

Sand Key Florida's

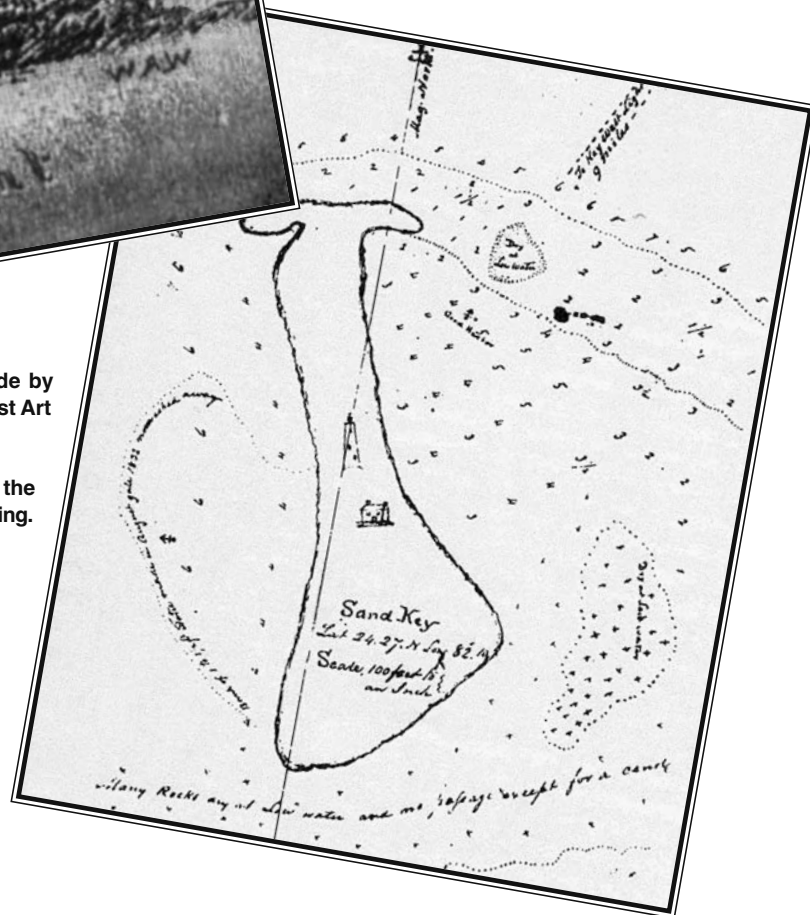
Two Lighthouses

By Thomas Taylor



Above – Sketch of the original Sand Key Lighthouse made by William Adee Whitehead in the 1830s. Courtesy of the Key West Art & Historical Society.

Right – A sketch made of the configuration of Sand Key in the 1830s, showing the location of the lighthouse and keeper's dwelling. Courtesy of Monroe County, May Hill Russell Public Library.



The First Sand Key Lighthouse (1827-1846)

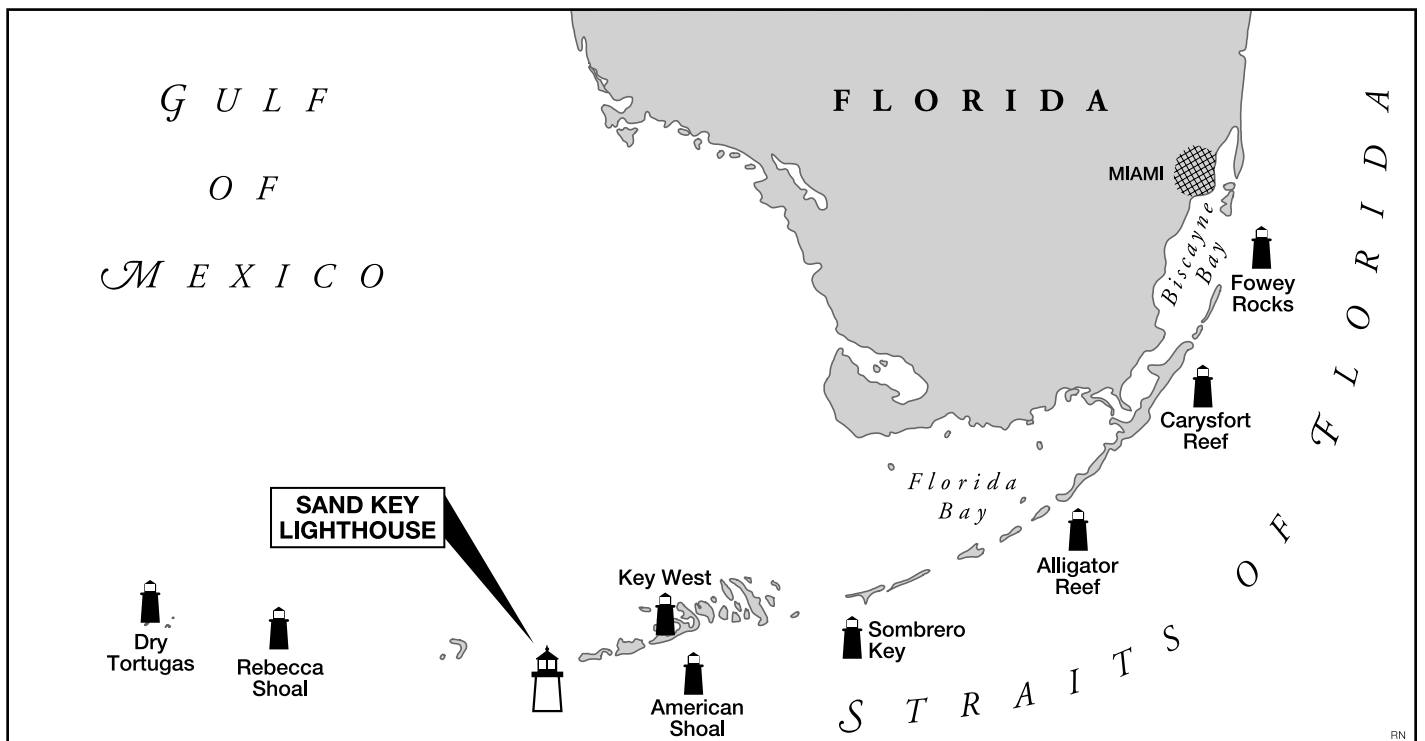
Located in the Florida Keys at the southern-most point of the United States, Sand Key is a small, low-lying spit of sand seven miles south-southwest from Key West, near the west entrance of the southwest channel leading to Key West. During the British occupation of Florida in 1763-1784, it was called Porpoise Island possibly because of the large number of dolphins nearby or because from a distance, it may have looked like a porpoise just breaking the surface. At any rate, as its location was near one of the major navigation channels into Key West and from there into the Gulf of Mexico, it was important that its position be marked for sailors. When the British mariner George Gauld surveyed Sand Key in the 1770s he erected a large pole upon it to make it more visible. After the United States settled Key West in the early 1820s, a wooden day-beacon was established on the island. In June 1826, Captain Josiah Doane reported that "the beacon on Sand Key, seven miles from Key West is important; [but] it is fast going to decay & unless something is not soon done to it, it will fall." It became obvious that some kind of permanent and lighted marker was needed for this location.

