that turned as the lead, attached by line to the base of the rotor, descended in the water. A flat, horizontal lever was lifted by the resistance of the water as the lead descended. When the device hit the bottom, the lever dropped and stopped the rotor from turning; this also occurred if the device was towed, preventing the device from reading too great a depth. There are two dials on Walker's Sounding Machine, one registering one to ten fathoms and the other ten to 150 fathoms.

Thomas Walker (1805–1873) manufactured logs and sounders under the Massey patents, beginning in 1850. He took out a further patent in his own name in 1866.



Log line, reel, triangular log chip, said to have come from a New London whaleship, first half of the nineteenth century. Oak, cotton line. Length of reel: 26"; radius of chip: 8". Gift of Dr. C. K. Stillman. (34.9)

The log line was used to measure the speed of the vessel during a specified amount of time, and from this the speed of the vessel and the distance traveled in twenty-four hours could be computed and entered in the ship's log. The chip was thrown from the stern of the vessel, taking with it a length of unmarked "stray" line. The remainder of the line was marked by knots at regular intervals. As the chip remained stationary in the water, it unrolled the knotted line from the reel for the length of time it took for a sand glass to empty completely. Speed in nautical miles per hour was measured by the number of knots passing over the vessel's stern during this time. Theoretically, the spacing between knots was the same proportion of a nautical mile (at that time 6,087 feet) as the number of seconds measured by the sand glass was of an hour, although in practice the spacing between knots could vary somewhat.

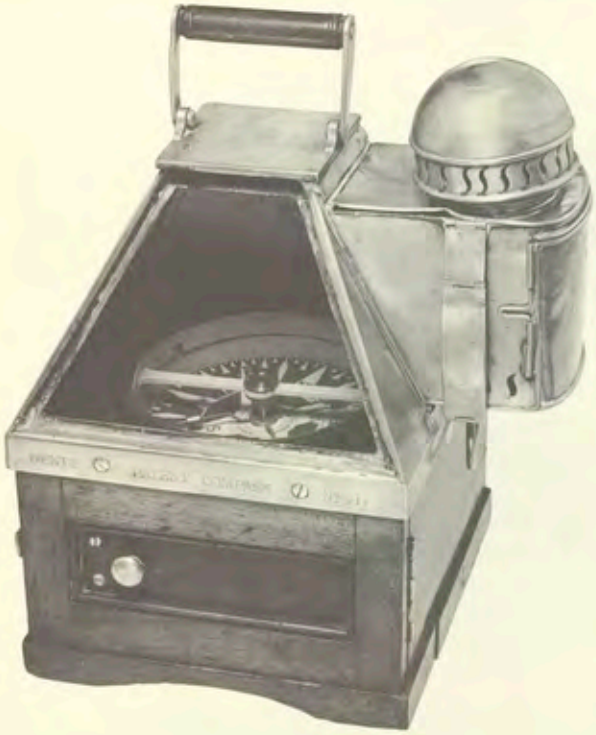
This chip log did not belong to Charles Townshend, but it is representative of the one he used. Aboard the *Fulton* in 1867 he used a log line of twenty-six feet per knot, a fourteen-second sand glass, and twenty-five fathoms of stray line. (Log 123, G. W. Blunt White Library)

Propeller log. Brass. Four black-painted vanes, engraved: EDWD MASSEY'S New LLL Patent Frictionless Log, 14, 617. *Register with three dials. English, mid-nineteenth century. Length: 20½". Gift of Mrs. Harriet G. Stillman. (36.150)*

This device, patented by Edward Massey, was intended to give a continuous reading of distance traveled. It was towed by the vessel on the end of a sixty-fathom line. The rotation of the vanes turned the three dials, which were graduated in miles, tens of miles, and hundreds of miles. It was necessary to haul the log aboard to read it, which was done whenever the course was changed and every twenty-four hours when the dials were reset.

Edward Massey (fl. 1800–1838) of Newcastle, Staffordshire, first patented a recording and sounding machine in 1802. Thomas Walker (1805–1873) began to make logs under the Massey patent in 1850.

Although this log did not belong to Captain Townshend, it is similar to the ones he used. Aboard the *Germania* one day in March 1859, Townshend noted that the patent log recorded 108 miles run. The speed indicated by the chip log was just over 4½ knots, indicating a run of 110 miles. The reading on the patent log could also be correlated with the revolutions of a steam vessel's screw propeller. Aboard the steamer *Ontario* on 1 January 1871, Townshend noted: "Mr. Winslow [chief engineer] reports screw making 45 revolutions per minute. Log shows 8¼ knots per hour." (Log 195, G. W. Blunt White Library)



Dent's Patent Compass No. 211, in binnacle. Dry card compass, adjustable weights above cardinal points. Height: 10½"; diameter of compass: 5½". Compass bowl painted black. (New Haven Colony Historical Society, 1976.318)

The compass needle, of magnetized iron or steel, will point to magnetic north. The difference in degrees (like most nineteenth-century compasses, Townshend's shows points rather than degrees) between magnetic north and celestial or "true" north (the actual north axis of the earth's rotation) is known as variation. The amount of variation is not constant over the earth's surface. In a vessel containing much iron or steel, the needle is also deflected from true north by the attraction of that metal to a measurable degree called deviation.

The bowl of this compass is suspended in its binnacle by gimbals, which help to keep the compass card horizontal in a pitching sea. The binnacle has an attachment for an oil lamp.

John Edward Dent of London, a noted chronometer maker, in 1850 patented a compass used by the Royal Navy. E. & G. W. Blunt were the firm's agents in New York. Dent continued in business into the 1890s.

On 26 December 1870, during a passage from Liverpool to St. John's, Newfoundland, in the steamship *Ontario*, Charles Townshend wrote in his journal while off the southwest coast of Ireland: "At 6:10 PM the Fastnet Rock Light & North Star in range. Bearing by compass NE ¾ N which shows about 3¼ Points Local Attraction & Variation proving the Local Attraction Card for Port Compass Correct." (Log 122, G. W. Blunt White Library)

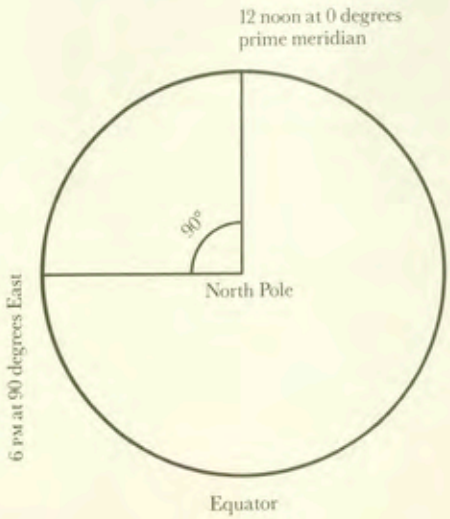
By "in range" Townshend meant that he was on a line from true north to true south that passed from the north star to Fastnet Rock Light to his ship, and that, therefore, he saw Fastnet Light directly below the north star. Local attraction is due to some local geographic feature that would, in addition to variation and deviation, deflect the compass needle.

