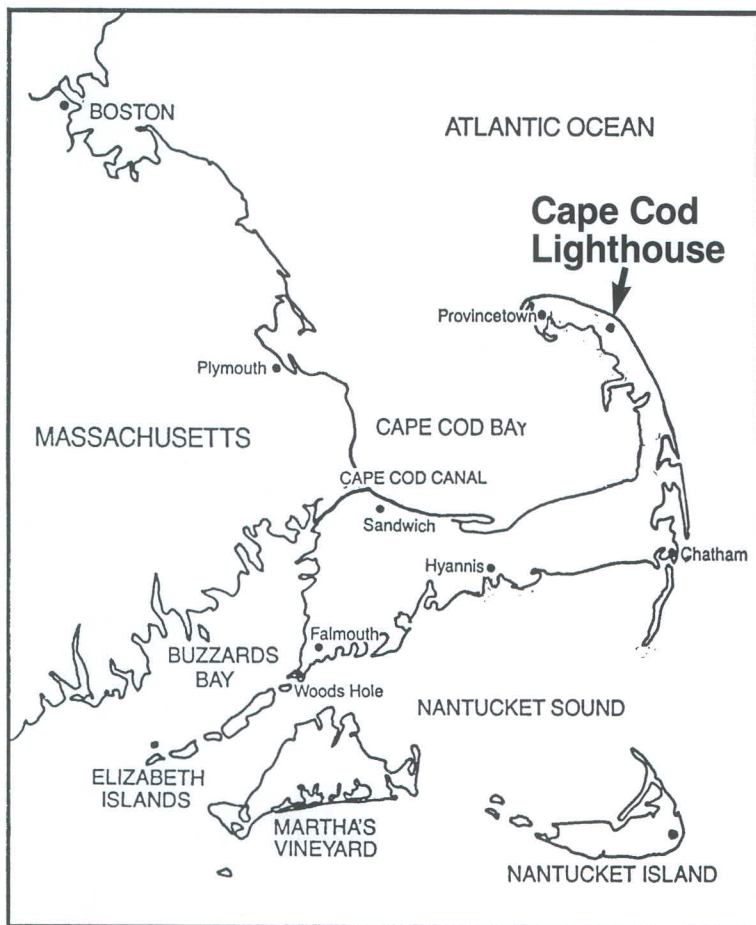




by Admont Clark



From my house in Dennis on Cape Cod, when the weather is clear, I can see the flash of the Cape Cod Lighthouse at Highland (often referred to as the Highand Light) on the back shore of the Cape, 19 miles across the bay. It's a comforting sight for any sailor who has wandered the world's oceans. In fact those who go "in peril on the seas" have owed their lives to the faithful keepers of lighthouses.

Sailing the open seas presents few problems, it is when the shoreline looms that danger lurks, especially for sailing ships and particularly near Cape Cod, with its ever shifting shoals and along its lee shore in Winter storms. In 1903 the Army Corps of Engineers charted 1,003 known ship wrecks on Cape Cod. When Champlain visited the waters of Cape Cod in 1606 he named it 'Cap Mallebarre' (Evil Bars) and the *Mayflower*, heading for Virginia, became so enmeshed in shoals that she came about and landed on Cape Cod (and eventually at Plymouth) instead gaining Virginia. Until the Cape Cod Canal opened in 1914 every ship sailing the waters around the Cape was at risk; at mercy to the shifting shoals and sudden storms.

In 1789, when our new federal government took over the twelve colonial lighthouses, the duty of being a lighthouse keeper was considered so important that appointments were personally signed by George Washington. In 1806 Thomas Jefferson wrote, "I think the keepers of light-houses should be dismissed for small degrees of remissness, because of the calamities which even these produce."

In 1794 the Reverend Levi Whitman of Wellfleet, MA wrote to his good friend Dr. James Freeman of Boston:

"That mountain of clay in Truro seems to have been erected in the midst of sand hills by the God of Nature for the foundation of a lighthouse...Why, then, should not that dark chasm between Cape Ann and Nantucket be illuminated?"

Dr. Freeman was recording secretary of the Massachusetts Historical Society, a most prestigious group. He promptly enlisted the support of the Boston Marine Society and the Humane Society, thus including the cream of the maritime industry in the lobbying effort. And quite soon, thanks to their efforts in Congress, steps were taken to illuminate "that dark chasm."