Lieutenant Commander Matthew C. Perry had first recommended that a lighthouse be built on Sand Key shortly after he landed on Key West in March 1822, to take possession of the Florida Keys for the United States. Familiar with the local channels, he recognized that a light on Sand Key would be important for those approaching Key West from the south or Atlantic side of the Keys. However, the Act of May 7, 1822, the first Congressional act to provide for lighthouses in the Florida Keys, provided only for lighthouses at Cape Florida and in the Dry Tortugas. The following act, that of May 26, 1824, increased the appropriations so these first two lighthouses could be built, provided for a lightship to be built at Carysfort Reef, and added another lighthouse, but for "one of the Sambo Keys," rather than for Sand Key. This latter lighthouse would be constructed on Key West. The construction of these lighthouses was delayed by the loss of the contractor who was lost at sea on his way to build the lighthouses at Cape Florida, the Sambo Keys, and the Dry Tortugas, and by the hot, "sickly" summer season when mosquitoes and illness prevented construction. However, by January 1825, construction of the Sambo Keys lighthouse was already begun on Key West.

Many people still favored establishing a lighthouse on Sand Key. Congress, on May 18, 1826, determined that the lighthouse

authorized for the Sambo Keys could be built there or on Sand Key, and appropriated \$16,000 for the construction of a brick lighthouse and full light station, similar to those already established at Cape Florida, Key West, and Garden Key. In June, Stephen Pleasonton, the federal official in charge of all of America's lighthouses, authorized Henry A. S. Dearborn, Collector of Customs for the Port of Boston, to advertise for proposals for the construction of the new lighthouse on Sand Key. On July 17th, Dearborn forwarded to Pleasonton four proposals and bids for the lighthouse construction and three for fitting the lighthouse with the illuminating apparatus. Pleasonton chose the lowest bidders and authorized Dearborn to enter into contracts with Hersey Stowell of Hingham, Massachusetts, and James B. Gill of Suffolk, Massachusetts, for building the new lighthouse for \$12,538, and with Winslow Lewis for fitting up the tower with his patented lamps and reflectors for \$600. The contracts were signed on July 29, 1826.

In September, Pleasonton sent a copy of the construction contracts to William Pinkney, the Collector of Customs at Key West, and authorized him to locate and select the site and to supervise the construction of the Sand Key Lighthouse. The construction contract called for building a round stone or hard brick tower sixty-five feet high, twenty-five feet in



diameter at the base and twelve feet at the top with walls five feet thick at the bottom graduating to two feet thick at the top and with six windows of twelve lights each. With the lantern height, the focal plane of the light would be 70 feet above sea level. Pleasonton informed Pinkney that since the contracts had been signed, authority had been granted to have the contractor plaster the outside of the masonry tower with "Roman cement" to protect the bricks from the harsh effects of the climate on the exposed key. Also, Pleasonton had approved the contractor's suggestion to put a chimney at each end of the dwelling house instead of in the middle as had been stated in the contract. "If you approve the work, when done," Pleasonton charged Pinkney, "you will give the Contractor a Certificate to that effect. If the Collector should be absent when the Contractor arrives, the deputy Collector will act under these instructions."

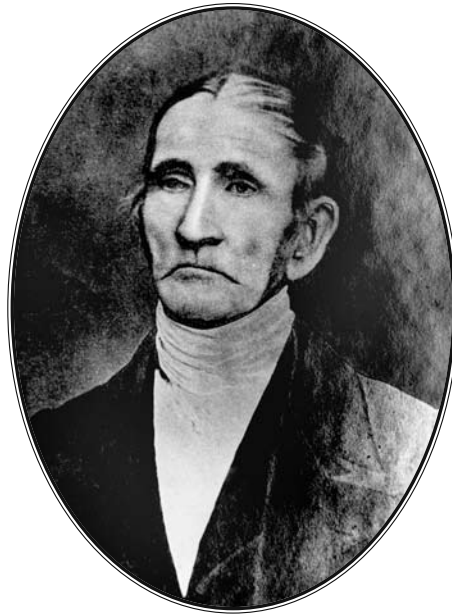
At the end of the next month, Pinkney reported to Pleasonton that he had "closely examined the Key above mentioned and fixed upon the best Site which in my judgement offers." Pinkney expected the work crews to arrive soon, but in November, he had to report to Pleasonton that none had yet arrived. Finally, on December 7, 1826, Pinkney could write Pleasonton:

One of the Vessels engaged by the Contractor for building the Light upon Sand Key arrived this morning with part of the materials, and I immediately provided them with boats to aid them in landing their provisions, water, &c—The Site [for the lighthouse] is a body of lime Stone, and will be found very favorable for the foundation of the building. As the Season is cool and healthy, I presume the Light will be completed in 70 days, and I beg leave to suggest that (should you deem it proper) a Keeper might be immediately appointed and Sent out, So that no delay may take place lighting it.

In order to make the situation of the Keeper of Sand Key Light comfortable, it is indispensable that he should have two boats: one a Small Sail boat, and the other somewhat larger. They are necessary for him for obtaining Supplies of wood from this Key, and enable him to communicate with me upon any Sudden occasion. I hope you will give me authority to Supply him.

By December 16th, all of the materials needed for constructing the new lighthouse

had arrived, and construction began shortly thereafter. In January, Pleasonton wrote Pinkney with authorization for him to procure the two boats requested for the keeper of the Sand Key Lighthouse, "provided they can be got at a reasonable price." However, he had to deny Pinkney's recent request for an increase in the salaries for the light keepers of his district.



Stephen Pleasonton. U. S. Lighthouse Society photo.

THE SAND KEY LIGHTHOUSE was about to get a keeper. In January, Florida's Territorial delegate in Congress, Joseph M. White, sent Pleasonton a proposal, signed by W. H. Simmons, Joseph M. Hernandez, and Charles Downing, recommending Joseph Ximenez of St. Augustine for the position of Keeper of the Sand Key Lighthouse. However, Pinkney had been having problems with John and Rebecca Flaherty, the keepers at the Dry Tortugas Lighthouse, on the remote islands of that name some seventy miles west of Key West. Having relocated from Baltimore, Maryland, they had not been able to cope with and adapt to the remoteness and inconveniences of life on the deserted, sandy islands far from civilization. In November, Mrs. Flaherty had expressed to Pinkney a desire to transfer to the new Sand Key Lighthouse, which would at least be closer to civilized life at Key West. Pinkney had suggested to Pleasonton that the Flahertys be exchanged with the keeper proposed for Sand Key, and on January 18, 1827, Pleasonton submitted to President Monroe that John Flaherty be

appointed keeper at Sand Key and that Joseph Ximenez be appointed to Flaherty's position at Dry Tortugas. The next day, Pleasonton wrote to inform Pinkney that the President had approved both appointments. Pinkney was instructed to inform John Flaherty of his appointment. As Ximenez lived in St. Augustine, Pleasonton wrote to John Rodman, Collector of Customs for that port, to inform Ximenez and to ask that Ximenez sail for Key West as soon as possible to report to Pinkney.

On February 20, 1827, Pinkney wrote Pleasonton that the new Sand Key Lighthouse would be completed in about two weeks, and in early March, he reported that Flaherty had been notified of his appointment to Sand Key and that the lighthouse would begin operation about April 1st or 2nd. By mid-March, the sixty-five foot tall brick tower was finished, and the lantern was being installed, complete with its bank of lamps. To differentiate this light from the fixed white light at Key West, Winslow Lewis provided Sand Key with a rotating apparatus, consisting of 11 patent lamps with 15-inch reflectors, which could be seen 13 miles to sea. The total cost of the new lighthouse was \$13,500.

