Cape Hatteras!

by Wayne Wheeler

A long and very thin strip of land stretches south 175 miles along North Carolina's eastern shore. This barrier island, which is actually a series of islands, is known as the Outer Banks. These barrier islands migrate, constantly changing shape as they are affected by storms, ocean currents and even wind. During heavy winter storms the area can erode, only to accrete during the summer months.

The Outer Banks is separated from the mainland by broad, shallow sounds and are occasionally breached by narrow inlets which open and close due to storms. The Outer Banks hang down the body of the North Carolina coast like a left arm with it's elbow poking out into the Gulf Stream. That elbow is known as Cape Hatteras.

About 10 miles off-shore is a shallow sand bar known as the Diamond Shoals. The powerful Gulf Stream flows north past the east side of Diamond Shoals and collides with the south bound remnant of the Labrador Current. This collision causes constant turbulence off Cape Hatteras and has created this shifting mass of underwater sand bars, which stretch eastward into the Atlantic for fourteen miles.

For many years, sailing ships seeking to escape the turbulent currents of the Gulf Stream, sailed between the shoals and the mainland and often into harms way. The shifting Diamond Shoals, a loss of wind or sudden storms, caused a great many vessels to either run aground on the shoals or on Cape Hatteras itself. The area became known as the Graveyard of the Atlantic.

To the Senate and the House of Representatives, United States

October 27, 1791

Gentlemen of the Senate and of the House of Representatives:

I have received from the governor of North Carolina a copy of an Act of the General Assembly of that State authorizing him to convey to the United States the right and jurisdiction of the said State over one acre of land in occacock [ed. now spelled Ocracoke] Island, and ten acres on the Cape [ed. Hatteras] Island within said State, for the purpose of erecting light houses thereon, together with the deed of the Governor in pursuance thereof ... which original conveyances contain conditions that the light house... on the Cape shall be built before the 8th day of October 1800. And I have caused the several papers to be deposited in the Office of the Secretary of State...

Geo. Washington, President

BUT CONGRESS apparently didn't get the message until Alexander Hamilton, in a report to the Senate in 1794 stated, ". . . having for a long time entertained an opinion that a light-house on some part of Cape Hatteras would be an establishment of very general utility to the navigation of the United States." and he advised Congress, ". . . to erect a light-house of the first rate."

"AN ACT to erect a light-house on the head-land of Cape Hatteras, and a lighted beacon on Shell Castle Island, in the harbor of Ocracoke, in the State of North Carolina.

Sec 1. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that as soon as jurisdiction of so much of the head-land of Cape Hatteras, in the State of North Carolina, as the President of the United States shall deem sufficient and most proper for the convenience and accommodation of a light-house, shall have been ceded to the United States, it shall be the duty of the Secretary of the Treasury to provide by contract . . . for building a light-house thereon of the first rate, and furnishing the same with all necessary supplies, and also to agree for the salaries or wages of the person or persons who may be appointed by the President for the superintendence and care of building said light-house: and the President is hereby authorized to make said appointments. That the number and disposition of the lights [ed. lamps] in the said light-house shall be such as may tend to distinguish it from others, and as far as practicable to prevent mistakes in navigation . . ."

Approved May 13, 1794

The Graveyard of the Atlantic

Although the Act authorized the construction of the Cape Hatteras lighthouse and one at Shell Castle Island, it did not mention funds. Three years later another Act, of March 16, 1795, did approve $44,000, "For making good a deficiency arising from the balance of monies of various appropriations . . . for erecting a light-house on the headland of Cape Hatteras and a lighted beacon on Shell Castle Island, in the harbor of Ocracoke. . . "

On May 7, 1800 an Act stated, . . . "For the payment of contracts entered into for building of a light-house on Cape Hatteras and a beacon on Shell Castle Island, (the balance of former appropriations being carried to the credit of the surplus fund,) thirty-five thousand six hundred and ninety-eight dollars." Most U.S. Light Lists state that the Cape Hatteras light station went into service in 1798. Blunt's American Coast Pilot of 1800 states, "On the pitch of this Cape [which is low sandy land] a light-house was erected in 1799, which is painted white, and bears NNW from Cape Hatteras Shoal. . ." However, various sources, including appropriations, tend to make the operational year 1803.

The May 1800 Act appropriating additional funds for construction would indicate that the structure wasn't completed in that year. F. Ross Holland in his book *America's Lighthouses* states that 1803 was the year the station went into operation. Perhaps Blunt was anticipating that the lighthouse would be finished in 1799 when he updated his Coast Pilot. Government documents state the first keeper lighted the lamps at the Cape Hatteras lighthouse on December 29, 1802, for all intents 1803 could be considered the first year of operation. Construction had started back in late 1799, but the government had difficultly in obtaining a contractor to build the station and there was some dispute on the purchase of the land. Eventually Henry Dearborn was awarded the contract. He was a man of all seasons having already served as a Congressman and would eventually become Secretary of War, minister to Portugal, collector of Customs at Boston and a Major General in the Army. Dearborn, Michigan is named after him. The contract he was awarded included the construction of the Shell Castle Island beacon.

From the office of the Commissioner of Revenue to the Sec. of Treasury, October 8, 1802:

Sir,
Enclosed is a copy of General Dearborn's letter. . . requesting a further payment of $1,600 on account of his Contract for erecting light-houses on Cape Hatteras and Shell Castle island. By referring to the report which accompanied my letter of the 14th Ultimo, you will observe the progress of the works at the last inspection. The sum which General Dearborn will be entitled to at the completion of his contract is $39,650 viz: $38,650 for the light-houses and $1,000 for placing stone around and securing the foundation of the Shell Castle Beacon. He has already received on account $37,700 for which he stands charged on the books of the Treasury.

Wm. Miller, Commissioner of Revenue

Sir,
I am informed that W. Wallace of Shell Castle has a quantity of porpoise oil of a suitable quality for lighting lamps. If you are able to ascertain that this article is equal to Spermaceti oil . . . I wish you would make me acquainted with W.

Wallace's terms for 500 gallons or upwards. If the light-house is finished and you are satisfied that the oil in W. Wallace's hands will answer, I wish you to obtain a temporary supply on the best terms in your power. The price at which best Spermaceti oil was quoted at Nantucket is as follows: Winter preferred 97 cents, Summer 83 cents in full bound casks. I wish for early information that I may have a supply shipped from eastward, if the oil which may be had in your neighborhood does not answer.

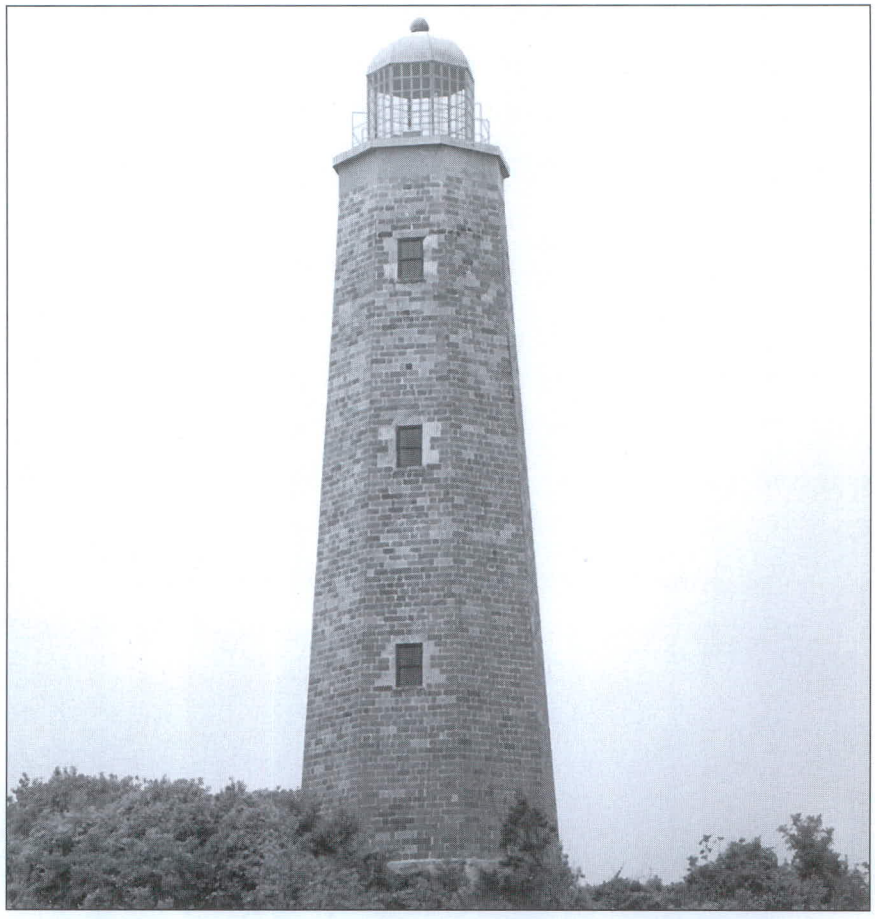
Wm. Miller, Commissioner of Revenue

After a slow start, work proceeded apace and the lighthouse was finished in August of 1802. However, the lighting apparatus didn't arrive until December. The completed station consisted of an octagon sandstone tower some 90 feet high, topped with a ten foot high 'bird cage' style lantern. It was situated on a stone foundation 13 feet deep. A two story dwelling, with cellar, was constructed for the keeper along with a 20 by 12 foot oil vault containing nine cedar cisterns, each with a capacity of 200 gallons. The tower contained wooden stairs and several landings. An early visitor described the light-house as, ". . .a handsome, plain edifice well calculated for the purpose, and an excellent piece of masonry." But, also ". . . an architectural Eye Sore" apparently because two types of stone were used in the construction.