A deed, dated August 6, 1796 marks the formal start of lighthouse history on Cape Cod—

"Know all men by these presents that I, Isaac Small of Truro in the County of Barnstable, traded in consideration of one hundred and ten dollars to me paid by the United States of America sile and convey unto the said states a certain parcel of clean land in said Truro near a place called the Clay Pounds...(containing) picesely ten acres...and also sile and covey unto the said states...the privilege of passing and repassing through my land...said passage to be convenient for teams hors or foot with convenient gates or barrs..."

On Isaac Small's ten acres the Cape Cod or Highland (pronounced as two words) Lighthouse rose quickly and was first illuminated in 1797. The finished brick tower was only 45 feet high, but due to the elevation of the cliff the focal

plane of the optic was 180 feet above the water. A single keeper was appointed to attend the station at a salary of \$300 a year.

It was the seventh lighthouse constructed by the new government (19th U.S. lighthouse overall). To distinguish the Cape Cod light from the fixed light of the Boston lighthouse a revolving eclipser was installed. This apparatus consisted of a brass shield, fifteen small oil lamps fitted with 15" diameter reflectors (basically the Argand system) and a weight driven clockworks. The clockworks caused the shield, or eclipser, to pass in front of the lamps and thus, created a characteristic or flash. In 1807 Edward Randall visited the lighthouse and was impressed by the eclipser which rotated around the optic every eight minutes. However, he didn't think that the effect provided the best result for the mariner and stated,

"By this machinery, the light is made alternately visible and invisible, and presents various phases, like the moon; and this is the distinctive mark; but the practice result is not as favorable as must have been contemplated, before the plan was admitted into use.

We see, that the skreen is continually turning, the light is full only for a single moment; but during all the time in between it is no more than an obscure and imperfect light...There are circumstances enough at sea, to obscure the best of lights, without any contrivences on shore to assist this misfortune! A light that should appear, not steadily, but by incessant flashes, would be useful; but this cannot be the case with one, the fullness of which returns so slowly." (ed—this observation is incorrect as the flashing, however slow to 'return' does provide a characteristic and distinguishes the light from that of another lighthouse or the light in the window of a dwelling. Additionally, ships moved slowly in those days of sail and sailors had ample time in which to fix their position.)

In 1840 the characteristic of the Cape Cod light was changed to fixed, but still employed the reflector system.

Sometime later Henry David Thoreau, who visited three times at

Highland during his walking trips, recorded in his work **Cape Cod**:

"Over this bare Highland the wind has full sweep. Even in July it blows the wings over the heads of young turkeys, which do not know enough to head against it...and you must hold onto the lighthouse to prevent being blown into the Atlantic."

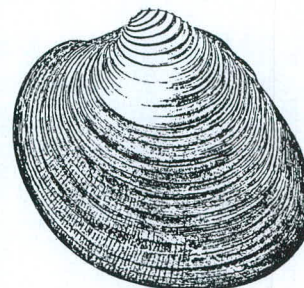
Being a good practical surveyor he decided to measure the angle and height of the blue clay cliff in front of the tower and lack of equipment didn't stop him.

"I borrowed the plane and square, level and dividers of a carpenter...and, using one of those shingles made from a mast, contrived a rude sort of quadrant...The mixed sand and clay lay at an angle of 40 degrees with the horizon...but the clay is much steeper. No cow or hen ever gets down it." Thoreau found that the cliff was 123 feet above the water.

Thoreau found his host, Keeper Enoch Hamilton, to be a gracious person and stated;

"The Keeper entertained us handsomely in his solitary little ocean house. He was a man of singular patience and intelligence, who, when our queries struck him, rang as clear as a bell in response. The lighthouse lamp a few feet distant shone full into my chamber, and made it as bright as day, so I knew exactly how the Highland Light bore all night, and I was in no danger of being wrecked...I thought as I lay there, half awake and half asleep, looking upward through the window at the lights above my head, how many sleepless eyes from far out on the Ocean stream—mariners of all nations spinning their yarns through the various watches of the night—were directed toward my couch."