Time/Longitude relationship diagram. (Drawn by Bill Gill)

The principle of determining a ship's longitude—position east or west of a prime meridian (zero degrees longitude)—is based on the difference in times at the ship and at the prime meridian.

There are 360 degrees of longitude around the equator, 180 east and 180 west. The earth's daily rotation carries each point on its surface through 360 degrees in twenty-four hours of time. Two points diametrically opposite on the equator (180 degrees apart) have a time difference of twelve hours; points 90 degrees apart have a time difference of six hours; and points 15 degrees apart have a one-hour time difference. Consequently, a ship in a position where the local time is six hours later than that on the prime meridian must have a longitude of 90 degrees east (because of the direction of the earth's rotation, time gets later as one moves eastward and earlier as one moves westward).

On a mid-nineteenth-century vessel like those commanded by Townshend, the difference in time between local time and that of the prime meridian was established by comparing local time, determined by sextant observation, with the prime meridian time kept by the ship's chronometer or determined by lunar observation.





Ship chronometer no. 835, sold by Bliss & Creighton, New York, ca. 1838–43. Brass, silvered brass face. Diameter of bezel: 4 11/16"; height: 2 13/16". Probably English. Gift of Mrs. Raynham Townshend, Sr. (58.804)

A chronometer is a marine timepiece with a detent escapement, which is used to establish the relationship of time between a ship's position and the prime meridian (usually Greenwich, England). Time at the ship is established by sextant observation of the sun or other celestial body; a simultaneous reading is made of the chronometer, which has been set to Greenwich time (zero longitude), or the time of any place used as the place of departure. Knowing the precise time in both locations, the navigator can use mathematical calculation and the *Nautical Almanac* (page 31) to determine the longitude of his position east or west of the meridian to which his chronometer is set.

Before the general acceptance of a timepiece as sufficiently accurate for use at sea, in the 1760s, other complex methods were used. For example, the lunar distance calculation (page 31), still employed by Captain Townshend as a check on his chronometer, required several observations made with great accuracy to be of any use.

Captain Townshend used or owned several chronometers during his sea career: a Dent, an Appleton, a Hornby, and this Bliss & Creighton, which he had with him in the ship *Germania* and which he mentioned by serial number. He kept tables of their accumulated error (rate of gain or loss, determined while in port) in the backs of his journals.

On a passage from Puget Sound to Queenstown, Ireland, Townshend was looking for Ducie Island in the Pacific. On 11 November 1864 he recorded in his journal: "At 3:30 PM Ducie Island E ¾ N compass. Dist. 5 miles. Long. by Hornby 577 125° 14′ 15″ W; Long. by Bliss & Creighton 835 125° 12′ 30″ W. I think Ducie Island is laid down on my chart about 20 miles too far east. It is a very dangerous Island can be seen in fine weather only about 5 miles from the deck." He concluded that not only was there an error in his chart, but also that his Hornby chronometer had an unanticipated additional error to be accounted for. (Log 196, G. W. Blunt White Library)

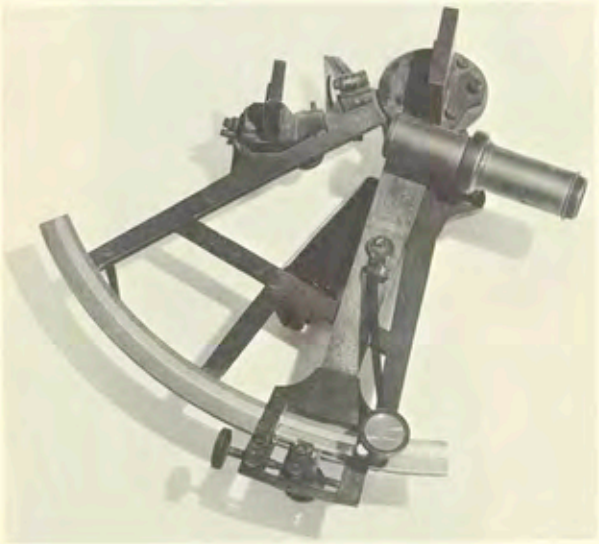
The two labels on the chronometer box have recently been separated. The bottom label is that of Thomas Tennent, a San Francisco dealer in nautical instruments who serviced Townshend's chronometer in 1864. The top label, of Solomon Marks & Son, chronometer and watch makers of Cardiff, indicates that additional service was performed when the *Germania* proceeded to London and Cardiff in 1865.

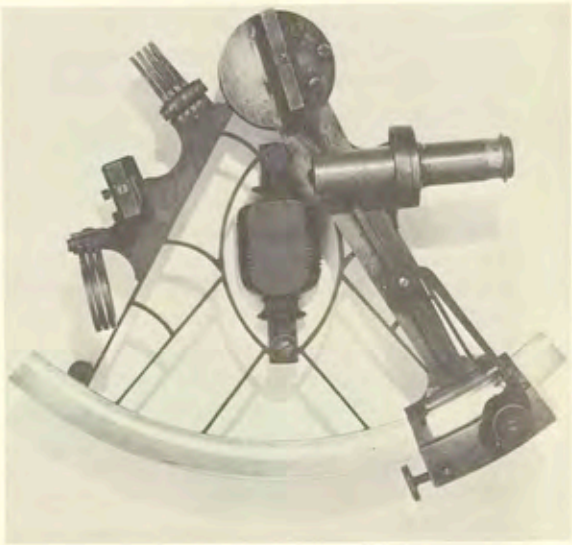
Octant. Brass with silver scale. Radius of arc: 7¾"; degrees: −1 to 120. Engraved on arc: Charlet aine Opt.n au Havre. *French, mid-nineteenth century. Gift of Raynham Townshend and Mrs. H. Newton. (63.358)*

The octant and the sextant are angle-measuring devices used in celestial navigation. They consist of a triangular frame on which are affixed a peepsight (or sighting tube, or telescope), an index mirror, a varying number of sunshades, a horizon glass (half clear and half silvered), an index arm that rotates the index mirror, and a scale embedded in the arc (curved short side of the triangle).

The index mirror is rotated by means of the index arm to catch the light of a celestial body. This light is reflected onto the mirrored side of the horizon glass, and the arm is manipulated until the reflection of the heavenly body is brought down to align with the horizon seen through the clear half of the horizon glass. The observer can then read the celestial body's angle of elevation (height above the horizon) from the degree scale on the arc. The scale is made more accurate by the addition of a sliding vernier scale, which reads to thirty seconds of arc on this octant.