September 26, 1803

Sir:
The period at which the respective salaries of the keepers appointed to Cape Hatteras and Shell Castle Island light-houses are to commence was pointed out by the letter of which I had the honor of writing you in October 1802, these compensations and all contingent expenses appertaining to the Establishment are to be paid by the Superintendent, who is to render accounts quarterly, charging the usual 2 1/2%.

Wm Miller



The original Cape Hatteras tower probably resembled the original Cape Henry tower (above) only taller. The Cape Hatteras tower was 90 feet from the ground to the base of the lantern room, while the Cape Henry tower is 72 feet from the base to the lantern. Most of the early towers resembled this one; constructed of cut stone, octagon in shape and sporting a lantern with small panes of glass and a hand hammered copper dome. Photo courtesy of Joseph Kiebish.

November 30, 1803

Sir:
I have been honored with your letter of the 29th Ultimo and am happy to find that the lights at length are raised on Cape Hatteras and Shell Castle Island. As much of their utility will depend on their regularity in cleaning the lanterns and keeping them lighted at all proper hours of the night, those points ought to be particularly impressed on the recollection of the keepers.

Wm Miller

Extract from a letter to the Commissioner from Superintendent Treadwell

Sir:
I am of the opinion that it will take 150 tons of stone to enlarge the work around the foundation of the beacon and keeper's dwelling and make it of the full extent proposed by the plan which you sent me, and I can find no person disposed to collect and place it on the spot, and in a manner proposed, for a sum less than three dollars and fifty cents a ton. I do not, however, think that there was so much stone wanting to finish the work when General Dearborn's agent left it, or, in other words I am of the opinion that some has been taken away from the eastern part of the foundation, probably to the quantity of 20 or 30 tons. The lantern of the beacon is now finished and everything about it is complete except that there is no stove yet placed in it, nor is there any in that at the Cape. There are some repairs wanting about the windows of the beacon which have been broken which I have directed to be repaired and that the iron railing be painted, for I found it

wanting very much both there and at the Cape.

I have mentioned above that there is no stove yet procured and placed in the lantern at the Cape. That is the only thing wanting there to close the contract, excepting a little coppering, which is wanted on the floor of the lantern, and which I have offered to General Dearborn to procure and have done for him, and excepting for a frame and door for the cellar, which W. Hobart (the contractor's agent) omitted to engage a person to do when he went away, or if he did, it has been neglected. Though, however, it is of little consequence, for the keeper I fancy would make little use of it more than what he now does, even were the doors on.

Samuel Treadwell

Letter to Samuel Treadwell, Superintendent of the Cape Hatteras and Shell Castle Island lighthouses.

October 11, 1802

Sir,
The President of the United States hath appointed Adam Gaskins to be keeper of the Light-house at Cape Hatteras and John Mays keeper of the Beacon on Shell Castle Island. The salary of the former is priced at 333.33 dollars per annum and that of the latter 250 dollars per annum from the time that they respectively take charge of the lights.

Tench Coxe, Commissioner of Revenue

Keeper Gaskins assumed his position on October 11, 1802 and lighted the beacon for the first time on December 29, 1802. Soon thereafter the tower was inspected and found, "... to be suitable accept for minor omissions. On February 2, 1803 Adam Gaskins was replaced by Joseph Farrow. The lighthouse was severely damaged during a hurricane which struck the barrier islands on August 22, 1806. An unidentified local citizen wrote, "The wind blew with such violence as to occasion the tide's rising two or three feet into several homes, and it was expected that a few hours' continuance of the gale would prove fatal to every person there. The wind was so astonishing severe as to twist sturdy oaks, of the thickness of a man's body, from their roots and to scatter the limbs in the air to a great distance . . . The Light House on Cape Hatteras, received such injury about the Cap [sic] and Lanthern [sic], as to be incapable of being lighted up for the present."

During January 1809, Keeper Joseph Farrow accidently set the lighthouse on fire when oil ignited the wooden portion around the lantern and burned the glass before it was extinguished. During the War of 1812 the lighthouse was damaged by enemy action, extinguished and not relighted until October 1813 at which time it was reported that the keeper, "... has been long moved away." In the year 1816 several suspicious ship wrecks occurred around Cape Hatteras and there was talk that moon-cussers or wreckers were causing the disasters. Several ship masters claimed that the Cape Hatteras light would suddenly go out, and ships which had been using the beacon would run aground. In June, 1817, a complaint was issued against Keeper Farrow:

This complaint against the keeper of the lighthouse at Hatteras is loud and deep, for several ship masters and others of respectability and veracity are ready to depose that the light-house at Hatteras particularly is very often without light in the most tempestuous and dangerous weather and that it is frequently lighted and kept bright for two or three hours at the beginning of the night and then permitted to go out entirely which makes it worse and more dangerous than if there was no light at all.

The keeper, Mr. Farrow, being said to be a commissioner of wrecks under the state laws gives room for suspicions and reflections on him probably unfounded be this as it may, (and I confess I think from the report of friends of Mr. Farrow that he would not intentionally be guilty of so dreadfully criminal an act as they speak very favorably of him) still the great number of vessels cast onshore and of course property lost in the course of last fall and winter and this spring call loudly and imperiously for some immediate radical change for the prejudices and doubts existing against him as keeper of that light-house, that there is something wrong somewhere.

Captain William Bell

That the author of that letter was out of work, had a large family and was himself petitioning for the position of keeper of the Cape Hatteras lighthouse may have had something to do with his statement.

Keeper Farrow did admit that the light occasionally failed. He blamed the poor quality of oil which he was provided as the reason the light went out after a few hours. There is some reason to suspect poor oil as the person furnishing the supplies to our light stations was none other than Winslow Lewis, a person of questionable character. However, had keeper Farrow been alert in the lantern during the night he could have relighted the lamps.

The complaints continued and became so strong that on March 8, 1821 the Fifth Auditor of the Treasury, Stephen Pleasonton, asked the local Collector of Customs to keep an eye on the keeper. On April 4, 1821 Joseph Farrow was replaced by one Pharaoh Farrow. It is not known if they were related.

In 1820 Stephen Pleasonton, the Fifth Auditor of the Treasury, was placed in charge of lighthouses. During his tenure, the number of light stations and other aids to navigation grew exponentially. As our mariners sailed to foreign ports, complaints regarding our system of lights, as opposed to the brilliant French system, also grew. Congress investigated our system in the 1830's and 1840's but nothing was done to rectify the situation. Finally, in 1850-51 an ad hoc committee (called the Lighthouse Board) was established to thoroughly investigate the system. As a result of their investigation, the Board replaced Pleasonton in 1852.