John and Rebecca Flaherty arrived at the new Sand Key Lighthouse in early April, and finally, the southernmost lighthouse in the United States was completed. On the 13th, Pinkney wrote Pleasonton that notice had been published in the newspapers that the lamps would be lighted for the first time on the 15th. On the evening of that day, Keeper John R. Flaherty lighted the wicks of the eleven whale-oil lamps of Sand Key Lighthouse, and wound up and started the clockwork rotational mechanism for the first time. On April 23, 1827, Collector Pinkney wrote to Pleasonton:

I am glad to be able to report to you that the Light on Sand Key was lit on 15 inst. and that Mr. Flaherty keeps it in good order. This light is a remarkably fine one in all respects, and the whole apparatus, as well as the oil furnished is of superior quality. The moment I have any mode of visiting the different Lights, I will do so in person, but I am Satisfied that the Cape Florida & Key West Lights, as well as the Light Ship [on Carysfort Reef] are not surpassed in the U. States. And I think that the Sand Key Light will be well attended to.

The last sentence of Pinkney's letter pointed up the fact that he would need to

supervise John Flaherty closely. Complaints had been made about Flaherty's poor performance in maintaining the Dry Tortugas Lighthouse over the past year, and Pleasonton had questioned his suitability for service at Sand Key. However, Pinkney assured Pleasonton that with Flaherty at Sand Key, only seven miles from Key West rather than more than seventy miles away at Dry Tortugas, he could be properly supervised.

The Sand Key Light was completed, but Pinkney was yet uncertain how his services as inspector and supervisor on the project should be compensated. In September, he wrote Pleasonton on the subject, and Pleasonton replied that Pinkney should simply charge \$100 for his services against his quarterly accounts.

William Pinkney, Collector of Customs for Key West, now had four lighthouses, Cape Florida, Key West, Dry Tortugas, and Sand Key, and one lightship, on Carysfort Reef, to look after, but as his letter to Pleasonton had intimated, he had no adequate means of transportation to these locations in order for him to make personal inspections of his charges. Indeed, in a letter to Pleasonton on April 13th, Pinkney stated that he had had to go to inspect the work on Sand Key in a small, open sailboat in which, at times, his life and those with him were "frequently endangered." For example:

Today, I have been obliged to dispatch the Revenue boatmen in a Small boat to Sand Key with a Sixty Gallon Cask of rain water for the Keepers use, there being none in the Cistern. It blows exceedingly heavy, and the lives of the men are actually in danger. I assure you, Sir, that some accident will occur ere long, if I have not more adequate means placed at my disposal to communicate with the Lights.

For the first year, things seemed to go relatively well for the Flahertys on Sand Key. However, in the spring of 1828, Mrs. Flaherty seemed to think that they were due something extra, and, she wrote to Stephen Pleasonton. The year before, when the Flahertys had been on the Dry Tortugas, Pleasonton had authorized the revenue cutter Marion to drop off provisions and supplies to the Flahertys because of reports of their destitution at that remote location. Now on Sand Key, Rebecca Flaherty felt that the delivery of provisions should again be allowed them. On May 2nd, Pleasonton's clerk, Joseph Shaw, writing on

behalf of Pleasonton, informed Mrs. Flaherty that the provisions sent to the Dry Tortugas were an emergency measure only, and that now for their post at Sand Key, the salary was all that was legally allowed the Flahertys.

At about this time, John Flaherty became seriously ill and applied for a leave of absence to return to the North for medical treatment. Flaherty agreed to supply a substitute to whom his salary would be paid, and the leave was granted. In the existing records, no name of Flaherty's substitute is given, but in all likelihood it was his wife Rebecca, for she remained on the island, and it was to her that her husband's salary was paid. Since December, 1826, William Pinkney had been trying vainly to have the salaries of his light keepers increased. Finally, on August 8, 1828, Pleasonton wrote to Pinkney to let him know that he could at last increase the salaries. The salary for John R. Flaherty, Keeper of Sand Key Light, was increased from \$400 per year to \$600 per year. Further indication that Rebecca remained as acting keeper is that when her husband died in 1830, she would be appointed the official keeper of the Sand Key Lighthouse.

In the summer of 1828, Keeper John R. Flaherty went to Stonington, Connecticut, from where he wrote to Pleasonton in August that he had found a better boat for the lighthouse there than could be obtained in Charleston where the boat was to have been purchased. Pleasonton wrote Pinkney to arrange for Flaherty to obtain the boat and also to have a porch built onto the dwelling house at the Sand Key Lighthouse. Extant historical records do not document whether John Flaherty ever returned to Sand Key, but Rebecca continued on the island as keeper after John's death in 1830. However, Rebecca's life was not completely lonely, for her sister came to join her there, the island was becoming popular as a day's sail from Key West for picnics, and fishermen and wreckers often stopped by the island to see if the ladies needed any supplies.

In the early summer of 1831, William Randolph Hackley, an attorney of Key West described his outing to Sand Key:

The wind was so light that we did not get to the key until 12 . . . I went up to the light house. The light is revolving and is one of the best in the United States. It is kept by Mrs. Flaherty . . . She with her sister and a hired man are the only inhabitants of

the key and sometimes there are none but the two females . . . The length of the key is from 150 to 200 yards and the average breadth 50 . . . [We] remained till evening and, having spent a pleasant day, returned to town at 8 p.m.

In the fall, as the November 22, 1834, edition of the St. Augustine East Florida Herald reported, a special event took place: "Mrs. R. F. Flaherty, formerly of Frederick City, Maryland . . . was married to Captain Frederick Neill. The ceremony was performed by Richard Fitzpatrick at the Sand Key Lighthouse."

A year later, Edward Van Evans came out to Sand Key to serve as temporary keeper while the Neills made an extensive trip north to see their family. They returned to Sand Key, where Captain Neill was officially appointed keeper, but on February 10, 1836, he resigned. Probably, both he and Rebecca returned to the north. Captain Francis Watlington became keeper until he was succeeded on July 27, 1837, by Captain Joshua Appleby. Nearly every book and website which include the history of the Sand Key Lighthouse ignore these two successors of Rebecca Flaherty and her husband John Neill and ascribe the later disaster at the lighthouse as happening to Keeper Rebecca Flaherty. However, such is not the case.

Joshua Appleby was born in Rhode Island on December 5, 1773, and went to sea at an early age. He married Sarah Viall, but she died at the age of 23, leaving Appleby with the care of their year-old daughter, Eliza. By 1820, Appleby had married Mary Forester, and at about that time, he made his first trip to the Florida Keys. Appleby fell in love with the area, and decided to settle permanently on Key Vaca, the site of today's City of Marathon. In the spring of 1823, the following notice appeared in the Floridian of Tallahassee:

The public are informed that this settlement commenced November 19, 1822, by Joshua Appleby of Newport, Rhode Island, and John W. Fiveash of Norfolk, Virginia. Immediately at the west end of the Key is the settlement, where there is a flagstaff erected. This port has . . . boats and provisions of all kinds to relieve those who may be so unfortunate as to get on the Florida reef . . . At present there are four families residing at this place; corn potatoes, beans, onions, cotton, and all West India fruit thrives rapidly.

Appleby became a fisherman and turtler, and a wrecker. In the spring of 1823, he was accused of causing wrecks which would be salvaged by a comrade, Charles Hopner, and Commodore David Porter, commander of the naval squadron at Key West, ordered Appleby arrested, placed in irons, and shipped to Charleston. However, the case against Appleby was both complicated and confused, and finally, Smith Thompson, the Secretary of the Navy, felt the matter should be referred to President James Monroe. In July, 1823, the President said there was no proof against Appleby and ordered his release.