To determine his position, the navigator must sight at least two celestial bodies. With their angles





of elevation, a book of mathematical tables, a *Nautical Almanac* (page 31), and the correct time (from a chronometer or lunar observation), he can make his computations.

The octant was invented in 1731. It encompasses one-eighth of a circle, or 45 degrees, which is doubled by the reflection from the index mirror to the horizontal glass, making observations possible up to 90 degrees. Some early octants were equipped with a backsight to allow observation of celestial bodies more than 90 degrees away from the visible horizon being faced by the observer.

Charlet was an instrument maker in Le Havre about whom very little seems to be known. Captain Townshend may have purchased this octant on one of his many voyages between New York and Le Havre, after he became third mate of the *Helvetia* in 1853.

Sextant. Bronze, brass arc with silver scale. Radius of arc: 8"; degrees: −5 to 155. Engraved on arc: E. & G. W. Blunt, New York. *Attachments include two telescopes, a sighting tube, and a pink eyeshade. Gift of Raynham Townshend and Mrs. H. Newton. (63.357)*

The sextant was developed in England by John Bird and John Campbell about 1757, about twenty-five years after the development of the octant. While operating on the same principle as the octant, the sextant measures 120 or more degrees, thus enabling the observer to take sights farther away from the visible horizon than is possible with the octant, to measure angles between the moon and other celestial bodies, and to use it in a horizontal position to measure angles between coastal features.

E. & G. W. Blunt were the sons of nautical publisher Edmund March Blunt, who moved from Newburyport, Massachusetts, in 1811 and set up a book, chart, and instrument shop on the New York waterfront. Edmund (1799–1866) and George W. Blunt (1802–1878) succeeded their father in the business about 1827. Famous as the publishers of the *Coast Pilot*, Bowditch's *New American Practical Navigator*, and an excellent series of charts, the firm handled many instruments imported from England, including Dent chronometers and compasses, and were sole agents for the French Gambey sextants.

In 1856 Edmund Blunt patented a dividing engine for making very precise graduations on a scale for instruments such as sextants. (Jesse Ramsden had invented the first dividing engine in England in 1773.) Thereafter, the firm produced some of its own instruments.

Charles Townshend owned this sextant. On 13 April 1864, 149 days out en route from New York to San Francisco, he recorded in his journal: "I have ruined my right eye this PM trying to adjust one of Blunt's sextants for a lunar obs." (Log 196, G. W. Blunt White Library)

The sextant box contains two labels. One is that of Thomas Tennent of San Francisco, who repaired the sextant in the course of the above-mentioned voyage. The other is that of T. S. & J. D. Negus of New York, who made repairs in 1898. Twenty-seven years after Townshend retired from the sea he was still keeping his sextant in good repair!

The Nautical Almanac and Astronomical Ephemeris for the Year 1852. Published by Order of the Lords Commissioners of the Admiralty. *(New York: E. & G. W. Blunt, 1849). (G. W. Blunt White Library)*

The *Nautical Almanac*, first published in 1766 under the direction of Nevil Maskelyne, the Astronomer Royal, was the product of ninety-one years of observations and computations by the Royal Observatory at Greenwich, England. The Observatory was founded by order of Charles II in 1675 to determine accurately the positions of stars and other heavenly bodies so navigators might use this information to determine longitude at sea.

Among the tables included in the *Almanac* are those giving precise positions of the sun, moon, planets, and stars. The page illustrated gives lunar distances: angles between the moon and other celestial bodies. This table permits the navigator to compute the exact Greenwich time at which this angular separation of the moon and the other celestial body was observed, thus providing the earliest practical method for finding longitude at sea. The *Nautical Almanac* was used in finding latitude as well.

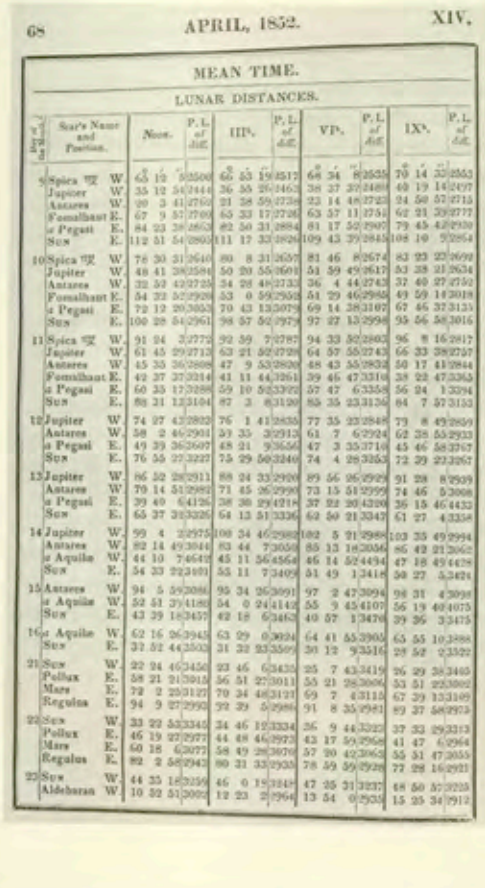
The *Nautical Almanac* was reprinted by Edmund March Blunt and his sons in America between 1811 and 1858. This is probably the version that Charles Townshend used.

Abstract log of the ship Germania, *Charles Hervey Townshend, master, 1861–66. (Log 196, G. W. Blunt White Library)*

This page for 9 November 1864 shows some of Townshend's navigational calculations. Having departed Puget Sound for Queenstown, Ireland, he was in the South Pacific, anxiously watching for the low, and therefore dangerous, Ducie Island.

The computations show the determination of Greenwich mean time by lunar observation and by the ship's chronometer. They also show the subsequent calculation of the ship's longitude referenced to each of these times, the ship's local time having been obtained by sextant observation.

Approximately 80 percent of the computations shown were required for determining longitude by lunar distance. A "lunar" required, among other things, great precision in the sextant, a very accurate measurement of the angular distance between the sun and moon, and a lengthy computation to obtain a longitude. Calculation of longitude from the chronometer could be accomplished with far less labor and greater accuracy, assuming that the chronometer was well made and in good running order. However, the checking of one method against the other remained important at this period, as chronometers were not flawless.



68 APRIL, 1852. XIV.

MEAN TIME.

LUNAR DISTANCES.