The 1851 Report of the Lighthouse Board to Congress stated,

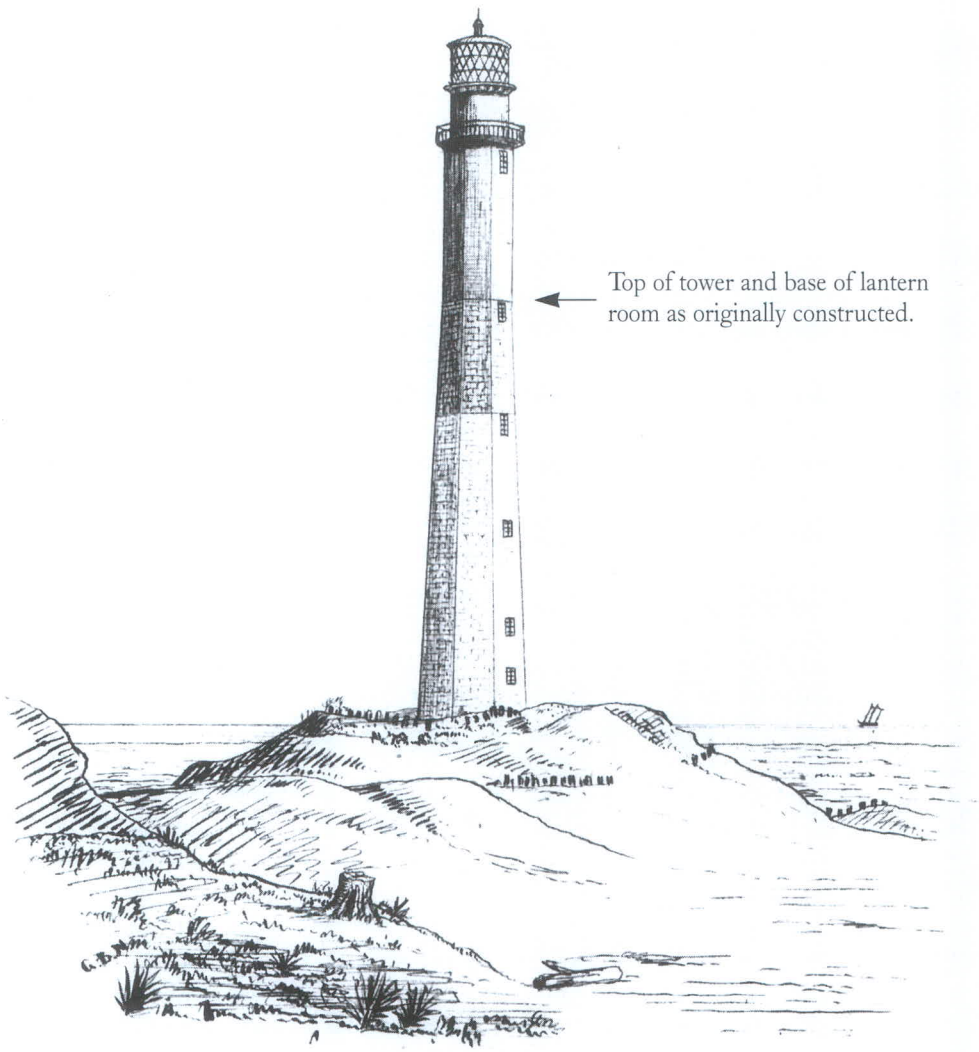
"The large number of shipwrecks and the vast amount of life and property lost annually on this coast should be sufficient reason for erecting and maintaining a first-class sea-coast light on some eligible site in this vicinity. The Body's

Island light is badly located, and insufficient in power and range to subserve fully the requirements of commerce and navigation. vessels bound south from the eastward run to make this coast, with the view to avoid the opposing currents of the Gulf-stream, and at the same time to avail of the favorable currents within the limits of the cold wall bounding the Gulf-stream. . . therefore it becomes the more important to light well the entire coast from Cape Hatteras to Cape Henlopen [Delaware].

"There is probably no light on the entire coast of the United States of greater value to the commerce and navigation of the country than this. That it is not such a light as any seacoast light should be, is too apparent to require much argument; while its special requirements, having reference to the Gulf-stream, the currents and counter currents which sweep past it, and the very dangerous shoals, extending to the distance of ten nautical miles from the light, all tend to make it one of no ordinary importance.

"Vessels, propelled by both wind and steam, run for soundings off this cape; and it is of the first importance to navigators wishing to make quick passages, that they should see this light in going south. At present it is of very little use, in consequence of its limited range. Navigators do not, as a general rule, rely upon it sufficiently to warrant the running of it. It is fitted with fifteen lamps and twenty one inch reflectors, having an elevation of about ninety-five feet, which would give it a range, under favorable circumstances, of fourteen and half nautical miles, provided the apparatus for illuminating was of the best description.

"There is no single light on the coast believed to require renovation more than this does. An elevation of one hundred and fifty feet, and a first class illuminating apparatus, are imperiously demanded, and without any unnecessary delay."

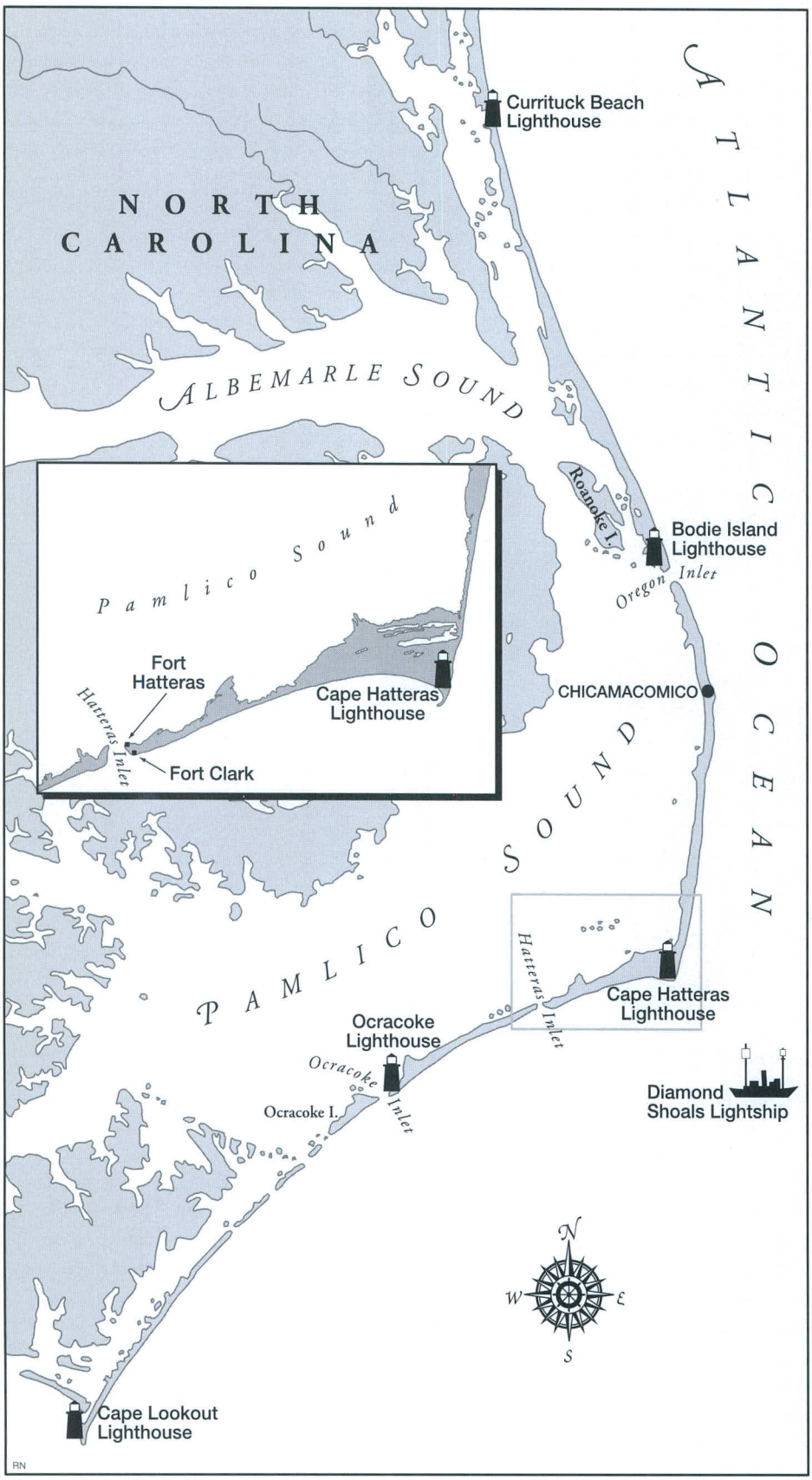


Old Tower Cape Hatteras, North Carolina
October 24, 1870
View from the West

Height of Sand Hill above the general level of the Beach = 20 feet
From base to top of white markine = 70 feet
From base to focal plane = 140 feet

Engineer Office 5th Lighthouse District
November 9, 1870

Sketched by George B. Nickolson
Assistant Engineer 5th Lighthouse District



The Board's own investigation and opinion of the Cape Hatteras Lighthouse (along with other stations along the east coast) was strengthened by numerous replies the Board received from questionnaire sent to ship masters: Among them:

July 1851

Sir:

. . . I will proceed to speak of Hatteras light, the most important on our coast, and, without doubt, the worst light in the world. Cape Hatteras is the point made by all vessels going to the south, and also coming from that direction; the current of the Gulf-stream runs so close to the outer point of the shoals, that vessels double as close round the breakers as possible, to avoid its influence. The only guide they have is the light, to tell them when up with the shoals, but I have always had so little confidence in it, that I have been guided by the lead [ed. lead line, a device used to determine depth of water]. Without the use of which, in fact, no vessel should pass Cape Hatteras. The first nine trips I made I never saw Hatteras light at all, though frequently passing within sight of the breakers; and when I did see it, I could not tell it from a steamer's light, excepting that the steamer's lights are much brighter. . .