Appleby moved back to Newport, Rhode Island, but the lure of the Keys had bitten him hard, and by 1830, he was living in Key West with his wife. Because Appleby had been cleared of any criminal charges, he was able to get a wrecking license, and by 1831, he was listed as the owner of the wrecking schooner, *Mary Ann*. On July 27, 1837, Joshua Appleby was named Keeper of the Sand Key Lighthouse. Whatever his eccentricities, Appleby proved to be an efficient keeper, and he kept the light burning through several gales and hurricanes. The fall of 1837 has been called "The Great Hurricane Season," and although none of the hurricanes dealt a direct blow on the Key West area, the accumulative effects of the storm surges and high tides caused by these storms and gales were telling, as erosion brought the shoreline closer and closer to the base of the Sand Key Lighthouse. In his report of November 8, 1837, presented to Congress on December 14th, Stephen Pleasonton announced the approval by the Board of Navy Commissioners for "securing the foundation of the Sand Key light-house," and asked Congress for the necessary appropriation. However, nothing was done. In a letter written on October 9, 1838, the new Collector of Customs for Key West, Adam Gordon, wrote:

Sand-key light, although generally a fine light, is at this time much out of order. The glass in the lantern is opaque and bad, the reflectors, lamps, etc., much worn . . . The contractors, to whom I have made known the condition . . . have promised to furnish new reflectors, lamps, &c. . . and the Department has authorized me to procure new glass for the lanterns.

Gordon hoped to have the repairs made to the Sand Key Lighthouse within a month

or so. Possibly, the eleven old lamps with the 15-inch reflectors were replaced with fourteen new lamps with twenty-one inch reflectors, for in his report for 1840, Gordon mentions that the fourteen lamps of the Sand Key Lighthouse used 500 gallons of spermaceti oil during the year.

On September 4, 1842, a massive gale swept the southern Florida Keys, passing between Key West and Havana. Although the winds blew directly out of the Key West Harbor, which lessened damage to the shipping there, the winds and storm surge did considerable damage to Sand Key. Half of the Key was washed away, and the winds destroyed the keeper's dwelling and kitchen and badly damaged the lantern. It was evident that many repairs would be necessary and that a sea-wall would have to be built to protect the island and its lighthouse in the future. More than a year later, in his report of September 26, 1843, Collector Adam Gordon related the repairs which were made to the Sand Key Lighthouse:

The light at Sand Key, since it has been supplied with new reflectors and plate glass, &c., is exceedingly brilliant and powerful. The steel cup, on which the revolving pivot rests, has proved too soft.

The [sea] wall at Sand Key has been completed according to contract, and is, I think, a fine piece of masonry. At the earnest solicitation of the keeper, and with the advice of others, who are good judges, I have employed the contractors to extend the wall about thirty feet longer than the original contract called for, and at the same rate nearly. The contractors found they had taken the job very low, and, for the extra thirty feet, charged three cents per cubic foot more. This is to give protection to the kitchen, and ward off on the whole south side. I am of the belief that you may now safely construct a keeper's house. During the progress of this work, I have visited Sand Key four times; and I believe it is as faithfully done as it can be with the materials of this country. A keeper's house should be prepared at the earliest convenience of the Government; for both the keeper and his assistant have lacked ordinary comfort for the year past.

Soon appropriations made possible the construction of a new dwelling for the light keepers. Collector Gordon was pleased with the results. Unhappily, soon after the new dwelling was completed, the area was hit

again by another severe hurricane on October 3-4, 1844. Key West was devastated, but out at Sand Key, the desolation was truly incredible. A full half of the remaining portion of the island had washed away, the sea wall had been ruined, and the brand new keeper's home was destroyed. It took another year to repair the damage.

In early October, 1846, Joshua Appleby was glad to receive at his new dwelling house his daughter Eliza, her second husband Thomas Patterson, and their three-year-old son. With them was a friend from Newport, Rhode Island, Mrs. Mary Ann Petty Harris and her young adopted daughter. Thus, there were six people staying on Sand Key the night of October 10-11. The day before had been unusually warm, but as the morning of October 11th began, everyone knew that a major storm was brewing. By noon, it had become a hurricane that Col. Walter C. Maloney would call "the most destructive of any that has ever visited these latitudes in the memory of man."

Before daylight the next morning, nothing remained on Sand Key, not even the island itself! The entire light station, including the brick tower, had washed away without a trace. An officer on the brig *Perry* in Key West harbor reported: "Sand Key light is gone, and with it every vestige of the Islet." Lieutenant William C. Pease of the *USS Morris* recalled:

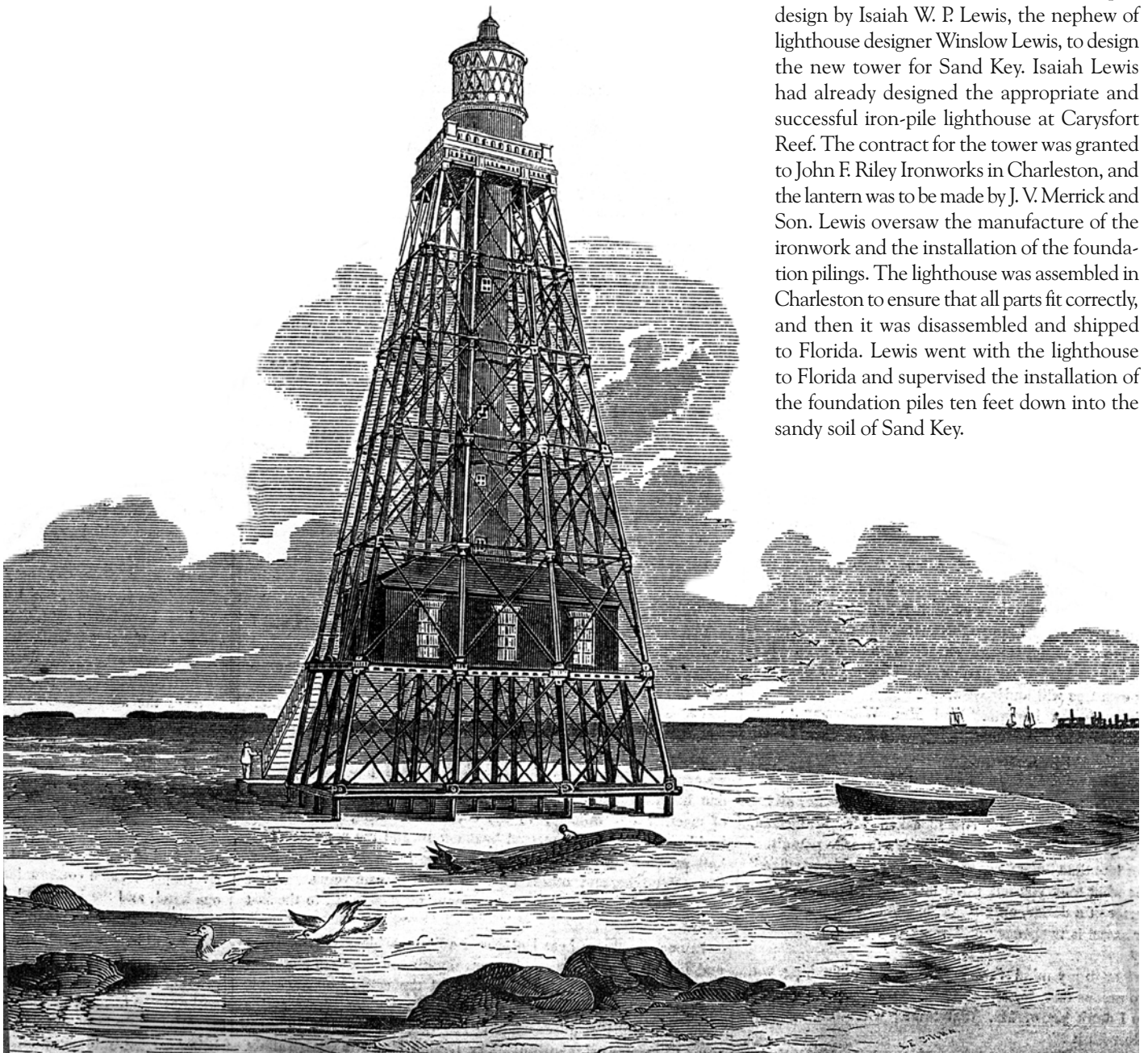
The light-house at Key West and Sand Key washed away . . . and waves roll over the spot where Sand Key was. At Sand Key, six persons were killed or drowned – most likely the former, as the general impression is that they fled to the stone Light-House for refuge, the key being very low. Poor old Capt. Appleby — I knew him very well: he told me the first hurricane would sweep all to destruction, and alas! his prediction is verified.