Thoreau also remarked that the numerous regulations posted on the wall of the keepers watch room were excellent



but required a regiment to attend to them. He noted that one of the regulations required the keeper to make a record of each ship that passed the station during the day and said, "...but there are a hundred vessels in sight at once, steering in all directions, many on the verge of the horizon, and (to do so) he must have more eyes than Argus, and be a good deal farther sighted, to tell which are passing his light." Keeper Hamilton related that in one ten day period in 1853 he recorded that 1,200 ships had passed his lighthouse.

Because of its location, the Cape Cod Lighthouse became a very important part of maritime commerce during the 19th century. Isaac Morton Small, a local boy and descendant of the man who sold the property to the government in the first place, spent 67 years at Highland as a Marine Reporting Agent. It was his job to report which ships had passed the station enroute Boston. This alerted the Boston area merchants of what ships, and what cargo, was due and also provided them with a fairly good idea of when the ships would arrive. Highland also proved to be the perfect site for the Navy's first radio

station and early radio direction finding (radio beacon) experiments were conducted at this location.

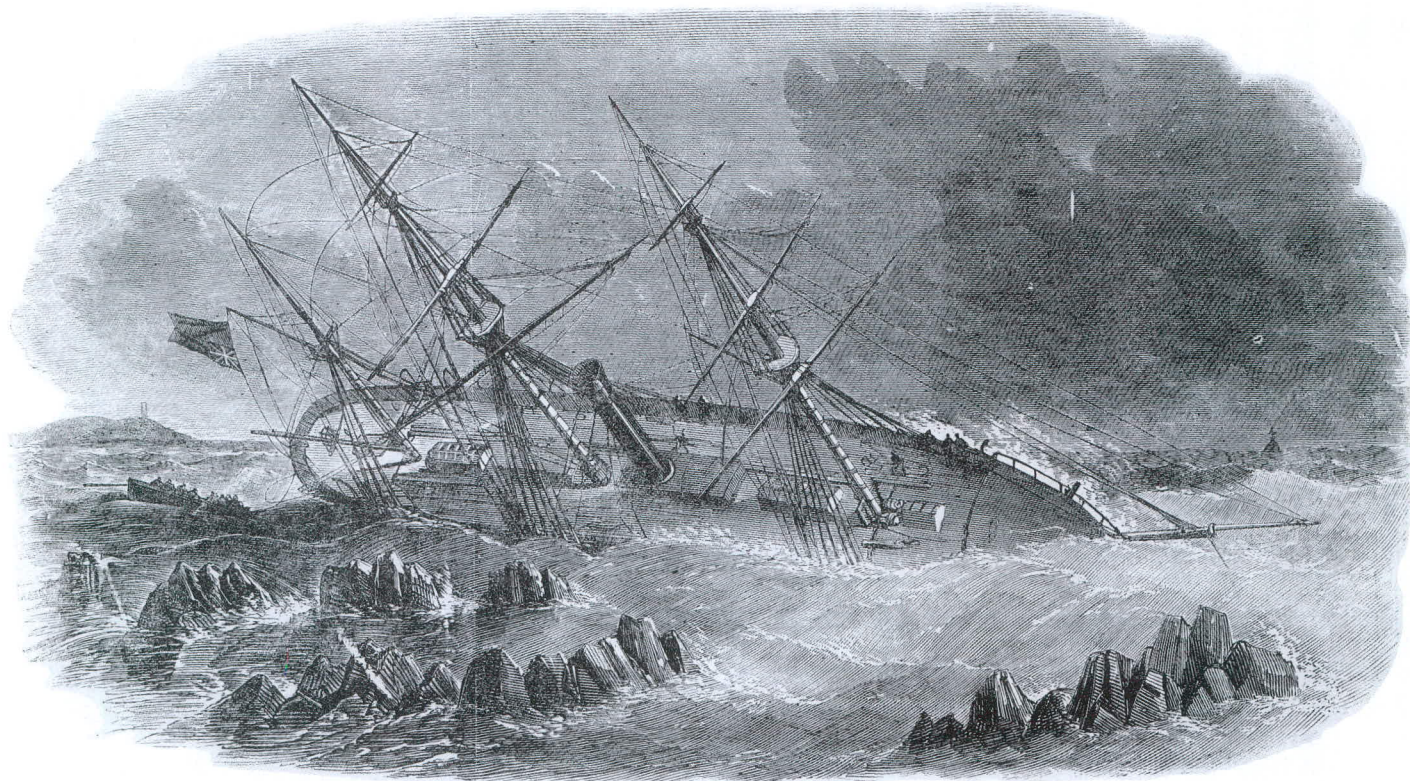
In his book *Shipwrecks on Cape Cod* Isaac Small describes the first wreck he witnessed. On a foggy afternoon in April 1852 the British bark *Josephus* broke up in the surf just below the lighthouse. Keeper Hamilton also wrote of the events of that wreck;