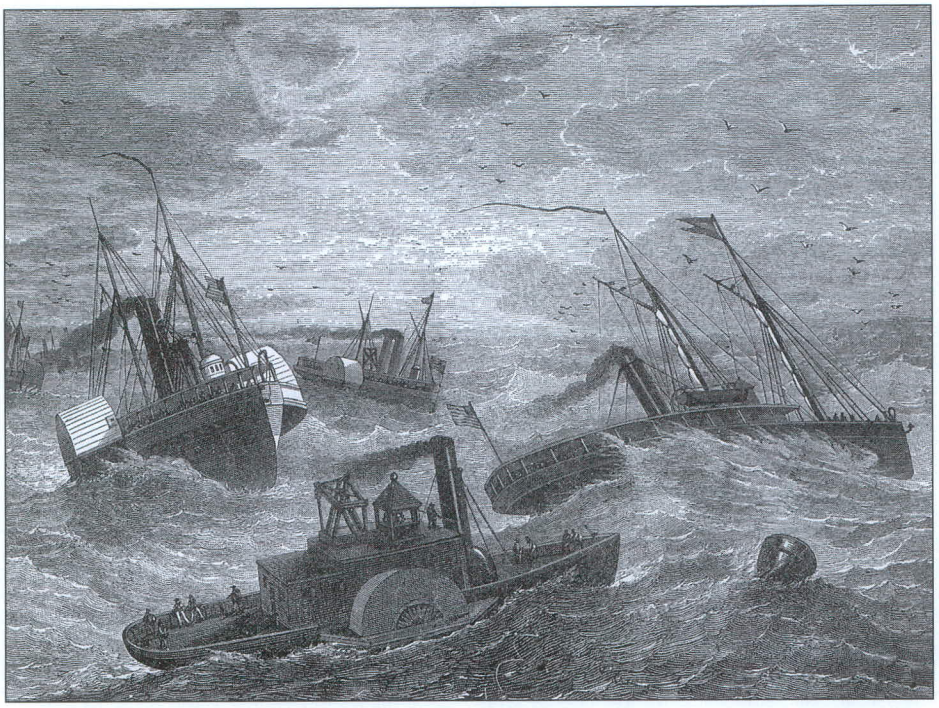
Lt. David Porter, USN Commanding the mail-steamer *Georgia*:

Dear Sir:

". . . The lights on Hatteras, Lookout, Canaveral and Cape Florida, if not improved, had better be dispensed with, as the navigator is apt to run ashore looking for them. . ."

H.J. Hartstene, Commanding the U.S. mail-steamer *Illinois*

The Board took action and in 1854 removed the old style "bird cage" lantern (a tall, crude structure with a hammered copper dome and small glass panes, about 9 by 12 inches). The tower was elevated to 150 feet, a new "modern" lantern installed and the old reflector system replaced by a lst Order lens which produced a flashing white light every 15 seconds. It could be seen for 20 miles. The cost of the project was $15,000.



The Union fleet crossing the Hatteras Bar. Old Harpers Woodcut.

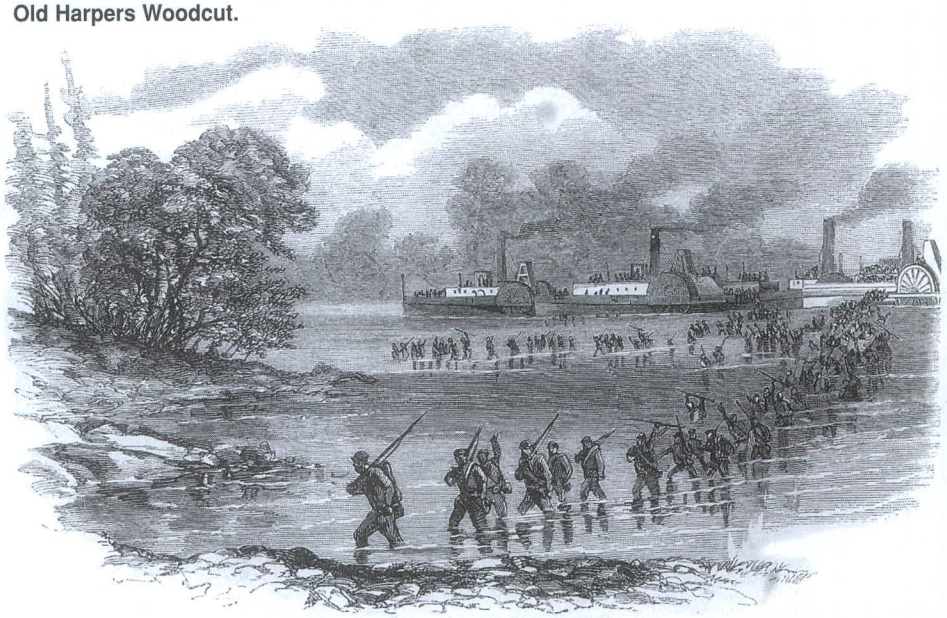
Civil War Comes to the Outer Banks

Shortly after North Carolina seceded from the Union, the Confederate side-wheel steamer *Winslow*, equipped with one 32 pound cannon, was sent to Hatteras Inlet to capture enemy shipping. Three other small vessels joined the *Winslow*, but the Confederate naval command realized their small Confederate ships would be no match for the Union vessels which were sure to come in the near future. To protect the area, a series of forts were constructed. Two of them, Fort Hatteras and Fort Clark, were constructed on the east side of Hatteras Inlet. At that time it was the only inlet along the Outer Banks which could admit large ocean going vessels.

Work on the fortifications began early summer 1861 and were finished by that fall. Fort Hatteras was equipped with twelve 32 pound, smooth bore guns and by late August had received a 10 inch rifled gun. Fort Clark, on the ocean side of the inlet, was armed with five 32 pounders and a few smaller guns.

A small Union fleet under command of General Butler arrived at the Hatteras Inlet in August, 1861. After a number of skirmishes and heavy bombardment of the forts, a landing party was placed ashore. Eventually, both forts were taken and the Union forces strengthened the fort by adding more powerful guns. Several barges loaded with rock were sunk in the inlet to prevent the Rebels from ever using it. A detachment of 600 men was sent north, past the lighthouse, to thwart a rumored Confederate assault from the north. They made camp at Chicamacomico. Some misinformation obtained by both sides resulted in the Union Commander, Colonel Hawkins, of Fort Hatteras and the Confederate Commander, Colonel Wright, of Roanoke Island both converging on Chicamacomico. The rebels sent their troops south aboard two small fleets of boats; one group was to land above the Union troops, which were encamped at Chicamacomico, and the other below them, cutting off any escape.

Once they had taken this force the plan was to march south, destroy the Cape Hatteras lighthouse, and then continue south and retake the forts. The Union troops, a detachment from Indiana, engaged the Confederate troops, which landed north of their position, as they waded ashore from their boats, but seeing the other Confederate vessels heading past them it became obvious they would be caught in a pincer movement; entrapped. Panicking, they started to retreat south toward Fort Hatteras, some 35 miles away. This was the beginning of what would later be referred to as the Chicamacomico Races. The sun was shining on the white sand beaches, heating the air like a furnace. The men had to march in heavy sand without water. Several of the troops faded, staggered and fell from the ranks onto the hot sand. Throughout the morning and afternoon, the troops fled before the advancing Georgian troops. One of the Union soldiers remembered that ". . .hunger was nothing in comparison with thirst. It was maddening. The sea rolling at our feet with nothing to drink. . . soon the enemy's vessels [out in the sound] were now nearly opposite, steaming down the sound to cut off our retreat. . ." By late afternoon the Confederate fleet had passed well to the south of the Union troops and attempted to land, but they grounded far out in the sound and the Confederate force, unable to reach shore, was not a factor.



Confederate forces landing above the Union forces near Chicamacomico. Harpers woodcut.

Finally, at midnight, the Union troops reached the Cape Hatteras lighthouse. Here, they found water and using the lighthouse as a fort, encamped for the night. The Confederates camped to the north, between Kinnakeet and the lighthouse. Upon learning that the second Confederate group had not effected a landing, those ashore started back north the next morning. Meanwhile, Union troops from Fort Hatteras, reached the lighthouse that morning and joined the Indiana troops to pursue the fleeing Confederates. Over the next several months, the Union forces managed to take Roanoke Island and secure the Outer Banks for the remainder of the war.

Occasionally a small band of rebels would engage in hit and run raids on some portion of the Outer Banks. The Bodie Island and old Cape Lookout towers were destroyed and the newer Cape Lookout badly damaged. However, the Cape Hatteras tower survived. By the time the Union forces reached the lighthouse, Confederates had removed the lens and shipped it inland.

There have been many books written about the Cape Hatteras lens and the lenses of other southern lighthouses during the Civil War which state they were buried in the sand. The following letters written by a Confederate officer dispels that theory, at least as far as the Cape Hatteras lens is concerned.

[Washington, N.C. is a port at the head of Pamlico Inlet, some 90 miles by water from Cape Hatteras and Tarboro, NC is another city 40 miles inland.]

Tarboro, NC
March 23,1862

Sir:

I have to inform you that I have received the entire apparatus of the Hatteras Light at this point and placed in as a secure place as possible. The apparatus was removed some time ago and stored at the warehouse of Mr. John Meyers at Washington, NC who has brought it to this place and put it in my charge.