The Sand Key Lighthouse was no more, but mariners still needed a navigational aid on the reefs, even more so now since the island itself was no longer visible. To mark the dangerous shoals and the site of the ill-fated lighthouse, Stephen Pleasonton ordered the 140-ton *Honey* to be sent down from New York to serve as a lightship until a new lighthouse could be constructed. In a few years, a new Sand Key Lighthouse would be built, but it would be radically different from anything ever built in Florida, a drastic

departure from the small, brick towers which had guided navigators during the Territorial Period. The new Sand Key Lighthouse, completed in 1853, would be a cast-iron pile lighthouse similar to the one then being built at Carysfort Reef.

The Second Sand Key Lighthouse (1853-Present)

On March 3, 1847, Congress appropriated \$20,000 “for a screw-pile lighthouse on or near Sand Key.” It was recognized that this difficult location for the construction of a lighthouse would require substantially more funding, and in 1848, Congress appropriated an additional \$39,970.74 for the construction of the new lighthouse on Sand Key. However, progress on the new lighthouse was delayed, and when the lighthouse establishment was re-organized in 1852, the new board chose a screw-pile design by Isaiah W. P. Lewis, the nephew of lighthouse designer Winslow Lewis, to design the new tower for Sand Key. Isaiah Lewis had already designed the appropriate and successful iron-pile lighthouse at Carysfort Reef. The contract for the tower was granted to John F. Riley Ironworks in Charleston, and the lantern was to be made by J. V. Merrick and Son. Lewis oversaw the manufacture of the ironwork and the installation of the foundation pilings. The lighthouse was assembled in Charleston to ensure that all parts fit correctly, and then it was disassembled and shipped to Florida. Lewis went with the lighthouse to Florida and supervised the installation of the foundation piles ten feet down into the sandy soil of Sand Key.

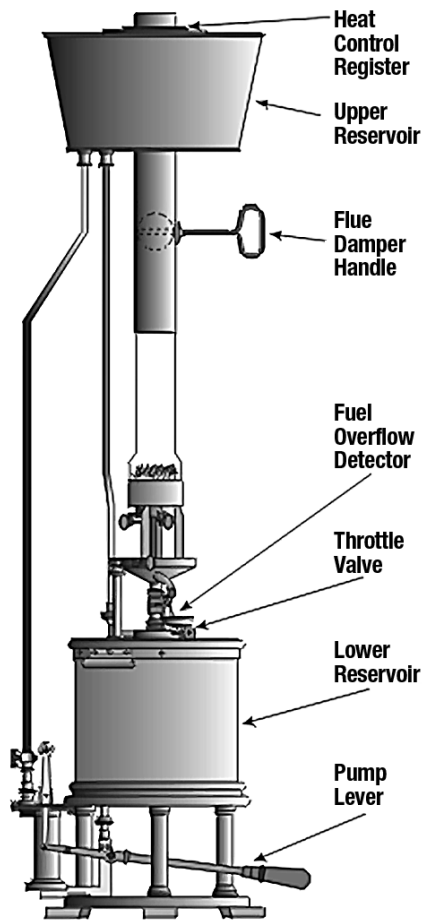


Lt. George Gordon Meade, the lighthouse engineer who in 1863 would win the Battle of Gettysburg in the Civil War, had just completed the Carysfort Reef Lighthouse on March 10, 1852, and in May, he was transferred to the construction of the Sand Key Lighthouse. However, the construction funds had been expended, and it was not until September that Congress appropriated more funding. On January 22, 1853, the working parties landed on Sand Key to begin the work. Meade appointed William Dennison, a civil engineer from Boston, and James W. James of Philadelphia to oversee the construction crews. During the spring of 1853, the iron skeleton of the unique lighthouse rose above the azure waters of the Florida Keys, and in early summer the lighthouse construction neared completion. Over 450 tons of iron went into its construction, and like at Carysfort Reef, its structure contained also the dwelling for the keepers. This dwelling contained nine rooms, each twelve feet square. One room contained the water tanks, fed through pipes from rainwater, and storage for the lamp oil to light the lens. The enclosed stairway that led to the lantern contained 112 steps. As the final stage of completion, a Henry Lepaute first-order lens, the first Fresnel lens in Florida, was installed. This lens, a rather unusual one, had been exhibited at the Crystal Palace Exposition in New York before it was shipped south to Florida for installation in the Sand Key Lighthouse. When the lighthouse was completed, its total cost was \$126,000. The new keepers were Latham Brightman, and his assistants, Charles Bowman and Charles B. Berry. When they first lighted the lamp inside the lens, the Sand Key Lighthouse began operation on July 20, 1853. The light in the 132-foot lighthouse (sea bottom to top of lantern), had a focal plane of 109 feet above sea level and could be seen for sixteen nautical miles.

When the lamp was installed inside the first-order Fresnel lens, Meade used a bit of subterfuge. He first installed a regular, standard French carcel lamp, in which whale oil was fed to the lamps by a clockwork mechanism on the lamp which the keepers would have to periodically wind up. This lamp was difficult to use and to regulate, and the keepers used it for the first five nights. According to Meade: "The lamp had to be constantly watched and something done to



Major General George Meade. Photograph courtesy of Eleanor DeWire & New York City Public Library.



George G. Meade's Hydraulic Lamp of 1853. Drawing by Thomas Tag based on a Light House Board report.

it." Meade then installed a new five-wick, hydraulic lamp which Meade had designed himself. Meade's lamp used hydraulic pressure created by a hand pump to pump the oil into a tank in the dome of the lighthouse. The oil was then gravity-fed down to the burner of the lamp. Meade reported that "Its simplicity and uniform working afforded great relief to the keepers, who ascertained it required but one adjustment of the wicks during the night." Thus, Meade's new hydraulic lamp received its national debut in the Sand Key Lighthouse. This lamp would become the standard lamp used in United States lighthouses until the advent of kerosene required a different design.