"...she struck on a sand bar about half a mile to the north of the Highland (Cape Cod) Light House and about 300 yards from the beach. The fog was very thick at the time and during most of the afternoon. Immediately after information was communicated to those in the vicinity of the Light House and circulated in this part of the town quite a concourse of people assembled on the shore to witness the disaster and render all possible aid. At this time the sea was running so high it was deemed impossible to board her. I was almost the first one down on the shore opposite the wreck and return immediately after the rockets of the Humane Society (ed. — forerunner of the U.S. Life Saving Service). I had the life preservers also carried down. I was asked for the boat that belong to the government. I immediately

gave it to them with the intention if the rocket carried the line over the vessel it could ply between the vessel and shore. A rocket burst, that created more excitement. The boat was then hauled down and J. Collins & D.H. Cassidy got in to the boat and pulled for the vessel. When about 15 yards from the ship (it capsized). The boat being capsized they were drowned after clinging to the boat for a few minutes. While some of the men were preparing to fire the rocket others went for the life boat which was of the distance of a mile from the wreck...The tide coming in the sea being very rough and growing more rough every minute it was not deemed safe to launch her so all hope of saving those on the wreck was lost at this time!

It commenced growing dark. Fires were kindled that those on the wreck might be assured that we had not left them. We knew that they had not perished for we could distinctly hear their cries so heart rendering.

At 10 o'clock I left in company with Rev. Mr. Lord to trim my lamps for the night and immediately after attending to my duties Light House keeper we returned to the



scene...we found one of the unfortunate seaman named George Chetney on his knees side of the fire for he could not stand. We hastened down in the direction he pointed and found one named John Jasper. He had crawled from part of the wreck (ed. — which came ashore) toward the fire to a bank of sand about three feet high but was so exhausted that he could not climb up on it and so exhausted he could not speak. Neither of them had any hats. John no boots and only one sock...When we arrived about 2 hours after going down to the wreck we got them into the house by the fire. Exchanged their wet clothes for some warm and dry ...Mrs. Hamilton gave them some warm refreshments and they were put to bed. In the morning the family physician was called to John and he seemed quite feverish. His hands and feet continued to be much swollen. Unable to sit up for two days though continued to improve (and gave this account).

'The vessel struck on the bar about 3 o'clock P.M. immediately after the vessel grounded and had wore around a heavy seas struck her on the starboard side carrying away the masts...another sea came and took away both long boats...The deck then gave away from the stern to the foremast. Then the main and mizzenmast went overboard. The larboard side fell in on the iron. The men at this time were up in the fore rigging. (After) The third or fourth sea she broke apart altogether. Fourteen men were washed off. The two remaining ones were providentially nearer the stern and after regaining their hold by endeavoring to make themselves fast to this piece of wreck they were however washed off two or three times but were fortunate enough to regain their hold. The forerigging became entangled in the freight and left them one hour and half. Then a heavy sea cleared the rigging.' They came directly ashore nearly opposite the light on the beach. Of the men that were lost (trying to reach the wreck) I will add that Mr. Collins was 47 years of age. He leaves a wife and three children. Mr. Cassidy was 23—he leaves young wife. He had been married only a few weeks.'