I would suggest that an agent be sent on immediately to attend to the packing and forwarding of the above, as the Federals are in force in Washington and they are after the private property of the parties who took part in sending it away if it is not returned, and intimated that force would be used to possess themselves of it at all costs. (Including) the destruction of the town of Washington, if the apparatus was not forthcoming.

The light fixture referred to, as you must be aware, is very valuable having cost several thousand dollars. Therefore I deem it important to apprise you of these circumstances in detail. Your immediate attention as herein requested will doubtlessly retain it to the Confederate States.

I am respectfully,
G.H. Brown

P.S. The probable cost of getting the fixtures to this point will be $90. The agent who is sent here to superintend the transportation of the lens should be provided with a voucher for his expenses.

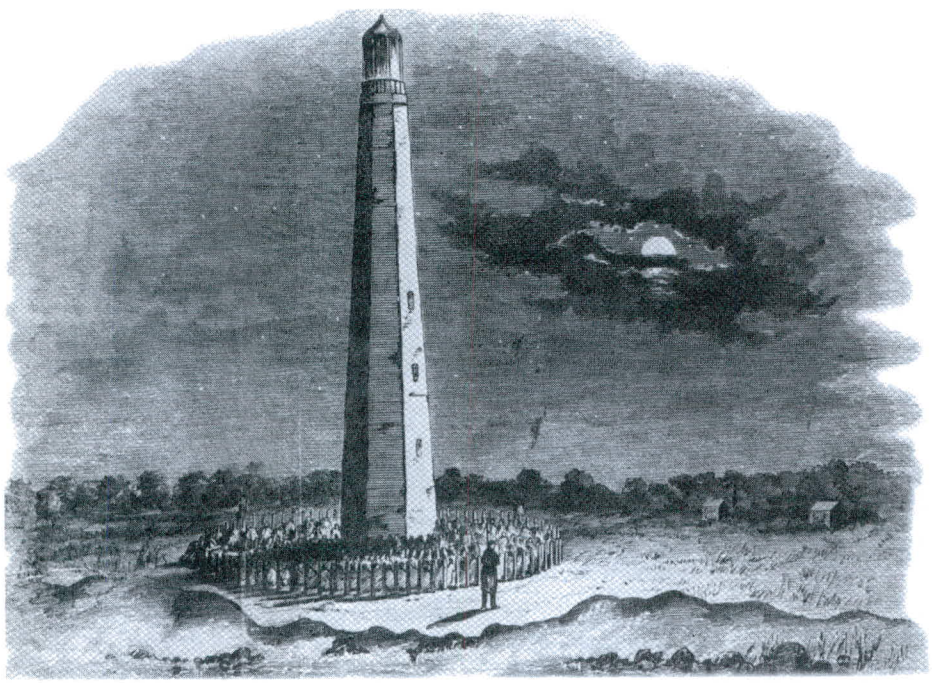
Tarboro, NC
March 27, 1862

Sir:

Your communication of the 24th ultimo by Mr. J.B. Davadge has been received, but I regret to have to say that Mr D has been unfit to attend to any kind of business since his arrival and has given little or no assistance or direction relative to the packing of the Lighthouse apparatus. I find that his habits are those of intemperance and although a delicate matter, I feel it my duty as an officer to furnish the department with the facts of the case. I have had the apparatus all packed as carefully as possible in cotton, and it is now awaiting transportation. I saw Mr. Davadge yesterday and remonstrated with him on his course, urging the necessity of having the apparatus removed to a point of safety as speedily as possible, and he promised to attend to it at once, but unfortunately to this date he has made no effort whatever for doing so. The expenses incurred to the packing of the apparatus, amounting to about $106, ... has been refunded by Mr. D. I can get a very responsible gentleman here to attend to the conveying of it to a place of safety in this state, free of any charge of his service, if you can furnish the means of transportation. It will require a large box car as there are about 45 boxes and some pieces of castings.

The place I would suggest sending the articles is in Granville County in this state on the Rail Road, where they can be stored at a small expense at a good warehouse. I would suggest therefore that a large box car be sent to this place at as an early date as possible. The enemy below this point are still threatening property, etc. if the apparatus is not delivered up. Your immediate attention will facilitate the matter.

Very respectfully
Your Most Obt. Servant
G.H. Brown



Union troops at the Hatteras Lighthouse. Division of Archives and History print.

The 1865 report of the Lighthouse Board to Congress states,

> "Immediately upon the close of the rebellion an experienced engineer was sent to those waters [North Carolina] to take change of the work of re-establishing the lights, etc. as the interest of commerce might be found to demand. A large quantity of illuminating apparatus, and other light-house material, which had been abstracted by the enemy, was recovered, and such portion as could be at once be made use of were so applied. . ."

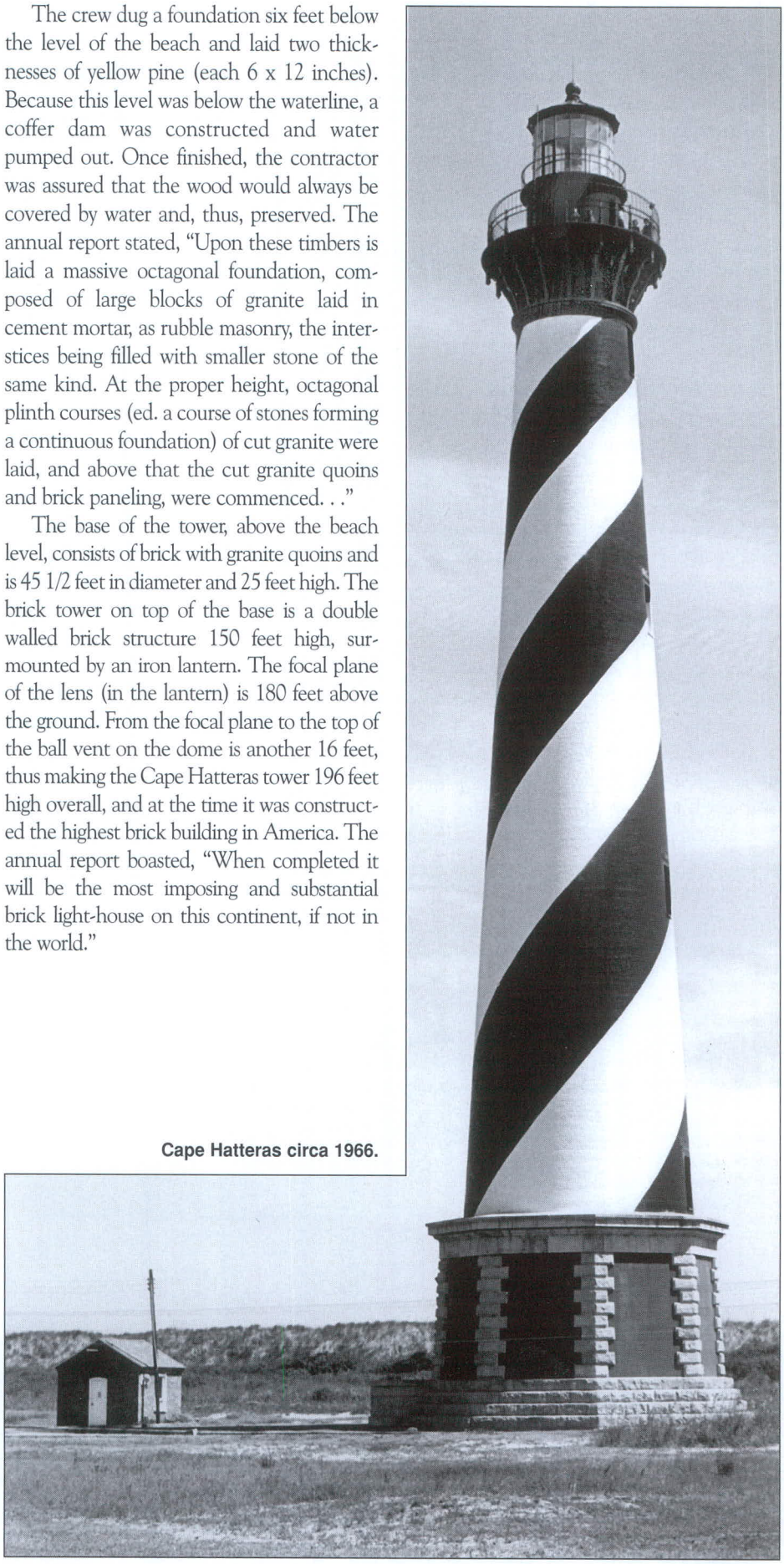
After the Civil War, the Lighthouse Service became concerned that the wooden staircase of the Cape Hatteras tower constituted a fire hazard. When the estimate to replace the stairs with a new iron staircase came in at $20,000, the government decided to rebuild the tower. On March 3, 1868, Congress appropriated $80,000 to construct a new Cape Hatteras light station. The work party, under the supervision of the District Engineer Col. J.H. Simpson and Foreman Dexter Stetson, arrived at the Cape on November 4 and constructed workmen's quarters with a mess room, a blacksmith shop, a storehouse for cement and other materials, two derricks and a wharf on the south side of the island, about 1 1/4 miles from the new station. A tram railway was laid from the wharf to the site. Two decked scows and one open one were procured to act as lighters between the supply vessels and the wharf.