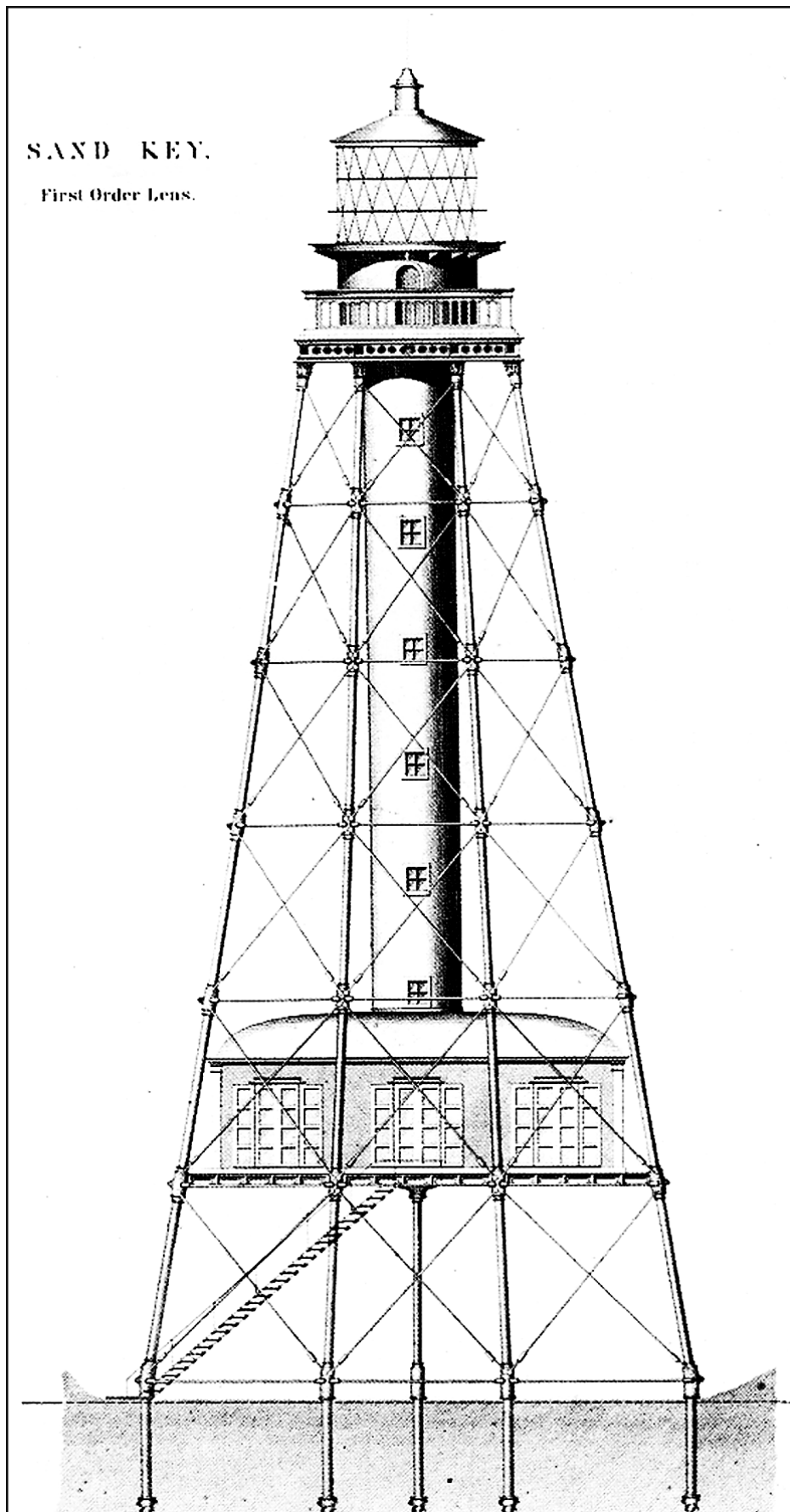
As the new Sand Key Lighthouse shined its beam over the warm waters of the Florida Keys, it provided a special characteristic. The rotating lens provided a fixed white light for one minute, a partial eclipse for twenty-five seconds, a white flash of ten seconds, and finally another partial eclipse of twenty-five seconds. No other lighthouse in the area had this characteristic signal.

Like all of the other "reef lights," the Sand Key Lighthouse experienced its share of hurricanes, the first being the devastating hurricane of 1856. The Lighthouse Board reported: "[in Key West] many lives were lost and much property was destroyed and damaged . . . the sand island, upon which the Sand Key Light-house was, with the wooden buildings, wharf, and boats, was destroyed, leaving, however, the light-house tower uninjured. The water during the gale, rose to six feet around the tower, and at the last dates from Key West, it remained at a depth of two feet. The gradual reformation of this little sand island gives strong hopes that there will be no permanent injury to the site and foundation."

Like the lighthouse at Carysfort Reef, the Sand Key Lighthouse, thoroughly under Union control, remained in operation throughout the Civil War. However, hurricanes continued to threaten the lighthouse. The phenomenon of the 1856 hurricane was repeated by the hurricane of October, 1865. Once again the island and everything on it disappeared . . . except the lighthouse, and for the fifth time since 1842, the light station had to be rebuilt, including a boat house, privy, storehouse, and wharf. In October, 1870, the infamous "twin hurricanes" struck. The first one hit on October 8th, and for three days it raged

SAND KEY.

First Order Lens.



through the area. The keepers had just completed cleaning up the debris and repairing the damage when the second hurricane raged through for two days and once again swept away the entire island. After this second storm, there had been so much damage at the lighthouse that Congress appropriated \$20,000 for repairs. However, the repairs were delayed and in 1874 another hurricane added to the damage. The keepers' quarters were washed through, and inspectors reported that the dwelling was scarcely inhabitable. Before repairs could be made another hurricane in 1875 also struck the lighthouse, doing only slight damage.

It was decided that the keepers' quarters had to be completely rebuilt, but it was a complicated project. Temporary quarters were built on the island for the keepers and the workmen who would build the new quarters on the lighthouse. In very time-consuming work, due to the heavily rusted nuts and bolts, the remains of the old dwelling were removed from the skeletal structure. The new structure was to be heavier than the old, so new bracing had to be added to the tower to support it. The new dwelling was the same size as the old, but the interior arrangement was altered to better serve the keepers. It was decided not to use iron doors, windows, and shutters in the new dwelling as experience had taught that the iron ones became so rusty so quickly as to soon be unserviceable.

The lighthouse was once again in excellent condition, and in 1889, the light was improved by the installation of a new mineral oil (kerosene) lamp. The new lamp and its spares arrived from the Staten Island, New York, Lighthouse Depot on board the lighthouse tender Fern. In 1891, red sectors were installed in the lantern to provide a red warning light over the most dangerous sectors of the reef.

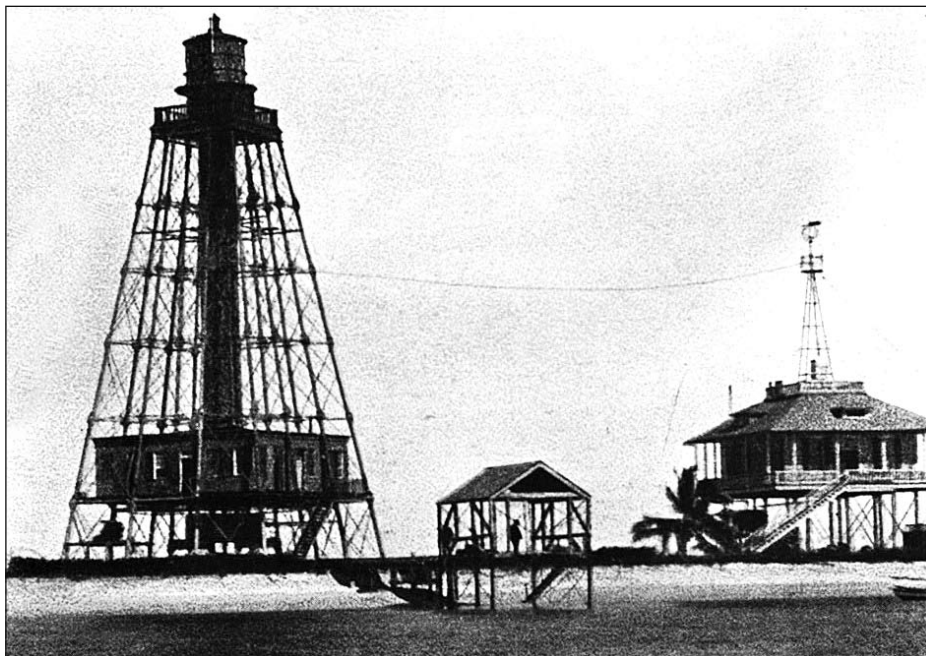
Soon after 1900, a weather station was built on the restored island, but it soon learned the rigors of the weather that the lighthouse had been subjected to. On October 12, 1909, a hurricane gusting to one hundred miles per hour hit the area. The sea overran Sand Key by twenty feet, washing away all of the structures on the island. There was no loss of life as everyone on the island had sought refuge in the lighthouse at the beginning of the storm. Afterwards, the island reformed and the weather station was rebuilt. In October, 1910, another set