The rescued Englishman John Jasper returned to the sea and later as the Cap-



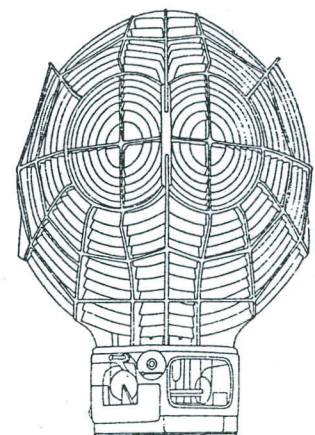
Cape Cod Lighthouse in the 1950's. Note the eroding cliffs in the foreground. Official U.S. Coast Guard photo.

tain of a trans Atlantic liner he would dip his flag to Keeper Hamilton when the ship passed the Cape Cod Lighthouse.

The first Cape Cod Lighthouse tower suffered the same fate as numerous other east coast stations, erosion. Crumbling cliffs, and a continent that is slowly tilting into the Atlantic, have taken their toll on several towers on Cape Cod and the nearby islands. Cape Henlopen, NJ succumbed in the 1920's and Great Point Lighthouse, on Nantucket, most recently was destroyed by Mother Nature. Southeast Lighthouse on Block Island and famous Cape Hatteras are two presently threatened by erosion. In 1857 a new 66 foot tower costing \$15,000 was constructed 600 feet back from the original 45 foot high structure, which was razed upon completion of the present tower. The new tower also received a 1st order Fresnel lens which displayed a fixed characteristic. The single oil lamp was equipped with four concentric wicks and was probably fueled by lard oil. Three keepers were assigned to the station. Head keeper Horace Hughes received \$500 yearly and his two assistants, James Small and Thomas Kenny, \$300 each.

Mariners found the fixed characteristic woefully lacking and for the remainder of the century a rising tide of criticism from pilots and ship captains was leveled at the Lighthouse Service. They complained that the characteristic was not distinctive enough, that it resembled a ship's masthead light from a distance. Finally in 1899 the Boston Chamber of Commerce persuaded the Lighthouse Service to act.

In October 1901 a new 1st order revolving lens, producing a ½ second flash every 5 seconds, replaced the old optic. In 1932 a 1,000 watt electric lamp was installed, producing a beam visible 25 miles at sea.



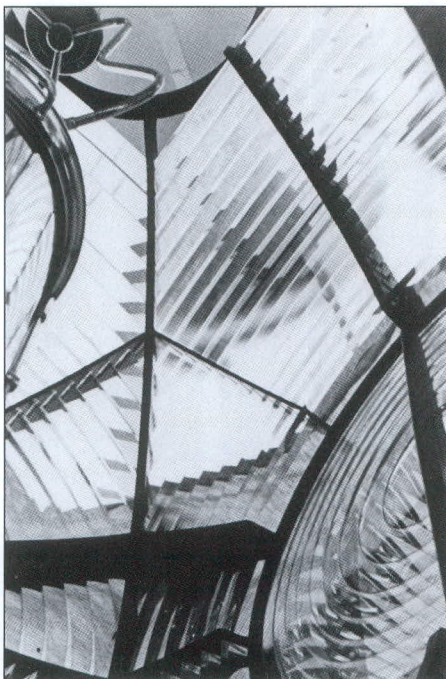
A revolving first order Fresnel lens is a giant beehive of hand polished glass prisms set in a brass frame. As it slowly rotates, day or night, it produces an almost audible twinkling sound as the brass sparkles and reflects, and the prisms glint in the sunlight or, at night, concentrate the light of the lamp into solid beams of light. Perhaps Alan Stevenson, a member of the famous Scottish family of lighthouse engineers best describes the lens in his almost lyrical statement;

“Nothing can be more beautiful than an entire apparatus for a light of the first order. It consists of a central band of reflectors...below it are six triangular rings of glass, forming by their union a hollow cage...of polished glass. I know of no work of art more beautiful or credible to the boldness, ardor, intelligence, and zeal of the artist.”



Keeper William A. Joseph who served at the Cape Cod station from 1923 to 1947. Photo courtesy of William E. Joseph.

Millard Tibbetts of Orleans, MA vividly recalls his boyhood at the lighthouse. In 1912 his father, Fred, was transferred to the Cape Cod station from Spectacle Island Lighthouse. He spent the next 26 years at Highland as Assistant and then Keeper. During his first year central heat was installed. They had a ration of 7 tons of coal to last the entire year, regardless of the severity of the Winter.