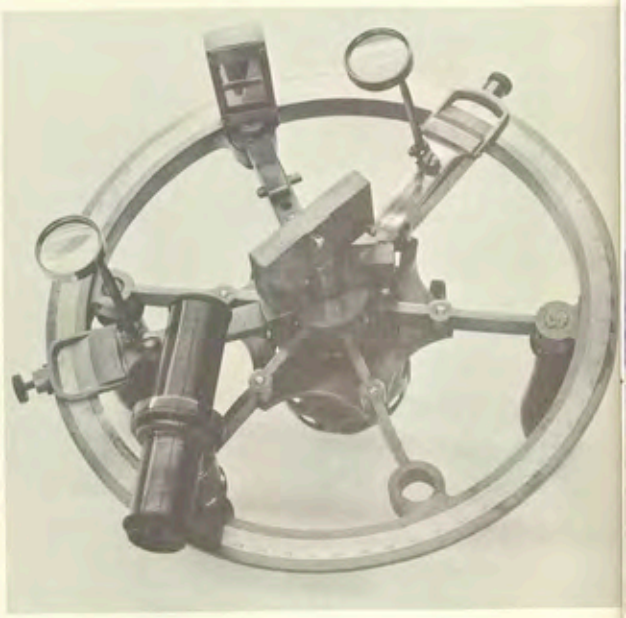
Day of Month	Star's Name and Position.		Noon.	P.L. of Add.	III^h.	P.L. of Add.	VI^h.	P.L. of Add.	IX^h.	P.L. of Add.
			° ′ ″	″	° ′ ″	″	° ′ ″	″	° ′ ″	″
9	Spica	W.	65 12 9.8500		65 53 19.8517		66 34 8.2535		70 14 35.2553	
	Jupiter	W.	35 12 54.2444		36 55 26.1463		38 37 37.2488		49 19 14.2497	
	Antares	W.	20 3 41.2760		21 58 59.2738		23 14 48.2723		34 50 57.2715	
	Fomalhaut	E.	67 9 57.2769		65 33 17.2726		63 57 11.2751		62 21 39.2777	
	α Pegasi	E.	84 23 38.2653		82 50 31.2884		81 17 50.2907		73 45 42.2930	
	Sun	E.	112 51 54.2893		111 17 33.2826		109 43 39.2843		108 10 5.2864	
10	Spica	W.	76 30 31.2646		80 8 31.2657		81 46 8.2674		83 23 22.2690	
	Jupiter	W.	48 41 38.2584		50 20 55.2601		51 59 49.2617		53 38 21.2634	
	Antares	W.	32 53 42.2725		34 28 48.2733		36 4 44.2742		37 40 27.2751	
	Fomalhaut	E.	54 32 55.2928		53 0 59.2952		51 29 46.2976		49 59 14.3018	
	α Pegasi	E.	72 12 20.3053		70 43 13.3079		69 14 28.3107		67 46 37.3131	
	Sun	E.	100 28 54.2961		98 57 32.2978		97 27 13.2996		95 56 58.3016	
11	Spica	W.	91 24 2.2775		92 59 7.2787		94 33 32.2802		96 8 16.2817	
	Jupiter	W.	61 45 29.2713		63 21 52.2729		64 57 55.2743		66 33 39.2757	
	Antares	W.	45 53 36.2686		47 9 53.2699		48 43 55.2824		50 17 41.2844	
	Fomalhaut	E.	42 37 27.3214		41 11 44.3261		39 46 47.3316		38 22 47.3362	
	α Pegasi	E.	60 35 17.2888		59 10 52.2902		57 47 6.3358		56 24 1.3294	
	Sun	E.	88 31 12.3104		87 3 8.3120		85 35 23.3136		84 7 57.3153	
12	Jupiter	W.	74 27 43.2803		76 1 41.2855		77 35 23.2848		79 8 45.2859	
	Antares	W.	58 2 46.2901		59 35 30.2913		61 7 57.2924		62 38 55.2933	
	α Pegasi	E.	49 39 36.2697		48 21 9.2656		47 3 35.3716		45 46 38.3767	
	Sun	E.	76 55 27.3227		75 29 50.3240		74 4 28.3263		72 39 22.3287	
13	Jupiter	W.	86 52 28.2911		88 24 33.2900		89 56 26.2929		91 28 8.2939	
	Antares	W.	70 14 51.2992		71 45 26.2998		73 15 51.3299		74 46 5.3008	
	α Pegasi	E.	39 40 6.4126		38 20 29.4218		37 22 30.4308		36 15 46.4432	
	Sun	E.	65 37 39.3326		64 13 51.3336		62 50 21.3347		61 27 4.3354	
14	Jupiter	W.	99 4 2.2975		100 34 46.2982		102 5 21.2986		103 35 49.2994	
	Antares	W.	82 14 49.3044		83 44 7.3050		85 13 16.3056		86 42 21.3062	
	α Aquilæ	W.	44 10 7.4649		45 11 56.4564		46 14 52.4494		47 18 49.4428	
	Sun	E.	54 33 22.3691		53 11 7.3409		51 49 1.3418		50 27 5.3424	
15	Antares	W.	94 5 59.2986		95 34 26.3091		97 2 47.3094		98 31 4.3098	
	α Aquilæ	W.	57 51 37.4186		59 3 45.4107		60 15 49.4035		61 27 49.3965	
	Sun	E.	43 39 18.3457		42 18 6.3463		40 57 1.3476		39 36 3.3475	
16	α Aquilæ	W.	62 16 26.3945		63 29 0.3924		64 41 55.3902		65 55 10.3886	
	Sun	E.	32 52 44.3503		31 32 23.3509		30 12 9.3516		28 52 2.3522	
21	Sun	W.	22 24 46.3456		23 46 6.3439		25 7 43.3419		26 29 38.3403	
	Pollux	E.	58 21 21.3918		56 51 27.3911		55 21 28.3909		53 51 22.3902	
	Mars	E.	72 2 25.3127		70 34 46.3121		69 7 4.3115		67 39 13.3109	
	Regulus	E.	94 9 37.2992		92 39 5.2986		91 8 35.2981		89 37 58.2975	
22	Sun	W.	33 22 53.3345		34 46 19.3334		36 9 44.3322		37 33 29.3313	
	Pollux	E.	46 19 27.2977		44 48 46.2972		43 17 59.2968		41 47 6.2964	
	Mars	E.	60 18 6.3077		58 49 28.3070		57 20 42.3063		55 51 47.3055	
	Regulus	E.	82 2 56.2942		80 33 33.2935		79 5 9.2928		77 36 16.2921	
23	Sun	W.	44 35 18.3259		46 0 19.3249		47 25 21.3237		48 50 57.3223	
	Aldebaran	W.	10 32 51.2099		12 23 2.2964		13 54 0.2535		15 25 34.2912	



Double reflecting circle. Brass with silver scale. Diameter: 10¾". Inscribed on radial arm: No. 121, Gambey à Paris. *Graduated 0 to 720 degrees in increments of 20 minutes of arc; vernier 0 to 20 minutes, subdivided to 20 seconds of arc. Inner arc graduated from 0 to 140 degrees both clockwise and counterclockwise in increments of one degree, and has two adjustable stops. French, mid-nineteenth century. Gift of Raynham Townshend. (63.362)*

The principle of the full circle was developed by Tobias Mayer (1723–1762) after the invention of the octant. The instrument was improved in 1772 by J. C. de Borda, for whom it was known as the Borda circle. Because it could encompass angles greater than 90 degrees, it was useful in measuring lunar distances for longitude. It could also be employed, when held in a horizontal plane, to find a position in reference to three coastal features. Though still manufactured through the nineteenth century, the full circle was generally superseded by the sextant, which, after the invention of Ramsden's dividing engine in 1773, had an equally accurate scale while being less costly, heavy, and cumbersome than the full circle.