of “twin hurricanes” struck, and during the latter storm the winds hit 125 miles per hour and were above gale force for thirty hours. C. J. Doharty, who manned the weather station reported:

The station was visited by two severe hurricanes on October 13th, 14th, and 15th, and October 17th and 18th. The wind velocity steadily increased and much rain fell . . . Waves began to wash over the island, and soon all the sand was carried from under the lighthouse, and the island shifted to a position further north . . . an outhouse was washed away . . . at noon on the 17th the wharf and wood pile were washed away, and the lighthouse began to sway in the gusts. Great trouble was experienced in keeping the doors closed on the windward side, the force of the wind pulling out nails repeatedly . . . rain fell in torrents, making it impossible to see further than 100 feet . . . The wind velocity increased and the swaying and trembling of the lighthouse stopped the clock several times . . . the boat house went to pieces and was washed into the sea. At 1:30 P.M. the brick oil house broke up. At 1:50 P.M. the barometer reached its lowest point, 28.40 inches . . . braces at the bottom of the lighthouse began to break, and the force of the waves kept striking them against the other iron like sledgehammers.

The weather station was once again history. The station was again rebuilt, but another hurricane washed everything away again in 1919. Through all of this, the lighthouse stood firm.

At the turn of the twentieth century, Sand Key was known for more than its hurricanes. Through the centuries, thousands of sea birds, notably roseate terns, least terns, and sooty terns, came in March to nest on Sand Key. Their eggs were very popular with people from Key West, and the keepers often collected the eggs for their own consumption and by the basketful for friends in Key West. When local people came out to visit the island, they too collected many eggs. Plume hunters also came to the island to kill herons and egrets to adorn the hats of ladies worldwide. Soon, the bird populations were being so decimated that William Dutcher, chairman of the American Ornithological Union formed a Bird Protection Committee to stop that slaughter of these birds and to protect their eggs. This committee hired people to serve as bird wardens, and the principal keeper at the Sand Key Lighthouse, Charles G. Johnson,



Sand Key prior to the hurricane. Weather station at right, boathouse in the center. Photo courtesy of the author.



Sand Key in 1919 showing the hurricane damage. The antenna is collapsed on the weather station. Photo courtesy of the author.

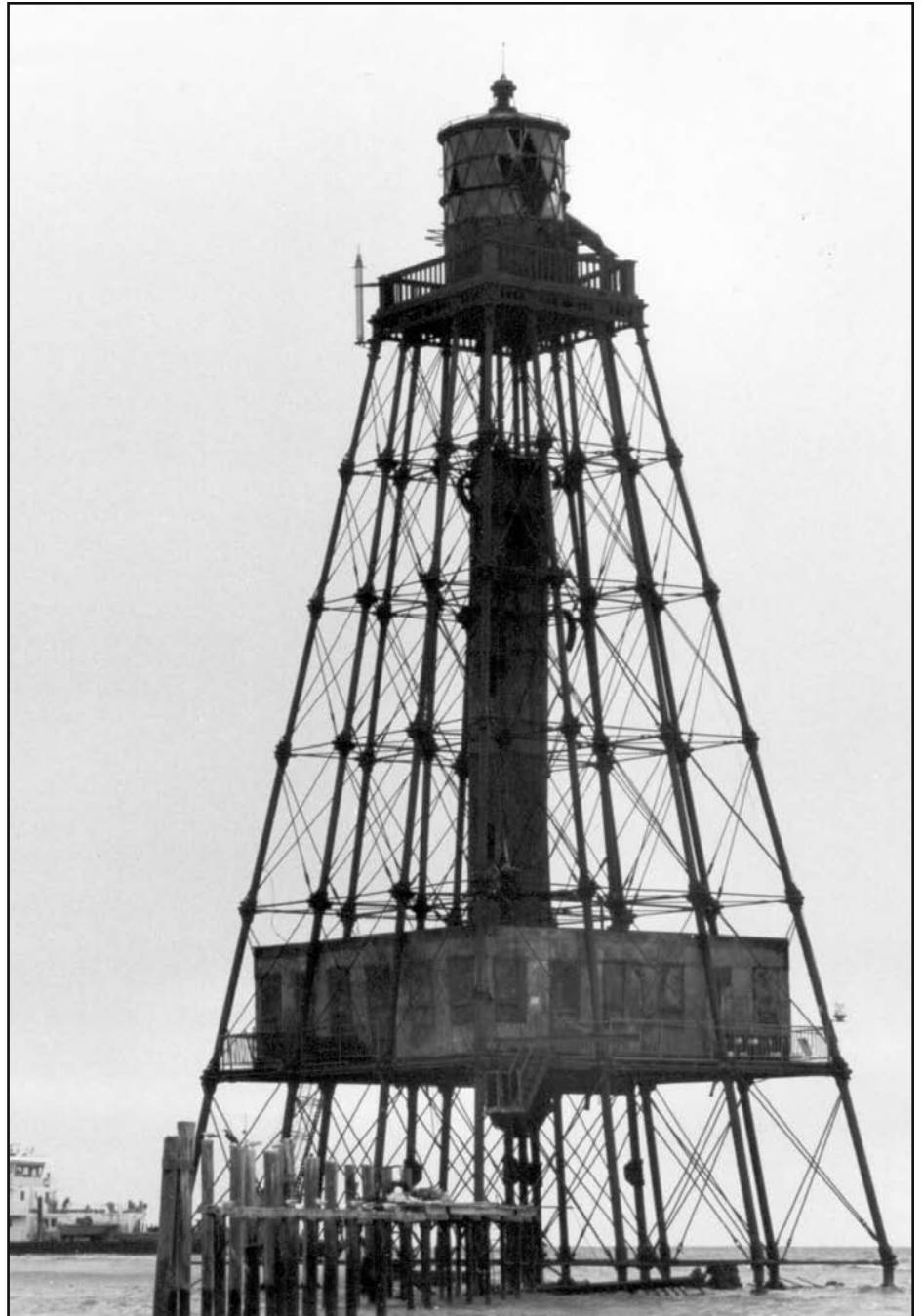
became one of them. However, so many people still visited Sand Key that the birds finally deserted the island completely.