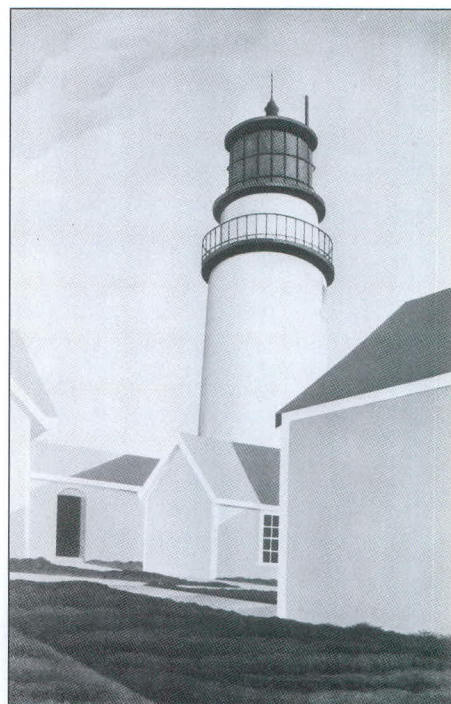
Inside the Cape Cod Lighthouse 1st Order lens. Photo courtesy of William E. Joseph.

Millard recalls that it was a fine place to grow up. During the Summer the nearby Highland House was always full of guests. Then, too, there were the families of the other keepers and radio station personnel. Ed Larkin Small had a whole passel of sons and daughters just down the road. Summers were filled with fishing, clam digging and swimming. But the Winters were far less exciting. The children walked two miles to school in North Truro and the most exciting event of the day was the arrival of the train.

Millard Tibbetts, like many of the other children before and after his time at the Cape Cod Light Station absorbed something of the meaning of the great crystal lens around which his life rotated. It stood, he thought, for something strong and benevolent, a symbol of power. And in 1919, after seven years living at his fathers Cape Cod station young Millard went to sea.

The giant classical lens continued to serve the mariner making it's nightly rounds until the early 1950's when it was replaced by a set of revolving aero beacons, a far less inspirational, but more efficient optic than the crystal jewel that had served so well for so many years.

After the Cape Cod lighthouse was constructed at Highland other lighthouses were built along the Cape, and like the Cape Cod Lighthouse they have since been automated. Today a Coast Guard officer and his family reside in the quarters, along side the crumbling cliffs that once again march toward the tower. They live beneath the flashing light that watches, blindly, the ships that pass in the night.



HIGHLAND LIGHT (Cape Cod) 1929 by American Artist George C. Ault (1891-1948). Courtesy of the Fine Arts Museums of San Francisco, gift of Max L. Rosenberg.

The author, Captain Admont Clark (USCGR-Ret.), spent 14 years teaching English and History at the Mass Maritime Academy at Buzzards Bay, MA. For the past 27 years he has been teaching English at Cape Cod Community College. He and his wife reside in Dennis, MA.

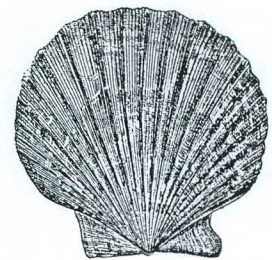


HIGHLAND LIGHT, CAPE COD.

Above—the Original Cape Cod station prior to 1857.

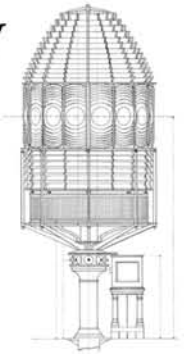
Right—The Station at the turn of the Century. Post Card courtesy of the William Vale collection.

Below—Cape Cod Lighthouse circa 1987. Photo by Keeper Elliott Tayman, Flushing, NY.





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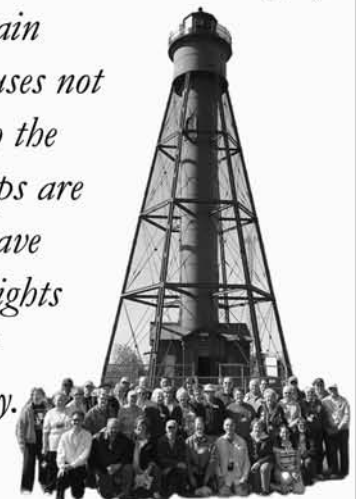
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Tincum Lighthouse, NJ