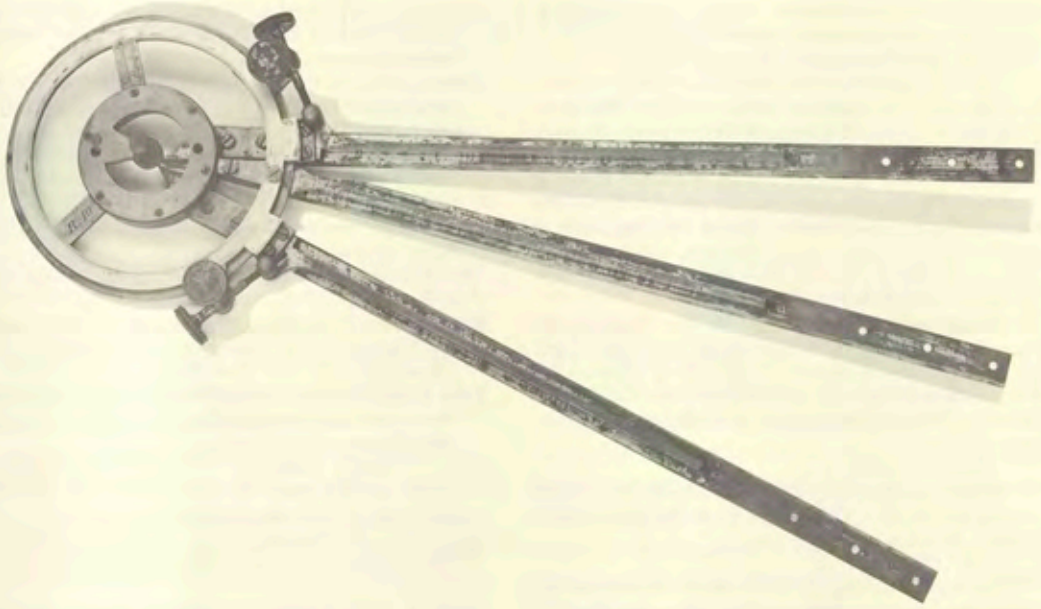
Henri-Prudence Gambey (1787–1847) worked in Paris and specialized in precision instruments for physicists and astronomers, including major instruments for the Paris Observatory. E. & G. W. Blunt in New York were agents for Gambey sextants. It is possible that Townshend purchased this reflecting circle at the Blunts' Sign of the Quadrant.



Townshend was influenced by the features of this Gambey circle in working out his own instrument. His patent drawing is almost an exact replica of it. He altered this Gambey circle by adding one index glass and one vernier, and by increasing the height of the horizon glass, thereby making possible the simultaneous measurement of the angles between three objects.

Double reflecting circle. Brass with silver scale. Engraved on arc: Chas. Hervey Townshend/ Pat.d Jan. 31, 1888. *Graduated 0 to 180 degrees by quadrants in increments of 20 minutes of arc. Center reading vernier subdivided to 20 seconds of arc. Diameter: 7⅞". Gift of Mrs. Raynham Townshend. (46.232)*

Charles Townshend patented a design for a double reflecting circle in 1888. His earliest, crude model is in the collection of the New Haven Colony Historical Society. The Seaport owns five of his circles, of which the one illustrated is probably the earliest. Like his altered Gambey, this circle permits the user to observe three objects simultaneously, measuring the angles between them. This particular full circle differs in several respects from the patent drawing. Later models were manufactured by Stackpole & Bro. of New York. They exhibited a number of modifications of design, including the use of an aluminum frame and an attachable station pointer (page 33).



Station pointer, also called a three-armed protractor. Brass. Diameter of degree scale: 4"; length of arms with extension: 25⅛". Inscribed on radial arm: Dollond, London, R. 10. *Scale graduated from 0 to 180 degrees clockwise and counterclockwise in increments of 30 minutes of arc; vernier 0 to 30 minutes, subdivided to one minute. English, mid-nineteenth century. Gift of Raynham Townshend and Mrs. H. Newton. (63.360)*

The station pointer is used in the course of marine surveying, along with a sextant (or a full circle) held horizontally, and a chart. The angular distance between three shore landmarks is taken and laid off on the circular scale of the station pointer by means of three radial arms. The arms are aligned to pass through the corresponding points on the chart, and the position of the ship is transferred to the chart by a pin thrust through the central pierced hole of the station pointer.

John Dollond (1706–1761) reinvented the achromatic lens; his son Peter (1730–1820) was the most renowned optical instrument maker of his day in London. Under the name of G. Dollond, the firm continued in business throughout the nineteenth century. The label in the box for this station pointer reads: "G. Dollond, Optical Mathematical and Philosophical Instrument Maker to Her Majesty, 59 St. Paul's Churchyard, London."

Charles Townshend would have used this instrument after he retired from the sea, possibly in conjunction with one of his reflecting circles, to lay out oyster beds or perhaps to survey New Haven Harbor for the breakwater project that he promoted.

NOTES

[1] Quoted in Carl C. Cutler, ed., *Captain Charles Hervey Townshend: Self-Portrait of an American Packet Ship Sailor* (Mystic, Conn.: Marine Historical Association, 1940), p. 3. This publication, hereafter abbreviated as Cutler, has been the basis from which we have conducted our research. The letters which comprise most of its contents have, unfortunately, vanished, and we are therefore unable to use them as primary sources. We have, however, used the resources of the New Haven Colony Historical Society's Whitney Library: Maritime Collection 22, Box xiii, and Folder 13c contain many of Townshend's official letters, crew lists, inventories of navigational instruments, vessel plans, manifests, etc. We wish to thank Ottilia Koel, Librarian, and Robert Egleston, Curator, of the New Haven Colony Historical Society, and Deborah Jean Warner, Curator, History of Physical Sciences, Smithsonian Institution, for research help. At Mystic Seaport, we are grateful for help extended by Philip L. Budlong, Elizabeth O. Friedman, David Mathieson, Frank H. Murphy, Stephen Rice, and James A. Welch.