A Baltimore company was awarded the contract to furnish one million "prime dark red" bricks at a cost of $12.35 per thousand. Other companies were selected to furnish the granite for the base and steps and the iron work. Work began immediately that fall. The new site was 600 feet from the old tower and at the highest elevation in the area. An ironic remark was made by the District Engineer, "The site is . . . above the highest level of the sea, and so far removed from the waterline as to render it safe from encroachments of the sea." Col. Simpson, who penned that remark, would be amazed at how close the waterline is to the tower today.

Transporting supplies to the site was a problem. The schooner *Ida Nicholson* sank in a gale, within sight of the Cape, losing more than 100,000 bricks. Another supply vessel, *F. Parker*, grounded at Nags Head losing 50,000 bricks. One of the lighters capsized in the sound dumping the granite for the foundation into the water.

The crew dug a foundation six feet below the level of the beach and laid two thicknesses of yellow pine (each 6 x 12 inches). Because this level was below the waterline, a coffer dam was constructed and water pumped out. Once finished, the contractor was assured that the wood would always be covered by water and, thus, preserved. The annual report stated, "Upon these timbers is laid a massive octagonal foundation, composed of large blocks of granite laid in cement mortar, as rubble masonry, the interstices being filled with smaller stone of the same kind. At the proper height, octagonal plinth courses (ed. a course of stones forming a continuous foundation) of cut granite were laid, and above that the cut granite quoins and brick paneling, were commenced. . ."

The base of the tower, above the beach level, consists of brick with granite quoins and is 45 1/2 feet in diameter and 25 feet high. The brick tower on top of the base is a double walled brick structure 150 feet high, surmounted by an iron lantern. The focal plane of the lens (in the lantern) is 180 feet above the ground. From the focal plane to the top of the ball vent on the dome is another 16 feet, thus making the Cape Hatteras tower 196 feet high overall, and at the time it was constructed the highest brick building in America. The annual report boasted, "When completed it will be the most imposing and substantial brick light-house on this continent, if not in the world."



Cape Hatteras circa 1966.

That November, extensive repairs were made to the old dwelling and a slough surrounding the house was filled in with soil and sand. The 1870 Report of the Lighthouse Board states, "The operations on this edifice progressed rapidly under the direction of the engineer of the district from the date of the last report to the 16th of June. By this time the entire portion of the brick work of the tower beneath the iron capital which carries the lantern was completed. All the window frames were set, and four flights of the iron stairway in position, and their landings arched. The work thus far has been of the most thorough character, the iron work furnished by the contractor is excellent, and the brick laid in the most substantial manner, each brick being completely embraced in the best kind of cement mortar, and each course as it was laid brought truly to the batter and leveled. The brick and mortar were of unexceptionable quality. The structure thus far gives the assurance that it will meet in every respect the anticipations of the Lighthouse Board."

By June, the construction force was ready to install the lantern. However all the castings were not finished and work was suspended, leaving only a skeleton force to protect the property. On September 10, 1870 the tender *Tulip* was dispatched with a work party to make preparations to install the lantern. The *Tulip* then towed two barges loaded with the lantern parts from the factory to the station. The last entry in the annual report for 1870 stated, ". . . the iron casing of the watch-room and lantern are now being placed, and it is expected that the entire height (180 feet to the focal plane) will be completed before the ensuing winter. This will be the highest brick light-house in the world."

The tower was painted white from the base [ed. we assume from the top of the 25 foot high brick and granite base] to 70 feet and then red to the lantern, which was painted dark brown. The present black and white spiral design [daymark] was applied in 1873. A lst order Fresnel lens was installed, which produced a flashing white light every ten seconds. Light lists in the 1870's state the light could be seen 20 miles to sea.

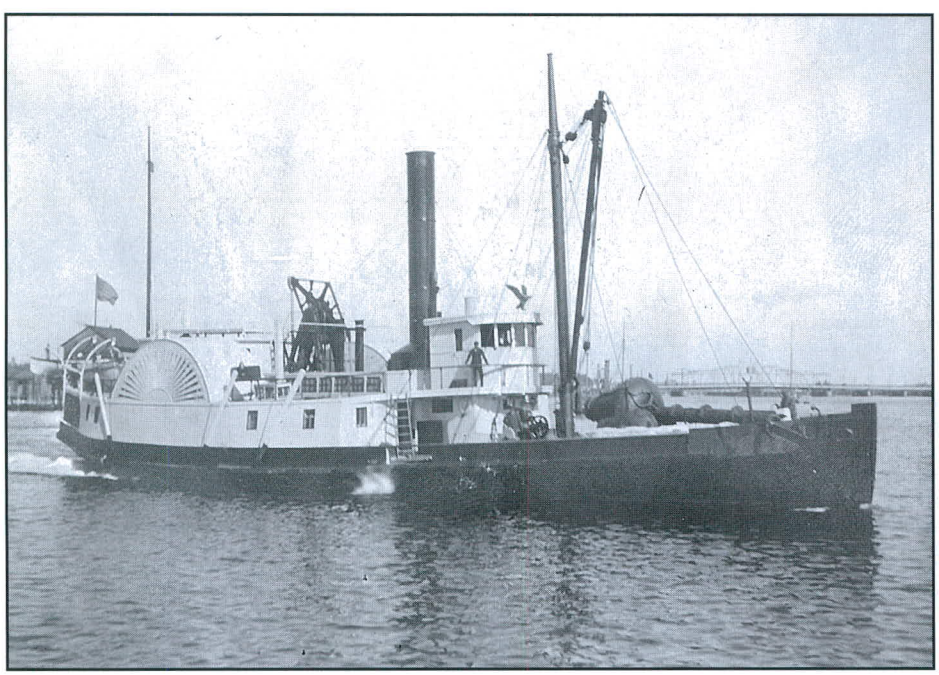
The lamp was lit sometime between September 17 and December 20. The tower became operational on December 16, 1870 and shortly afterwards the old tower, now useless, was blown up. The district engineer reported that, "three mines were fired almost simultaneously blowing out a large wedge on the side toward the beach and this old landmark was spread out on the beach a mass of ruins."

In 1854, a survey showed that the old Hatteras tower was 1,000 yards from the water to the east and 1 1/2 miles from the water to the south. By the time construction was started on the new structure the beach had begun to erode. In 1919 a report stated that the shore line had diminished to 300 feet from the tower.

In the 1930's the beach was almost lapping at the door of the tower. Efforts to stem the erosion with breakwaters or groins perpendicular to the beach proved futile. In 1935 the Lighthouse Service gave up and constructed a steel skeleton tower 2,400 yards back from the 1870 tower and installed a modern aero-beacon.

After the new tower went into operation, the Civilian Conservation Corps installed sand fencing in the area to stem erosion. The plan worked. The beach accreted through the 1940's and by 1949 the coastline was 400 to 500 feet from the tower. In 1949, the Coast Guard formed an agreement with the National Park Service, the owners of the tower, to relocate the modern aero-beacon to the old tower and removed the skeleton tower. Since then, the beach has eroded to the point that the lighthouse is in imminent danger of falling into the sea. Some would leave the tower where it is.

Perhaps it can be saved in situ, perhaps not. Some argue that the tower would lose it's historical fabric if moved. But the Lighthouse Service relocated several towers over the years and, in fact, constructed sectionalized, cast iron towers like Hunting Island in South Carolina and Cape Canaveral in Florida, so they could be disassembled and relocated if erosion threatened them. Both of those towers were moved out of harms way. Additionally, in recent years the Block Island S.E. lighthouse and the Cape Cod and Nauset Beach towers have been moved from eroding cliffs.