Except for the destruction of the birds, visitors were otherwise very welcome at the Sand Key Light Station. In 1924, Kathleen Kelly, the new bride of Keeper Thomas Kelly came to live at the station. In later years, she remembered: "There was hardly a day when we didn't have company . . . It never got boring or lonely; I wouldn't have minded living there forever." Picnickers often invited the lighthouse keeper and wife to enjoy their meals, and fishermen were always ready with a fresh meal.

In 1939, the Sand Key Light Station came under the control of the Coast Guard. To control costs, the Coast Guard began the automating of as many lighthouses as they could. The Sand Key Lighthouse was automated in 1941 with an acetylene gas system, and the keepers were removed. The new Coast Guard keepers would come out to inspect the light and refuel the acetylene tanks only every three-to-five months. In 1967 the first-order Fresnel lens was removed and replaced by a fourth-order lens.

With no keepers aboard, the lighthouse was subjected to much vandalism and maintenance problems that went for months without repair. The wood floors and other wooden parts of the keepers' dwelling rotted and fell apart. Nevertheless, on January 3, 1975, the lighthouse became part of the Wilderness Preservation System and was placed on the National Register of Historic Places. In 1982, the fourth-order lens was removed and an experimental flash-tube array, powered by solar-charged batteries, was installed. This did not work very well, and the following year a regulation, flashing 300 mm optic was installed, regaining for the lighthouse a range of sixteen miles, a range comparable to the original first-order lens. In 1987, a 190-mm rotating lantern was put in the lantern. All of these optics were battery operated from solar power.

In 1989, major renovation work began on the lighthouse. Work included many structural repairs, new handrails, decking replacement, sandblasting, and painting. During the late afternoon of Sunday, November 12, 1989, some flammable materials stored by the contractor in the keepers' quarters somehow caught fire, and the lighthouse was seriously damaged by the conflagration. During the



The Sand Key Lighthouse after the contractor-caused fire. Note the central staircase tube has dropped down through the dwelling, some windows (storm panes) of the lantern are broken and the dwelling badly burned. Coast Guard or contractor vessel at left. 1990 photo by Coast Guard PA3 Veronica Cady.

conflagration, the intensity of the fire caused the lower sections of the stair column to buckle, and the entire column detached from the lantern and crashed down through the keepers' quarters. The quarters were entirely gutted. It was a disaster to the historic structure. A team of engineers went to the lighthouse on July 3, 1990, and found that, despite the terrible wreckage, the structural members of the lighthouse had received only superficial damage and that the lighthouse could again be made serviceable. From historic data and the original 1849 drawings by I. W. P. Lewis, a three-dimensional computer model of the lighthouse was developed and tested with stresses to check the on-site findings of the engineers. The results agreed that the lighthouse could be repaired. The Coast Guard scheduled a restoration plan for 1994 and appropriated \$500,000 to the project.

While the restoration was underway, the Coast Guard first installed a 190 mm rotating lantern on the lower level of the lighthouse, with a characteristic of one white flash every fifteen seconds. However, a better location was needed. After considerable difficulty in finding a nearby site, which did not contain living coral which might be damaged by the building of a temporary tower, a location was finally found – and a forty-foot skeletal tower was erected. The 190 mm optic was installed in the new tower, but the Coast Guard soon found out that the seas rocking the tower disturbed the rotation of this optic and caused it to go out of sync. A non-rotating 300 mm optic was fitted with an electrical quick flasher, and the light became steady. The new characteristic was sixty flashes per minute. The Coast Guard felt that this rapid characteristic, with a range of thirteen miles, would better let mariners know that something was different about this area and that special caution was needed.

However, several major groundings still occurred in the area. During the “storm of the century” in March, 1993, the 147-foot coastal freighter *Miss Beholden*, bound from Miami to Mexico with a twenty-ton cargo of cigarettes and candy, went aground on Western Sambo Reef. Her five thousand gallons of fuel were safely removed, and seven days later, she was safely refloated and towed through the coral heads to deeper water. On February 3, 1997, the 660-foot freighter *Contship Houston* struck Maryland Shoal, northeast of Sand Key, due to human error. She also was successfully



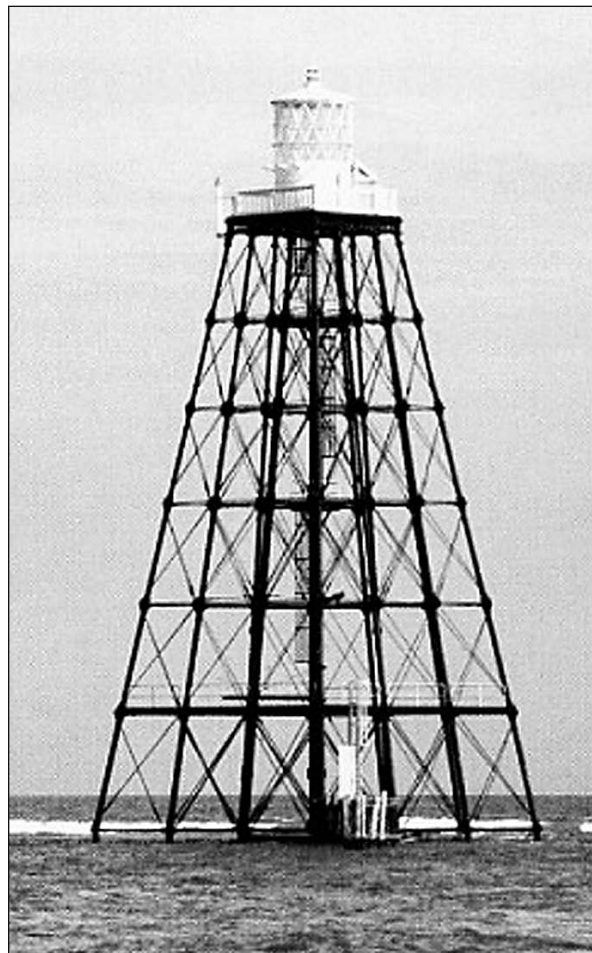
View of the damage to the Sand Key tower. Photo courtesy of the author.

removed from the reef after her owners guaranteed to pay up to six million dollars to satisfy settlements and judgments made against the ship. The National Oceanographic and Atmospheric Administration (NOAA) fines vessels which strike the reefs for damage done to the coral and environment, and these funds are used to improve navigational aids to prevent future groundings and to restore the reefs and environment. Some of this money was used to install – in all of the “reef lights” – the new, \$40,000 (each) Radar Beacons (RACONS). They reflect a unique radar image back to the radars of passing ships, allowing the ships to better identify the radar contact and thus improve their knowledge of their location.

Despite the federal regulations regarding the restoration of properties listed on the National Register, the Sand Key Lighthouse was restored without its historic keepers' dwelling or central stair column. Today, only a series of ladders permit access to the lantern. In the place of the historic first-order Fresnel lens, a present state-of-the-art Vega VRB-25 rotating beacon, made in New Zealand, was installed to provide a characteristic of two group, flashing white, every fifteen seconds. On August 11, 1999, the Sand Key Lighthouse once again commenced service, and it remains today, like the other “reef lights,” an active aid to navigation. The “reef lights” of the Florida Keys constitute today the largest and most unique collection of these special iron lighthouses in the world. As amazing and technological wonders of construction for their time, they have braved the most dangerous and ferocious weather and climate on earth and continue today as sound as when they were first built. They are truly testimonials to the tenacity and ingenuity of their builders.



Left – The new Vega optic installed in the lantern room of the Sand Key tower. This new type optic is manufactured in New Zealand and used around the world. Photo courtesy of the author.



The Sand Key tower as it appears today. Note the dwelling and central tube are missing. The lantern has been painted white. Photo courtesy of the author.