[2] Abstract log of the ship *Germania*, Charles Townshend, master, 12 January 1865, Log 196, G. W. Blunt White Library, Mystic Seaport Museum.

[3] *The Townshend Family* (Boston: David Clapp & Sons, 1875 and later editions). See also Cutler, Appendix I, opp. p. 86.

[4] Quoted in Cutler, p. ix.

[5] This record of voyages was compiled by Townshend himself and inscribed on a wooden plaque in the New Haven Colony Historical Society. See also Cutler, Appendix III.

Townshend's final examination, which is very illuminating as to what was being taught at mid-century, is in the collection of the New Haven Colony Historical Society.

[6] See note 3 above; articles and books written by Townshend include *The Quinnipiac Indians and Their Reservations* (New Haven: Tuttle, Morehouse & Tayler, 1900); *The Early History of Long Island Sound and Its Approaches* (New Haven: Tuttle, Morehouse & Tayler, 1894); *A Pictorial History of Raynham and Its Vicinity* (New Haven, 1900); *The Commercial Interests of Long Island Sound in General and New Haven in Particular* (New Haven: O. A. Dorman, 1883); see also Cutler, Appendix I; *American Shipbuilder*, 5 May 1904, copy in New Haven Colony Historical Society.

[7] Matthew Fontaine Maury, "On the Navigation of Cape Horn," *American Journal of Science* 26, *Art. V* (July 1834): 56, 59, 61, quoted in Douglas Stein," Paths Through the Sea: Matthew Fontaine Maury and His Wind and Current Charts," *The Log of Mystic Seaport*, 32 (Fall, 1980), pp. 102–105.

[8] Quoted in Cutler, p. 4.

[9] "Journal of the ship *Germania*, Charles H. Townshend, master, 3 December 1864, Log 122, G. W. Blunt White Library, Mystic Seaport Museum.

[10] *Ibid.*, 13 March 1862.

[11] Journal of Charles H. Townshend aboard the ship *Southampton*, 24 and 29 October, 3 December 1850, Log 264, G. W. Blunt White Library, Mystic Seaport Museum.

[12] Journal of ship *Germania*, Charles H. Townshend, master, 22 December 1858, 9, 14 January 1859, Log 195, G. W. Blunt White Library, Mystic Seaport Museum.

[13] Abstract log of ship *Germania*, Charles H. Townshend, master, 23 January 1864, Log 196, G. W. Blunt White Library, Mystic Seaport Museum.

[14] Journal of ship *Germania*, Charles H. Townshend, master, 19 January 1865, Log 195, G. W. Blunt White Library, Mystic Seaport Museum; see also F. W. Keator, "Sumner's Line of Position," *The Log of Mystic Seaport*, 23 (Fall 1971).

[15] Doris B. Townshend, *Townshend Heritage* (New Haven: New Haven Colony Historical Society, 1971), p. 246.

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——, "The Townshend Double Reflecting and Repeating Circle," advertisement, Whitney Library, New Haven Colony Historical Society.

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A View From the Rosenfeld Collection

Morris Rosenfeld (1885–1968) was the patriarch of the Rosenfeld family of photographers. Growing up in lower Manhattan, he was caught up in the maritime scene of New York's busy port. By the age of thirteen he had won an amateur photo contest with a maritime view. At age eighteen he was managing a photo portrait studio on Fifth Avenue. Soon after, he became a freelance photographer serving a variety of New York newspapers and magazines.

As a freelance photographer with his own studio, Rosenfeld came into increasing demand as an industrial photographer after 1910. Two of his principal clients were AT&T and a large New York real estate firm. His staff grew to eight by 1920 and fourteen by the late '20s.

While his profits came from industrial, architectural, advertising, and news photography, his personal passion was maritime photography. He became a fixture at sail and power boat races. He covered the America's Cup challenges and Gold Cup speed boat races, as well as local yacht club series in the New York area. Many yachtsmen were not satisfied until Morris Rosenfeld had recorded their craft, both inside and out. In the 1920s he purchased the first of his chase boats, named *Foto*, which allowed Rosenfeld to take his camera into the heart of the action.

The credit line for the firm's photos was "Morris Rosenfeld & Sons," and many of the later views were, in fact, taken by his sons. David, the eldest, began to work for his father in the late 1920s, followed by Stanley in 1930 and later William. Because of the family's group credit line, it is presently impossible to tell how many of the approximately 750,000 negatives and slides in the collection were taken by Morris Rosenfeld. But his output was prodigious; he remained active well into the 1950s, completing over fifty years as a professional marine photographer.

Morris Rosenfeld is best known for his yachting views, which were his passion, yet, he also photographed commercial vessels, either on commission or when they appealed to his well-developed aesthetic sense.

In the early 1920s he made this splendid 6½" x 8½" glass-plate negative of the four-masted schooner *Cumberland Queen*. Launched by C. Robinson at Diligent River, Nova Scotia, in 1919, the 682-gross-ton, 179-foot schooner was owned by J. N. Pugsley. In April 1922, while carrying salt north, she capsized off Cape Hatteras. Salvaged, she was repaired at Norfolk and sold to A. P. Vane of Wilmington, Delaware, who renamed her *Emerett*. Now under American registry, she continued to lug bulk cargo along the Atlantic coast. In 1927 she was sold to W. S. Roberts of Baltimore. On 4 March 1931 she foundered about 400 miles east of the Georgia coast, and her crew—seven men—lost their lives. Her derelict hull was later discovered and towed to Norfolk for disposal.

(4101S)



LETTERS

Enclosed are photographs of three ships of the Alaska salmon cannery fleet: the *Benj. F. Packard*, *Pactolus*, and *Berlin*. The pictures were taken in 1922, probably in May, by my late Annapolis classmate, Rear Admiral Martin P. Hottel, USN, who made a Bering Sea cruise with his father, who was in command of a Coast Guard cutter. Hottel and I entered the Naval Academy in 1923.

The ships were bound for Bristol Bay with hands and supplies for the canneries. The cutter was on patrol at Unimak Pass to see that the ships got safely through. In his *Merchant Sail*, Fairburn listed the *Berlin* as lost in February 1922, while the *New York Maritime Register* correctly dates her loss in May. A number of years ago there was a picture in *Yachting* of one that did not make it. It was captioned: "Better a mile too far than a fathom too near." Could it have been the *Berlin*?