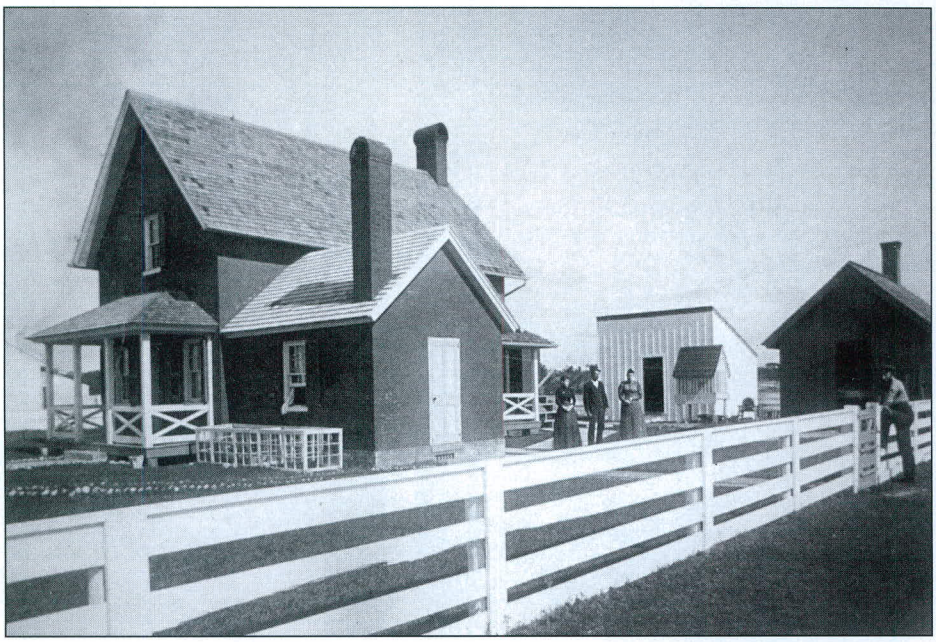
The Lighthouse Service sidewheel steamer tender *Tulip* was constructed by the Navy as the *J.N. Seymour*. Length – 120 ft., beam – 20'6", draft – 5'9", tonnage 169. The Lighthouse Service purchased the vessel from the Navy in 1865 for $6,000. She went out of commission on Oct. 1, 1881. In 1908 a new vessel was constructed and named *Tulip*. U.S. Lighthouse Society photo.

Left — Keeper Unaka Jennette polishing the 1st order Fresnel lens in the Cape Hatteras tower. The photograph was taken by Clifton Adams for the National Georgaphic Society and published on page 718 of the December 1933 issue of the *National Geographic* magazine. Photo courtesy of the National Park Service, Cape :Hatteras National Seashore.

Below — Cape Hatteras Light Station facing southeast, May 30, 1899. The keeper's house is at left and the Assistants' duplex at right. The various out buildings are storage sheds and privys. Photo courtesy of the U.S. Coast Guard.

Above — The assistant keepers' dwelling circa 1894. Today this building is used for exhibits and as offices.

Below — The head keeper's dwelling, circa 1894. This structure now houses the gift shop. Both structures will be moved with the tower. U.S. Lighthouse Society photos.



In 1855, a small beacon was constructed about 1/4 mile from the tip of the Cape Hatteras Point and 3/4 mile from the lighthouse. The wooden structure, painted brown with a red lantern, displayed a fixed white light from a 6th order lens. In Light Lists of the day, this beacon light is paired with the Cape Hatteras tower indicating they form a range. However, the limited range of the beacon light of nine miles and height of only 25 feet above sea level, as opposed to the 196 foot high Cape Hatteras tower with a range of light of 20 miles, makes it doubtful that this odd pair was indeed a range. More likely, the beacon light (probably maintained by the Cape Hatteras Light Station keepers) was to assist vessels maneuver in the Cape Hatteras Cove area, an excellent anchorage and shelter from storms from the north and northeast.

A rare photo of the Hatteras beacon circa 1894. U.S. Lighthouse Society photo.

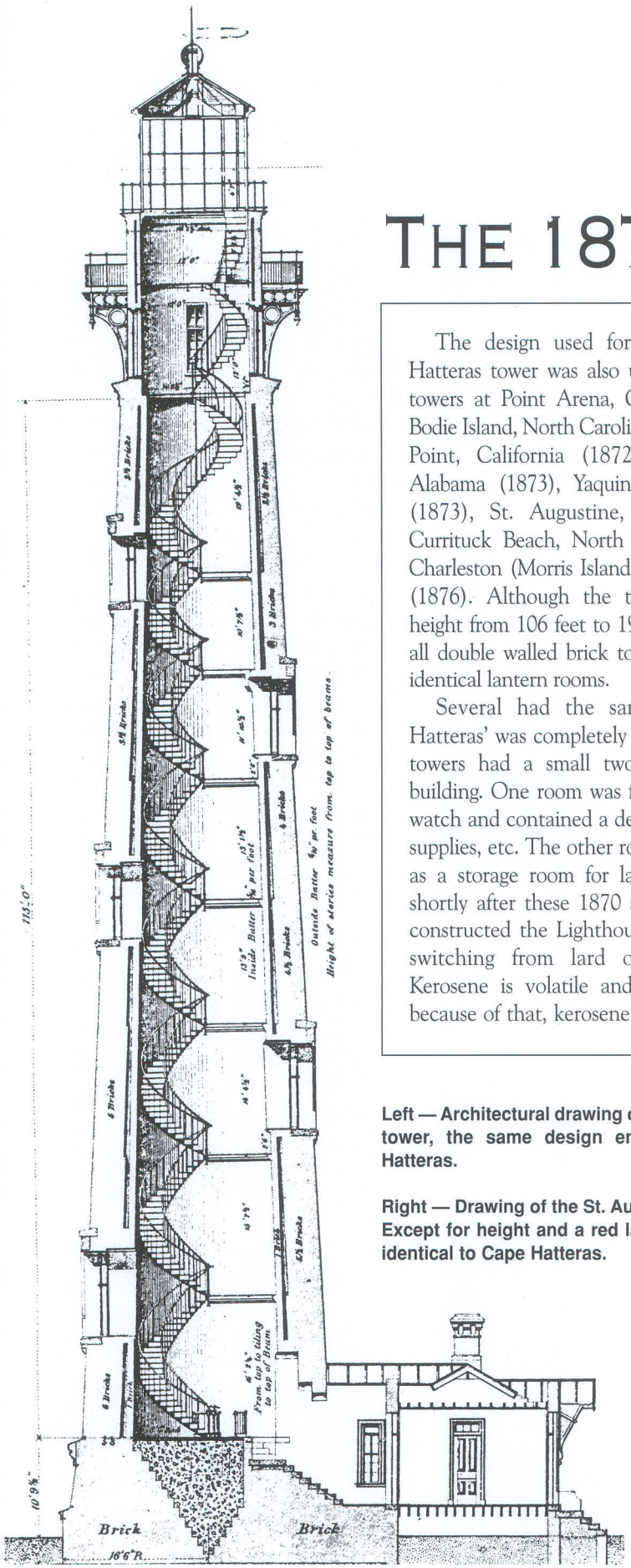
THE 1870 TOWER DESIGN

The design used for the new Cape Hatteras tower was also used to construct towers at Point Arena, California (1870), Bodie Island, North Carolina (1872), Pigeon Point, California (1872), Sand Island, Alabama (1873), Yaquina Head, Oregon (1873), St. Augustine, Florida (1874), Currituck Beach, North Carolina (1875), Charleston (Morris Island), South Carolina (1876). Although the towers ranged in height from 106 feet to 197 feet, they were all double walled brick towers with almost identical lantern rooms.

Several had the same bases; Cape Hatteras' was completely different. Several towers had a small two room entrance building. One room was for the keeper on watch and contained a desk, his log books, supplies, etc. The other room was designed as a storage room for lard oil. However, shortly after these 1870 style towers were constructed the Lighthouse Service began switching from lard oil to kerosene. Kerosene is volatile and dangerous, and because of that, kerosene was never stored in the oil room. Small oil houses were specially constructed away from the towers to house kerosene (see the History of Oil Houses, *Keeper's Log* Vol. V, No. 3).

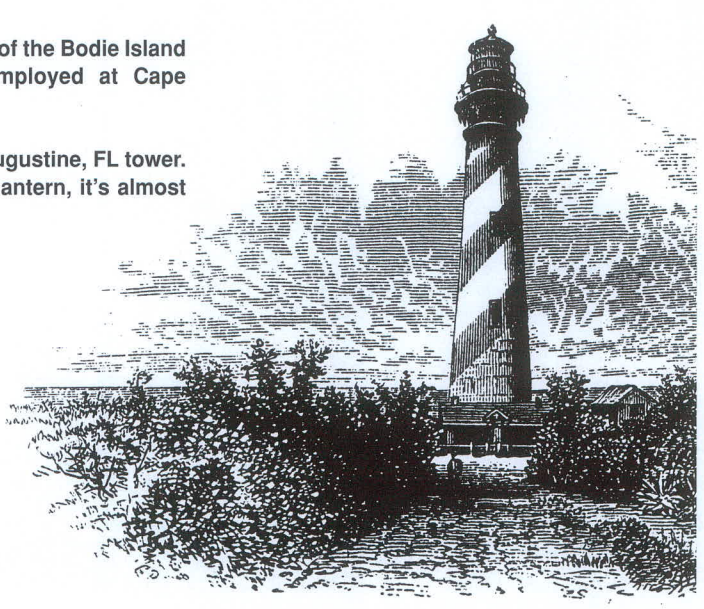
The St. Augustine tower is almost identical to Cape Hatteras. Both are painted with black and white spiral stripes. Cape Hatteras is 197 feet high with a black lantern room, while St. Augustine is 165 feet high, and has a red lantern room. The double walled towers accomplished three things. First, the air space between the double walls acted to keep the interior warm in the winter and cool in the summer. Secondly, the design allowed the tall towers to be constructed with less bricks, thus they were less expensive to build and finally, the entire tower was lighter than a solid brick wall tower and could be constructed on ground which wouldn't support a more massive structure.