The *Benj. F. Packard*, either tacking or hove to while her master speaks the Coast Guard cutter near Unimak Pass in the Aleutian Islands, May 1922. The 2,130-ton, 244-foot *Packard* was launched by Goss, Sawyer & Packard at Bath, Maine, in 1883. After twenty-five years of deep-water service she was a part of the Alaska Packers Association fleet from 1908 to 1924. Though she was scuttled in 1939, her after cabin survives as an exhibit at the Seaport.



The *Tourist* (now the Seaport's *Sabino*) picture belongs to my sister and was taken in November 1910. She made a special trip to our float on the Damariscotta River to pick up our family and baggage. We were bound for our second winter in Bermuda. We were four children and I was six. I am standing in front of my sister on my mother's right on board the *Tourist*. A trunk can be seen on the fore deck, to the right of the butler.

The move was a major operation. We took a governess, the butler, the coachman, a boat's crew, a dog, a horse and pony and vehicles, a forty-foot launch, a yacht launch, and a dinghy with a glass in its bottom to see the fish and coral. It was our last fling in Bermuda and a lot of fun. I can't imagine doing anything like it today. And I must add that my family was not really wealthy in 1910, and things could be done that are beyond reach now. The adventure that began that day on board the *Tourist* was a major event in my young life, and I am looking forward to standing on her deck another day.

Rear Admiral William F. Royall
USN, retired
East Boothbay, Maine

The 1,634-ton, 222-foot ship *Berlin* was launched by C. V. Minott at Phippsburg, Maine, in 1882. After fifteen years on the Cape Horn run and in Pacific trade she joined the Alaska Packers fleet in 1897. She stranded and was lost a few days after this photograph was taken as she approached the Alaskan coast in May 1922. In this view she has been rerigged as a bark with the elimination of her mizzen yards. She carries the jib-headed spanker characteristic of late Pacific Coast square riggers, supplemented by a sail much like an inverted topsail set below the gaff.



Boiling along with a breeze on the quarter and a deckload of cannery workers (the "China Gang"), the bark *Pactolus* shows the power of the "Down Easters." At 1,668 tons and 230 feet, she was the largest bark built at Bath, Maine. The noted designer John McDonald launched her in 1891 as his last vessel. Though nearly outdated for ocean trade at the time of her launch, she was a strong, powerful vessel and served the Alaska Packers until they retired their wooden sailing vessels in 1927.



The *Tourist (Sabino)* in the Damariscotta River, November 1910.



BOOK REVIEWS

Robert C. Keith, editor. *The Jim Richardson Boat Book*. Baltimore: Ocean World Publishing Company Inc., 1985. $12.95.

An event that did honor to our American maritime heritage occurred without fanfare and went largely unnoticed at the time, when, not so long ago, *Jenny Norman*, the last of the Chesapeake bugeyes, slipped quietly into the stream at the Richardson yard in Cambridge, Maryland. The last bugeye, I have said, because there had not been a newly built bugeye launched on the Bay in many a year, and also because it may be some time to come before another authentic bugeye is built.

Time was when a numerous fleet of sailing bugeyes dredged the Bay for oysters, their raking masts reminiscent of Baltimore clippers, their handsome clipper bows and great out-reaching bowsprits adorned with lavish expanse of carved and painted trailboards. Direct descendant of the aboriginal Indian log canoe, the bugeye is our most distinctive native American watercraft.

The bugeye *Jenny Norman* was built deliberately, patiently, and with loving care in the latter years of a long and distinguished boatbuilding career as the fulfillment of a cherished dream long held in abeyance by the exigencies of making a living at a trade that has been more generous with recognition than it has been with material rewards.

Jim Richardson, builder of *Jenny Norman*, whose wide-ranging conversations, searching, sometimes quizzical but kindly, whose pithy commentary and practical craft knowledge have been gathered and melded in this book, may well find satisfaction in the recognition he has earned. His long-time friend, Howard Chapelle, premier maritime historian, esteemed Jim as a man and as a builder, deferred to his judgment, and sought out his skill and mechanical ingenuity on more than one occasion, as when Mr. Jim pulled the thirty-ton colonial gunboat, *Philadelphia*, half the length of the Science and Technology exhibition hall at the Smithsonian in Washington, some 150 feet altogether including a right angle turn, despite nearly insuperable restriction written into the contract by the building inspector, and did it without leaving a scratch.

In 1975 the City Commission of St. Mary's City, Maryland, decided to have a reproduction built of the forty-ton colonial pinnace *Dove*, one of the two vessels that brought the first settlers to Maryland in 1634. William Avery Baker, designer of *Mayflower II*, now berthed at Plimoth Plantation, was engaged to draw the plans. There were only two yards on the East Coast capable of building such a vessel. Richardson's yard at Cambridge was picked, and in 1977 James B. Richardson, a man of seventy, came out of semi-retirement to build this massive sixty-five-foot wooden ship, so heavy with her mighty oak keel and over-size double-futtock sawn frames that her weight crushed the wood rollers when she was moved to the launching site. Completed in fifteen months, the *Maryland Dove* was eased into Lecompte Creek on the morning of 14 August 1978 ready to be sailed across the Chesapeake to her berth at St. Mary's City.

When it came to replacing the main mast of the wooden man-of-war *Constellation*, on permanent display in Baltimore Harbor, the huge 120-ft Douglas fir log, too large to be brought in overland, was floated to the Richardson yard where a crew with broad axes and adzes, under Jim Richardson's experienced and exacting eye, chopped the giant stick, too huge for any modern spar lathe, down to its designed dimensions, rounded it, and planed it smooth.

Jim's replica of a colonial post mill, now grinding corn across the road from the shipyard, exemplifies the mechanical skill and versatility of the master shipwright who built it. The mill is supported high off the ground on a single huge oak post, whence comes the name, and on which it freely turns to face the wind. Power supplied by a sixty-five-foot sweep of rotating vanes is transmitted by wooden gearing, contrived by Jim, to turn the heavy horizontal mill stone.

In view of all this and a great deal more, it was only fitting that Maryland's Governor Harry Hughes, during the Chesapeake Appreciation Days celebration in 1979, bestowed on Mr. Jim, as acquaintances speak of him with affection and respect, the title, Admiral of the Chesapeake Bay. Nor was it strange when James Mitchner came to write his *Chesapeake* that he sought out Jim, and that much that Jim told him, Mitchner put into his book.

It has been necessary to go into some detail in the foregoing, for Jim Richardson is not one to beat his own drum. His is a book about boats, boatbuilders, and boatbuilding the Chesapeake way, how the old-timers did it, who did it so well. It tells how to go into the woods and pick the timber, how to carve a model and then to build from it. It is about proven hull

proportions, about building for safety, about an interior planned for convenience and comfort, about simple and efficient rigging. And this but scratches the surface of what lies in store for the reader. So much technical detail could have made a dull book. There is not a dull word in it. Jim has an observant eye guided by a keen interest in life, and, in addition, is a born conversationalist. This book is the distilled essence of many long conversations with Jim that were taped by the publisher, a reporter and editor of wide experience and a sailor who sets great store by *Champion Girl*, the skipjack Jim built for him.

At last we have a book about boats and boatbuilding from the lips of a boatbuilder, and one whose qualifications are second to none.

John Gardner
Associate Curator for Small Craft, M.S.M.

ACQUISITION

A serious gap in Mystic Seaport Museum's marine painting collection has at last been filled, through the generosity of Dr. John H. Kemble, a long-time friend of the Museum and visiting professor at the Munson Institute. We are happy to be able to present here our first ship portrait by American "primitive" artist James Bard.

This gouache (watercolor) on board shows the side-wheel steamer *Saugerties*. This 200-foot vessel was built at Brooklyn in 1882 as the *Shenandoah* for the Old Dominion Steamship Company. She ran connecting service between the steamship line's docks at Norfolk, Virginia, and points up the James River.

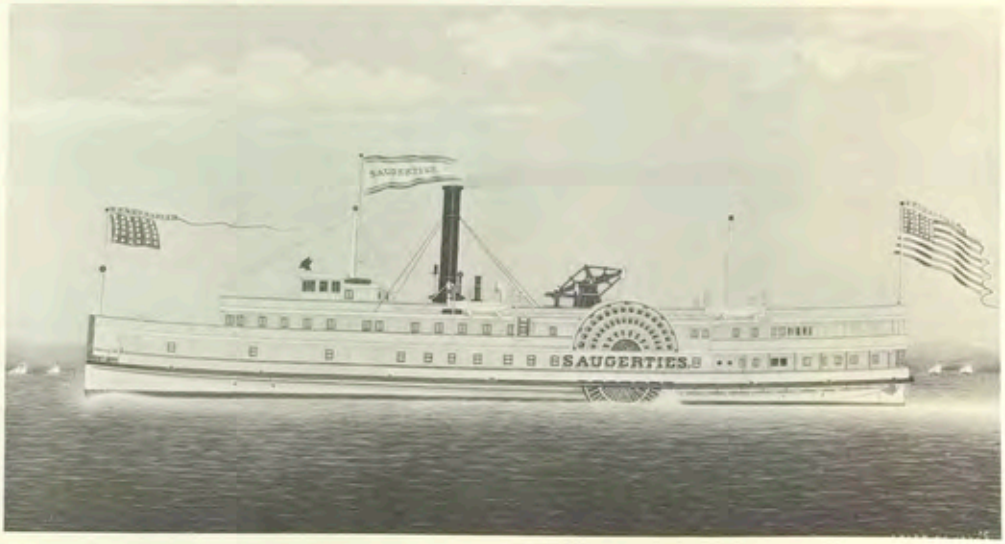
In 1888 she was purchased by the Saugerties and New York Steamboat Company. Referred to as "the Biggest Little Steamboat on the River," she ran as a night boat on the Hudson between New York and Saugerties until Sunday, 23 November 1906, when she burned, loaded with freight, at the Saugerties dock.

The Bard twins of New York—James (1815–1897) and John (1815–1856)—were self-taught artists, but their technique was far from "primitive." They specialized in accurate, extremely detailed broadside portraits of New York area steamboats. The style of their views—the flatness of the images, clarity of color, and overall decorative quality—is easily recognizable, and their paintings are now highly prized among collectors of American folk art.

In his own day, James Bard was not widely known, nor were his paintings. Only his friend, fellow artist, and steamboat historian Samuel Ward Stanton (1870–1912) noted his death with real understanding and praise for his skill.

> Probably Mr. Bard was without parallel in the faithfulness of delineation in his drawings of vessels. . . . his pictures were always side views, and this often made faulty perspective, yet a Bard picture will ever be held in esteem for its correctness and reality. . . . Shipbuilders have said that they could lay down the plan of a boat from one of his pictures, so correct were they in their proportions. Before making his drawing, Mr. Bard would measure the boat to be pictured from end to end, and not a panel, stanchion or other part of the vessel, distinguishable from the outside, was omitted; each portion was measured and drawn to scale.

Signed, lower right, "J. Bard. N.Y. 1890. 75 years," this is believed to be the artist's last dated painting. 27″ x 50″. [86.123]





The Shipsmith, winner of the black-and-white division, by Ken Wiedemann.

Mystic Seaport Photo Day

The Seaport is undeniably photogenic. In recognition of that fact, the Museum has held a special Photo Day annually since 1980. On that day, the Museum's gates open at 6:00 A.M. and close at dusk, offering a full day to the hundreds of amateur and professional photographers who come seeking unusual perspectives.

In 1986, Mystic Color Lab, Cunard, and the Seaport sponsored the first annual Photo Day photo contest. Cash prizes were awarded for the top three entries in both the color and the black-and-white category. In addition, as grand prize, Cunard donated a week-long cruise in the Caribbean. Judges represented Cunard and the Seaport's Photographic Division and Public Affairs Department.

Fifty-six photographers submitted 120 photographs for the contest. Bernard M. Lynch, Jr., of Waterbury, Connecticut, won the color division and also the grand prize, while Ken Wiedemann of Franklin, Massachusetts, won the award for best black-and-white photo. All of the prize-winning photos will be on display during the next Photo Day, 12 September 1987.

On the Wharf, winner of the color division and grand prize, by Bernard M. Lynch, Jr.



THE LOG OF MYSTIC SEAPORT Prize Article Contest

The Fellows of the G. W. Blunt White Library and the Editorial Board of *The Log of Mystic Seaport* are pleased to announce the seventh annual prize article contest.

Purpose To encourage the study of American maritime subjects, and to promote the publication of original research in the field.

Criteria Accurate scholarship demonstrating original research and, when appropriate, the use of primary source material. Articles can take the form of biography or studies on economic, political, social, literary, artistic, or musical aspects of the American maritime traditions. However, strictly naval topics and works of fiction are excluded.

Eligibility Ineligible are Trustees of Mystic Seaport Museum and members of the Editorial Board of *The Log of Mystic Seaport*.

Manuscripts No more than 6,000 words in length (excluding footnotes and bibliography). Entries must not have been previously published. Editorial Guidelines and Contest Entry Forms are available from: The Editor, *The Log of Mystic Seaport*, Mystic Seaport Museum, Mystic, Connecticut 06355–0990.

Deadline Manuscripts must be submitted prior to 1 December 1987.

Award Five hundred dollars and publication in *The Log of Mystic Seaport*.





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