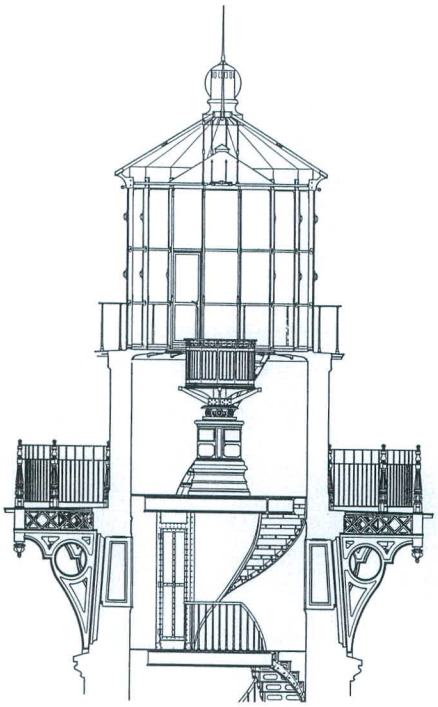
The Cape Lookout tower appears to be of the 1870 design, but is plainer and was built to different plans in 1859.



Left — Architectural drawing of the Bodie Island tower, the same design employed at Cape Hatteras.

Right — Drawing of the St. Augustine, FL tower. Except for height and a red lantern, it's almost identical to Cape Hatteras.





Above — The 1870 style lantern can be distinguished by the double gallery and ornate metal work below the lower gallery.

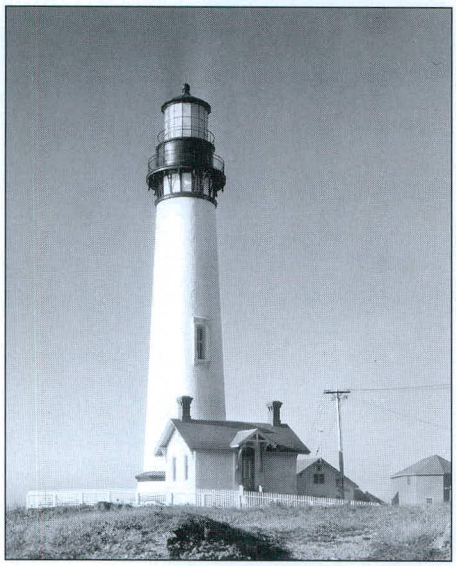
Right — Pigeon Point, CA is of the same design as Cape Hatteras but at 115 feet in height is far shorter. U.S. Lighthouse Society photo.

Below — Cape Hatteras' sister tower at Currituck Beach, NC. U.S. Lighthouse Society photo.

Just How High is the Cape Hatteras Tower?

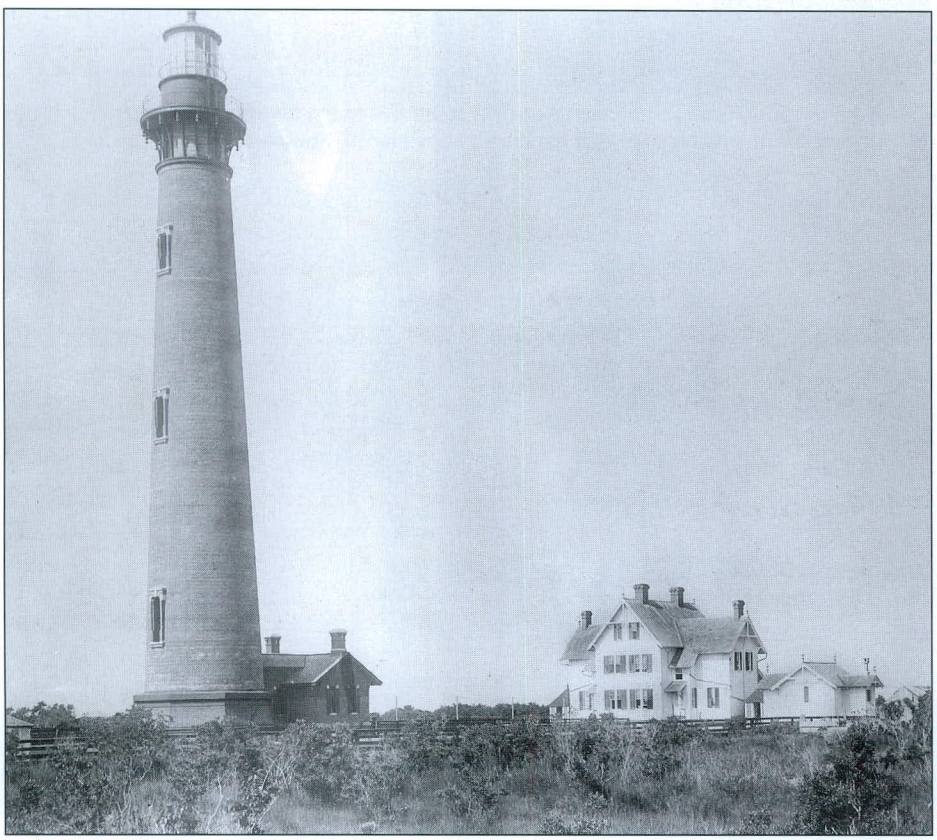
In recent years, most books and articles on our tallest light station tower have listed it as being 208 feet high. Is this the height from the base to the focal plane of the lens (center of the lantern room), to the top of the tower, just under the lantern, the top of the lantern, below the dome, or the top of the dome or to the top of the ball vent?

Most amateur researchers and writers become confused reading heights in government Light Lists which record the focal planes of the light (lens) above mean high water, as well as tower heights. This distance is different than the height of the tower from ground level up, as it involves the height of the land above high water upon which the tower rests. As an example: the focal plane (center of the lens and lantern) of a tower which is 100 feet above the ground, on a bluff 50 feet above sea level, is expressed in the Coast Guard Light List as 150 feet.



Early Light Lists expressed the height of the tower to the point where the lantern began. To those early administrators of our aids to navigation, the tower was a separate entity from the lantern which was placed on the tower.

The 1879, 1893 and 1905 Light Lists state that the Cape Hatteras tower is 189 feet from the base to the focal plane of the lantern room. The 1917 and 1931 Light Lists state that the Cape Hatteras tower is 193 feet from the base to the top of the lantern room, not the top of the dome, but the top of the lantern. The top of the dome is another 4 feet, 9 3/4 inches above that. Given all those dimensions, it appears that the Cape Hatteras tower is 197 feet, 4 3/4 inches to the top of the dome. If you climb the Cape Hatteras tower, and we hope you do someday, and you stand on the lens deck, your feet will be 185 feet above the ground; the 189 foot distance of the focal plane less the four feet between the deck and the focal plane.



News Flash!

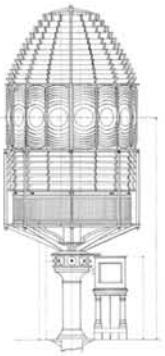
As we were preparing to go to press, we learned that the International Chimney Company of Buffalo, NY was awarded the bid to relocate the Cape Hatteras light station.

International Chimney successfully moved Rhode Island's Block I. SE lighthouse as well as the Cape Cod and Nauset, MA lighthouses.

The winning bid was $1,454,000 for engineering work and $8,035,000 for the move. The price includes new foundations and moving the tower, both dwellings, the oil house and two cisterns.

Given their track record, we are pleased that the International Chimney Company was awarded the bid and we wish them the best in moving this national treasure out of harm's way.

Join the U.S. Lighthouse Society Today or Give the Gift of Membership!



Restoration & Preservation

Thomas Point Shoal Lighthouse, MD

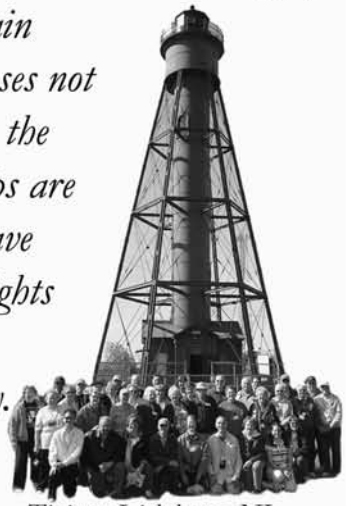
The U.S. Lighthouse Society has donated to many lighthouse preservation projects throughout the U.S. Most recently we were honored by being presented with the Preserve America Stewardship Award from The White House for our restoration work at Thomas Point Shoal Lighthouse.

Help Support Our Important Mission!

Education

The Keeper's Log *magazine is the only one of it's kind and has been published quarterly since 1984. Receive this award-winning publication as a benefit of membership.*

The Society organizes domestic and international lighthouse tours. Many of our excursions gain access to lighthouses not normally open to the public. These trips are a great way to have fun, see lots of lights and learn about lighthouse history.



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